Consuming Communication:
Promotion, Expertise, and Sustainability
in an Age of Participatory Media

by

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Abstract

Taking as its point of departure the historical processes of mediatization and reflexive modernization, this dissertation examines the circuits of promotion, expertise, and meaning that mutually constitute the production and consumption of the smartphone. Through a focus on the online media practices of manufacturers, technology publishers, and consumers, the research maps the sociocultural mediation of this ubiquitous communication technology and considers the material aspects of this mediation in light of global environmental risk.

As privileged media producers, manufacturers signify smartphones as revolutionary achievements of technoscience: powerful artefacts that expand user capacity for agency, enjoyment, and sociability. Within a context of networked individualism, smartphones are positioned as shape-shifting devices that may be continually adapted to fluid tastes, social settings, and evolving life scripts. Although technology obsolescence and production are primary contributors to overall environmental impact, manufacturers shift attention to e-waste disposal and consumer responsibility.

In their role as observers of the consumer electronics industry, technology publishers expand manufacturer promotion in time and space. As technology experts, authors circulate a collective taste for novelty, distinction, and performance. While published articles may be understood as practical resources for consumers navigating a complex space of artefacts and promotion, this expertise excludes considerations of long-term ownership, repair, and the environmental aspects of technology consumption.

This circuit of promotion and expertise provides a foundation for consumer sociability that both enlivens and undermines the activities of manufacturers and industry experts. While avid consumers express collective enthusiasm for new technologies, they are cynical towards promotion as a practice, question the predominant smartphone ideal, and attempt to influence manufacturer design strategies. This popular discourse broadens the scope of cultural resources available to users, but simultaneously reproduces dominant consumption norms that legitimize rapid technology obsolescence.

These findings suggest that despite increased public sensitivity to global environmental risks, the production and consumption of new communication technologies represents a continuation of first modernity processes. The disconnection between general environmental risk awareness and its specific manifestation in everyday life points towards the need for an expanded popular expertise and green citizenship as a basis for democratic rationalization and governance of media technology.

Keywords: digital media; mobile technology; consumer culture; advertising and promotion; environment and sustainability; technology design

To my family, for their love and support.

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Introduction

The Social and Cultural Mediation of Consumption

In early 2013, a class-action lawsuit was filed in Brazil against Apple on behalf of consumers who had recently purchased the company's third-generation iPad tablet (Bostic, 2013). The lawsuit alleged that Apple's release of the fourth-generation iPad only six months after the release of the third-generation model was a form of planned obsolescence and unjust business practice, since the features of the newer model were deliberately withheld from the slightly older model even though Apple could have included them in the product. According to the lawsuit, consumers who had purchased the slightly older model were sold a device that was deliberately designed to be obsolete even though they were promised a state-of-the-art device. In the U.S. similar complaints were unofficially acknowledged by the company. Some consumers of the third-generation iPad managed to exchange their devices for the newer model provided that they had purchased the older model within 30 days of the release of the newer model, an unofficial extension of the company's 14-day return policy (Apple Insider, 2012).

Although the merits of these complaints will not be analyzed here, the lawsuit and the consumer dissatisfaction that it represents is nonetheless instructive, since it touches on important issues central to our consumption of consumer electronics and our relationship with communication technology. Regardless of its plausibility in a court of law, the lawsuit may be understood as a collective expression of frustration with technology manufacturers and with the gadgets that increasingly pervade our lives.

Despite investments of money, time, and energy directed towards the acquisition, setup, and personalization of our communication tools, manufacturers are continually releasing new products that obsolesce past models. Worst yet, producers gradually abandon and leave these older models unsupported.

At the same time, this frustration seems to co-exist with a collective desire for and adoration of communication technology and the possibilities, pleasures, and progress that it has come to signify in contemporary consumer societies. Today, technology companies such as Apple, Google, and Samsung represent some of the world's largest and most successful corporations with market capitalizations that exceed the gross domestic product of many small countries (PwC, 2014). As of mid-2014, Apple is the world's largest company based on market capitalization, a position that it occupies ahead of Exxon Mobil, PetroChina, and General Electric (PwC, 2014). Equally importantly, in the past five years technology companies such as Apple, Google, and Samsung have sharply risen in global economic rankings and today are among the world's largest companies (PwC, 2014). This economic success would not be possible if the introduction of new communication technologies was not welcomed or embraced by consumers. Today, many households own multiple devices, a mix that includes permutations of desktop computers, laptops, tablets, e-book readers, and mobile phones (Pew Research Center, 2014a). Mobile devices in particular, including tablets, e-book readers, and smartphones are especially popular today and represent both the emerging face of new media as well as some of the world's fastest growing product sectors.

This rapid rate of production and adoption, however, is not without its problems, since it is also responsible for environmental harms that result from high rates of obsolescence and disposal (Choi, Shin, Lee, & Hur, 2006; Andrae & Anderson, 2010; Leonard, 2011). The production of consumer electronics is a highly toxic and energy-intensive process that relies on the extraction of many minerals, involves toxic substances and manufacturing processes, and is dependent on distribution networks and long global supply chains for its many sub-components. Production thus not only relies on unsustainable and toxic resource use, but is also very energy-intensive and results in high carbon-dioxide emissions that contribute to the greenhouse effect and global warming, the effects of which are evidenced by the melting of the world's ice caps,

high sea levels, and extreme weather events – global changes that are today acknowledged by the majority of the world's scientists, policymakers, and politicians.

Much of the finger-pointing and blame is perhaps unsurprisingly levelled at technology manufacturers who ultimately control product design, production processes, and release cycles and in so doing contribute directly to high rates of production and obsolescence. At the same time, research suggests that replacement buying of durable goods by consumers is more likely to be voluntary rather than imposed by manufacturers (Guiltinan, 2009). For example, even though they are likely still operational and functional, consumers today will replace their mobile phones every 1.5 to 2.5 years (Andrae & Anderson, 2010; Leonard, 2011). If we assume an average of 2 years as a replacement rate, a single individual today will consume 30 mobile phones in the course of their life over a 60-year period.

This high-frequency cycle of possession and disposal represents a drastic departure from the production and consumption rates of the recent past when telephones, television sets, radios, and even appliances were not only more durable and longer lasting, but were rarely replaced once they were purchased. Entire sectors of the economy, devoted to service and repair, have almost entirely vanished in the last few decades. In this respect, smartphones and consumer electronics more generally may be understood as a category of durable goods that alongside other categories of durables are effectively being transformed into throwaway non-durables. But unlike many household products which today are easily broken and quickly cease to function – a form of producer-led obsolescence – consumer electronics, including smartphones, tablets, and personal computers are often voluntarily replaced even though they are still operational and functional. Some of these enter used goods markets, but many simply pile-up in drawers, basements, and garages. Taken together, both forms of obsolescence co-exist today and are responsible for unsustainable resource use and environmental harm.

Although developments in production and market globalization are partly responsible for this shift, the change in consumer orientation towards goods and their possession suggests that cultural and social factors are also responsible for these

historical changes. As the sociology of technology has most clearly demonstrated, processes of meaning-making and social dynamics mediate our relation to technology and the ways in which we approach and appropriate artefacts. Moreover, this mediation is not limited to how products are packaged and advertised, but concerns the very core of what sorts of things they are, how they should function, and how they are related to existing cultural and social contexts. Processes of signification, interpretation, and sociality thus shape our relationship to technology and what it means to us in everyday life, including how we talk about it, orient ourselves to it, and invest ourselves with it; insights that furnish a broader and deeper understanding of consumption that moves beyond the limited individualistic and utilitarian perspectives of most economic theories.

Today much of our engagement with and sociability around goods takes place in online spaces created and maintained by producers, consumers, and media publishers, an emergent mediascape made possible by increasingly accessible web technologies and participatory media. In a context of pervasive and ubiquitous online communication, the promotion of goods, consumer enthusiasm towards their use, and collective forms of expertise and conflict over their meaning and form increasingly take place in online environments characterized by diverse content formats, interactivity, and wide global reach. Stated in another way, the consumption of information and communication technologies is increasingly mediated by information and communication technologies. Cultural and social processes that have traditionally been mediated by mass media and local contexts today also include online media spaces fostered by networked communication and always-on new media devices. In some ways these new spaces represent a continuation of long-term social, economic, and political processes and patterns. At the same time, producers, consumers, and publishers have found new ways to use online communication platforms and to appropriate their affordances in ways that represent a departure from the past. The net result is a social and cultural environment that is structured by rapid information and communication flows and which includes traditional and new approaches to promotion, collective meaning-making, and practices of consumption.

Dissertation Goals and Outline

The goal of this dissertation is to explore and investigate contemporary forms of technology consumption during a time of ubiquitous online communication fostered by the internet, web technologies, and participatory media. This general aim is given concrete form through a focus on the online activities of technology producers, media publishers, and consumers in relation to the production and consumption of a particular communication technology: the smartphone; an increasingly common communication technology that represents the emerging face of networked communication and new media. The case study is positioned within a theoretical and empirical field spanned by advertising and promotion, lifestyle expertise, and consumer tribalism as a means of examining the social and cultural activities of relevant social actors who contribute to the circulation of meanings and practices that underlie emerging forms of technology consumption. The primary focus of the dissertation is thus to analyze the practices of producers, publishers, and consumers in relation to a particular communication technology with a focus on online media spaces as a means to explore in detail the cultural and social mediation of consumption in contemporary consumer societies.

In relation to this primary research aim, the dissertation also strives to examine and reflect upon the relation between these social and cultural processes and technology obsolescence, understood in a broad sense as an imposed or voluntary replacement of technology that is otherwise operational and functional. This secondary focus is informed by ecological approaches to communication, technology development, and consumption that take as their starting point the collective risks and long-term environmental consequences of short-term economic and cultural activity. By way of an analysis of the production and consumption of a new media technology, its meanings, and forms of expertise, the dissertation seeks to understand the roles played by producers, lifestyle media, and consumers in the mediation of contemporary forms of obsolescence and environmental risk.

The dissertation begins with a detailed presentation of the theoretical approaches that provide a framework for both the dissertation's research questions as well as for its methodology and expected contributions. The opening chapter is devoted to situating communication, culture, and consumption within a longer history of modern

development, capitalist production, and collective risk. By way of theories of institutionalized individualization and risk society, contemporary forms of production and consumption are contextualized in relation to longer historical processes of detraditionalization, liberalization, and commodification. Looking at present-day media systems, the chapter also considers the sociotechnical mediation of these processes and the development of new media as a basis for and amplification of networked modes of individual and collective life. The chapter examines the changing nature of consumption in this networked media environment by considering the transformation of retail practices in relation to media developments that foster new modes of engagement and interaction across goods and services as well as between producers and consumers. The chapter concludes with an overview of existing research that documents the long-term environmental consequences of short-term individual and collective consumption practices with a particular focus on consumer electronics, obsolescence, and technology design.

The second chapter is devoted to an in-depth examination of contemporary production and consumption practices by way of a consideration of the interwoven activities of producers, lifestyle experts, and consumers. The chapter begins with an overview of existing theory and research that situates present-day production within a culturalized economy. Particular attention is given to advertising and promotion as a cultural institution that both draws on culture and attempts to modify and extend it in ways that are conducive to commodity consumption. The historical emergence of a promotional system and culture alongside industrialized commodity production is also summarized as a basis for situating contemporary practices of promotional design and promotional intertextuality. The chapter then moves to consider the role of lifestyle in a context of detraditionalization and individualization with a specific focus on social class, cultural capital, and consumption expertise. The discussion illustrates that within a context of declining traditional social norms, new skills, knowledges, and practices increasingly constitute emergent cultural norms and forms of distinction. In this more fluid cultural environment, lifestyle experts may be understood as cultural intermediaries who occupy a space between production and consumption, provide guidance in a field of rapid commodity and style turnover, and lend legitimation to particular tastes and consumption practices. The latter part of the chapter is devoted to an examination of

existing theories and research on the popular culture of consumption with a particular focus on consumer tribalism and the enthusiasms, sociability, and appropriation that animate contemporary practices of consumption. Neo-tribalism foregrounds the collective nature of affect and sentiment and draws attention to the rituals, sociability, and meaning-making practices of consumers engaging with mass produced goods. Although it is important to acknowledge this agency, the chapter situates it in relation to the socioeconomic structures which are discussed in previous sections and which define a field of opportunities, constraints, and biases that favour existing political orders.

The third chapter considers hermeneutic praxis and the meaning of goods in greater depth by way of an examination of the fusion of media and consumer culture, the imaging of commodities, and the association of goods with facts and other artefacts. Insights from the sociology of technology and actor-network theory are used as a basis to further elaborate the distinct contributions of advertising and promotion, lifestyle media, and consumer tribalism to the mutual co-construction of goods and their meaning. The chapter then moves to consider the process of interpretation by drawing on existing theorizations that explore the relation between cultural products, communities, and practices. Particular attention is given to the contextual, temporal, and spatial dimensions of interpretation and the interrelations and conflicts that characterize diverse frames of interpretation in liberal societies. As a means of organizing this complexity, a typology of consumption is used that is drawn from existing work in consumption studies that attempts to account for the diversity of logics that underlie contemporary forms of consumption. The chapter concludes with a discussion of the dissertation's methodology and research questions, including its expected contributions, data selection protocols, and research methods.

Once the theoretical framework and methodology have been elaborated, the latter half of the dissertation is devoted to a presentation of the research findings and concludes with a discussion of these findings in light of the original research questions and theoretical framework. In general, the dissertation is guided by a historical, holistic, and multidisciplinary approach that strives to account for the activities and interrelations of diverse social actors situated in a particular historic, economic, and cultural context. Consequently, it draws on contributions and insights from sociology, media and

communication studies, consumption studies, political economy of communication, cultural studies, and philosophy of technology.

Reflexive Modernization

Capitalist Development, Instability, and Disenchantment

In contrast to theories of post-industrialization or post-modernity that posit radical departures from industrial social orders, the theoretical approach adopted for this dissertation attempts to account for both continuity and change in modern society. More specifically, Ulrich Beck's account of reflexive or late modernity is used to situate the dissertation research as a productive starting point that traces important historical changes taking place within Western, capitalist, liberal-democratic societies that span industrial processes, social institutions, and cultural practices. Although these transformations represent a break from earlier modern societies, they are nonetheless situated within a longer history of modernity and the disruptive dynamics of both capitalist development and modern institutions.

According to Beck, Bonss, and Lau (2003), second or reflexive modernity is characterized by a questioning of the foundations of first modernity, including its categories, distinctions, and basic assumptions – a meta-analysis of modernity that takes place within modernity itself. In contrast to monocausal theories of social change, the theory of reflexive modernity posits a structural break with the past that is rooted in multiple and interrelated causes that emerge as a consequence of modernization itself. Like first modernity, which entailed a disembedding of traditional social forms and their re-embedding via industrial social structures, second or reflexive modernity involves an increasing disembedding of first modernity industrial social institutions and an on-going re-embedding of these institutions in emerging, transformed, and experimental social forms (Beck, 1994; Beck et al., 2003).

More specifically, if we understand first modernity societies as characterized by long-term processes of industrialization, democratization, and modernization, and founded upon given collective identities (e.g. class, ethnicity, family), the nation-state, full

employment, and the exploitation of nature, foundations that were developed and integrated gradually over time, then second modernity societies may be understood as a gradual transformation of these premises, characterized by change and instability across collective identities, the welfare state, the nature of work, and society's relation to nature (Beck, 1994; Beck et al. 2003).

As Beck et al. (2003) argue, the dynamics of capitalist development lie at the heart of this instability as they continue to gradually transform their own social foundations by incrementally undoing the nation- and welfare-state – a transformation of modern society from within by means of market expansion, legal reform, and technological development. The net effect is the emergence of a new kind of capitalism, with new global economic and political orders, and a transformation of the nature of work, increasingly characterized by precariousness, underemployment, and short-term employment.

A second source of deep instability, according to Beck et al. (2003), involves the accumulation and critical mass of unintended side-effects produced by first modernity institutions. Taken together, this proliferation of side-effects, from pollution to nuclear disasters to food contamination outbreaks, has the effect of undermining society's faith in first modernity institutions, a disenchantment that contributes to a questioning of the assumptions, premises, and institutions of first modernity. In contrast to the past, more specialization, more economic growth, and more and better technology are less persuasive today as a means of addressing increasingly global and systemic problems.

Institutionalized Individualization

Beck's theory of reflexive modernity is underpinned by the theses of institutionalized individualization and risk society, both of which provide productive starting points for this dissertation. According to Beck and Beck-Gernsheim (2002), the process of modern individualization may be situated within a longer history of detraditionalization that can be traced back to the Renaissance and which includes social and cultural changes associated with Protestantism, peasant emancipation from

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feudal bondage, the loosening of inter-generational family bonds, and increasingly today by freedom from historically inscribed roles.

Within this longer context, first modernity individualization may be understood as a shift from traditional social and cultural life to an institutionalized individualism that includes private property, the modern family, and civil society (Beck & Beck-Gernsheim, 2002). Here the central institutions of society are primarily oriented towards the individual as opposed to the group, as expressed by the emergence of civil, political, and social rights as well as by way of individual education, property, and employment.

Second modernity individualization may be understood as a shift from first modernity arrangements to an emergent and indeterminate social and cultural order characterized by individual risk and precarious freedom, the fragility of class and family, and the disintegration of stable frames of reference (Beck & Beck-Gernsheim, 2002). In this context, there is an increasing offloading of opportunities, uncertainties, and burdens onto individuals that were previously more evenly distributed across families, class, and other social institutions.

Within a context of a shrinking welfare state and the privatization of everyday life, individuals are expected to take life into their own hands and are increasingly more dependent on market mechanisms for income, services, and security. But for Beck and Beck-Gernsheim (2002), these are not the autonomous individuals of neoliberal ideology, but rather individuals intertwined with modern institutions, conditions, and regulations that define a horizon for elective life biographies. For example, educational grants and opportunities, pension regulations, private insurance, and tax policies as well as rights, responsibilities, and entitlements centred on individuals invite people to constitute themselves as and act as individuals. In a similar way, the shift from full employment, low unemployment, and job security to increasingly fragile and flexible employment, short-term contracts, and underemployment requires individuals to think, plan, and act as individuals who are increasingly responsible for their own security, continuity, and survival.

Although Beck and Beck-Gernsheim (2002) suggest that institutionalized individualization is an uneven process that varies within and across societies, regions,

and social groups, it is nonetheless a systematic development of modernity. In this context, first modernity social structures do not so much disappear as attain a different status. Whereas in the past traditional social structures such as the family and community formed an unquestioned background of everyday life, today they are increasingly experienced as variable and open to choice – subject to questioning, interrogation, and evaluation. There is a shift from relatively standardized and unquestioned social ties and life biographies towards increasingly reflexive and risky "do-it-yourself" and "tightrope" biographies (Beck & Beck-Gernsheim, 2002). However, this shift is not by choice, but rather a social condition whereby individuals are condemned to individualization and compelled to create and manage their life biographies and social relationships within a context of changing preferences, an insecure labour market, and a shifting welfare state.

As Giddens (1991) argues, individuals today have no choice but to forge a unique lifestyle and to create stability for themselves in a culture of constant change marked by the disappearance of traditional guidelines and their replacement by continually changing information, advice, and expertise. Individuals must continually monitor, sift, and adjust in light of new information across diverse domains, including work, relationships, health, food, and goods and services, and must assume greater responsibility for their choices, self-care, and identity. Second modernity individualization demands active participation from individuals who are required to navigate a wide range of life options, engage in short- and long-term planning, and overcome expected and unexpected obstacles.

Given this increasing choice and precarious freedom, everyday existence is no longer self-evident and requires ongoing decision-making and evaluation as individuals seek to stabilize themselves through the construction and management of lifestyles, traditions, and routines (Giddens, 1991; Beck & Beck-Gernsheim, 2002). Option-burdened individuals increasingly turn to expert authorities to seek advice and relief from endless possibilities and decision-making. The individual may be understood as a rule-finder (Lash, 2002) engaged in everyday experiments and adaptations in daily life (Giddens, 1994).

Although some social critics bemoan the loss of traditional forms of community and social life, Giddens (1991) suggests that we understand social relationships in reflexive modernity as open to greater authenticity and diversity, since they are not constrained by the obligations of traditional societies. That is, relationships that arise from mutual interest, pleasure, and support are likely to be more meaningful to individuals than those imposed by tradition.

In a similar way, Beck and Beck-Gernsheim (2002) argue that processes of individualization do not spell the end of intimacy and relationships but rather involve a process of transformation whereby cultural democratization becomes an organizing principle for everyday life. Individuals continue to seek mutual obligation and community, but it is increasingly structured by reciprocal individuation and a normative horizon of expectations that is negotiated and justified by participants on a case-by-case basis across friendships, romantic relationships, and other associations. Rather than simply producing selfishness and atomization, Beck and Beck-Gernsheim (2002) argue, reflexive individualization requires that individuals establish their intersubjectivity, which is no longer determined by fixed obligations and values and which requires ongoing recognition of the other, negotiation, and social sensitivity as individuals attempt to balance personal freedom and engagement with others.

Risk Society

In addition to a deepening process of individualization, for Beck reflexive modernity is also characterized by a shift of industrial society to a risk society, which emerges as a result of ongoing and cumulative destructive side-effects of industrialization and the inability of modern institutions to adequately regulate techoscientific development (Beck, 1994; Beck 1995). The emergence of risk society may be understood in two phases. In the first phase, the negative consequences and dangers of industrialization are systematically produced but remain relatively contained and legitimated as residue side-effects, and as such remain outside of public debates and conflicts. In contrast, in the second phase, industrial dangers and side-effects increasingly dominate public awareness, debates, and conflicts. Human-produced risks proliferate everywhere and industrial society is increasingly viewed by the public as

laden with problems. Although modern institutional decision-making and action continues as before, it is perpetually shrouded by possible legitimation crises. In this second phase, there is a profusion of areas of unpredictability and danger, the survival of the human species becomes an open question, and the condition of risk becomes a central aspect of culture.

According to Beck (1994), risk society represents a meta-change in society whereby a public reflection takes place about the promises of technical development based on past experiences, failures, and unintended consequences. It signals a shift in public understanding and expectation that entails a greater appreciation of the risks and dangers inherent to industrialization and technological development. Itself a side-effect of the cumulative side-effects of industrialization, it represents a self-confrontation of first modern society with itself, the result of a systemic focus on perpetual economic growth and a systematic abstraction and ignorance of the "externalities" and negative ecological impacts of this activity.

Risk society is characterized by two general trends. First, the public recognition that local risks can have global consequences, and second, growing public awareness that industrialization and capitalist development are harmful to the environment (Beck, 1992; Beck, 1995). Although the everyday activities and practices of capitalism take place in local contexts, their negative effects are cumulative, aggregate, and non-local in scope. For example, air pollution, acid rain, and global warming cannot be traced to any single local context, yet industrial activity by multiple actors across many local contexts contributes to these environmental problems. This recognition is matched by a growing environmental awareness since the 1960s that today is increasingly part of public, scientific, and political discourses and may be traced across media coverage of industrial catastrophes, green campaigns by manufacturers and political parties, and the growth of environmental protection and pressure groups.

Given this institutional and cultural context, risk increasingly becomes a site of struggle among scientific experts, economic and political actors, and the lay public, whereby each group may have conflicting perceptions and definitions of what is and is not acceptable as a basis for economic or technological development (Beck et al., 2003).

In a risk society, interest group politics increasingly includes consumers and new social movements who challenge scientific and technocratic rationales and who demand accountability and consideration of dangers and risks that have historically been systematically ignored.

New Mediations

Sociotechnical Institutions

In his assessment of Beck's theorization of reflexive modernity, Lash (2002) argues that Beck fails to adequately consider the sociotechnical basis and mediation of individualization and risk society in his analysis. To the extent that individualization involves a shift towards increasingly self-directed life biographies and a plurality of detraditionalized and elective social affiliations, it is necessary to examine the ways in which lifestyle options and sociability are mediated by modern sociotechnical systems, including media of communication, for example, which are of particular interest to this dissertation. Lash argues that reflexive modernity is permeated by the interlacing of social and technical systems and that we need to understand reflexive individuals as sociotechnical subjects, who seek a life of their own, experiment with new forms of social life, and engage with culture and risk, but always at the interface of the social and technical.

More generally, Verbeek (2005) suggests that we approach technology as a form of mediation of the relation between human beings and the world. Technologies, according to Verbeek, co-determine the constitution of subjectivity and objectivity and co-shape the contact between human beings and their world, both in terms of how human beings can be present in the world and how the world can be present to them. In contrast to classical philosophy of technology, which understands technology as a force that alienates people from reality or their authentic existence, Verbeek argues that technology is ambivalent and needs to be approached in terms of its richness, complexity, and potential for transformation of the ways in which reality can be present for us and the ways in which we can be present in the world. For Verbeek, life in a

technologically-mediated society implies that some ways of being are strengthened while others are weakened.

For Verbeek agency is not determined in the strict sense by technology, but is understood to be structured by technology, both directly (perception, action) and indirectly (interpretive frameworks, involvement). That is, technology contributes particular forms to our experiences and involvements with the world. The structure of this mediation, according to Verbeek, is best understood in terms of amplification/reduction and invitation/inhibition.

New Media

Of particular interest to this dissertation, new media represents a form of mediation that is increasingly pervasive and embedded in everyday life in Western societies, both as a means for the enactment of individualization and elective life biographies as well as an increasingly valuable material component of economic and technological development interwoven with harmful industrial activities and ecological side-effects. To appreciate the ways in which new media structures and mediates subjectivity, intersubjectivity, and action as well as its role in economic processes and environmental consequences, we can examine some of its defining characteristics and the ways in which they have been appropriated by technology producers, content creators, and users.

To begin with, new media is a convergent media that combines computing technology, communication networks, and content (Flew & Smith, 2011). This convergence spans multiple levels, including the economy, with previously separate industries merging, as in the case of AOL and Time-Warner in the U.S., for example, as well as at the level of services, including the merging of broadcasting and telecommunication services, as exemplified by Rogers Inc. in Canada. At a technical level, new media is characterized by device convergence, whereby a wide range of devices are increasingly being developed and extended to function as multi-purpose conduits for accessing and interacting with diverse forms of digital content (Flew & Smith, 2011). For example, personal computers today function as conduits for telephone

communication via add-on software, mobile phones may be used as game platforms via user-enabled apps, and TVs are being re-configured as general-purpose web appliances.

At its core, new media is digital media that enables production, storage, transmission, and reception via digital formats and includes technologies capable of reading, displaying, and modifying these formats. New media combines different types of digital data and today seamlessly integrates text, image, sound, and video which are typically distributed via digital networks. In its digital form, content is manipulable, networkable, and compressible, and on its own impartial to how it is used (Flew & Smith, 2011).

When compared to traditional mass media, new media also supports a much greater degree of interactivity and mass participation than has been possible in the past (Flew & Smith, 2011). Although both interactivity and participation precede new media – by way of telephone, CB radio, and telegraph – the nature of past forms of interaction was typically one-to-one, whereas new media supports communication spaces where both interactivity and group participation are possible, as exemplified by instant messaging and online forums, for instance.

Today, new media constitutes both new forms of communication as well as the transformation of past media forms, which are extended and modified by new media. These media hybrids entail the combination of traditional media and new media, broadcasting as well as interactivity, and mass produced content alongside user-created content and customization (Flew & Smith, 2011). For example, virtually all news publishers today disseminate news online via a traditional broadcasting model but also supplement this coverage with search functions that enable readers to access news of personal relevance as well as include reader discussion forums and interactivity alongside published news stories.

Lastly, new media is increasingly characterized by platforms and interfaces that support the publishing and wide dissemination of user-produced content in addition to more traditional forms of content production (Flew & Smith, 2011). Unlike traditional media, which requires prohibitively expensive equipment and infrastructure for

production, new media technologies are relatively much more publicly available such that non-professionals may engage in media production and distribution. The emergence of web platforms for publishing text, images, audio, and video online enables once passive users to take on a more active role in the media environment as producers, consumers, and collaborators.

New Media Use

Today new media is interwoven into the daily rhythms for most people and forms an unquestioned background of everyday life. In the United States, for example, 87% of adults are online, a figure that climbs to 97% for younger adults aged 18 to 29 (Pew Research Center, 2014b). Likewise, in Canada, 80% of adults access the internet from home, a figure that jumps to 96% for younger adults aged 18 to 34 (Statistics Canada, 2010a). In both the U.S. and Canada, these figures increase proportionally with education and personal and household income. For example, 97% of American and 95% of Canadian adults who have completed a university degree are online. Likewise, 93% of American adults with a household income between $50,000 and $75,000 are online, a figure similar to rates in Canada where 92% of adults with a personal income of at least $50,000 access the Internet from home (Statistics Canada, 2010a; Pew Research Center, 2014b).

Generally speaking, new media users tailor their content consumption and interactivity based on personal needs, preferences, and social affiliations. In the U.S., the majority of adults online use search engines (92%), send or receive email (92%), access news (76%), and use social media sites such as Facebook (74%) (Pew Research Center, 2011a; Pew Research Center, 2014c). The usage patterns in Canada are similar, with the majority of adults online using email (93%), seeking out information of interest, e.g. about family history or parenting (73%), looking for health and medical information (70%), and accessing news or sports (68%) (Statistics Canada, 2010b). As in the U.S., approximately 2 out of 3 Canadians (64%) have a profile on a social network such as Facebook (Breikss, 2012).

Social media use, like new media use more generally, increases inversely with age, with 89% of 18 to 29 year olds and 82% of 30 to 49 year olds in the U.S. using social media today (Pew Research Center, 2014c). With respect to motivations for use, the majority of social media users in the U.S. cite staying in touch with friends (67%) and family (64%) as the major reason for using social media, whereas connecting with old friends (36%) and connecting with others with shared interests (35%) were most often cited as minor motivations for use (Pew Research Center, 2011b). The large majority (85%) of social media users in the U.S. experience other users as mostly kind and report positive experiences that make them feel good about themselves (68%) and which make them feel closer to others (61%) (Pew Research Center, 2012).

Networked Individualism

By way of search engines, diverse websites, and a wide range of online social spaces, new media users have access to information, expertise, entertainment, and forms of interactivity that, on the one hand, rely on traditional forms of content production and consumption, while on the other, depart from the traditional relationship between media producers and audiences. Not only do new media users have greater control over which content they wish to consume and when, but they can also participate in the co-creation of diverse forms of content, including personal expression, online journalism, podcasting, and video production.

According to Wellman et al. (2003), new media may be understood as both providing a basis for the enactment of individualization as well as contributing to its extension in scope in a positive feedback loop between emerging forms of everyday life and technological developments that foster personalization and networked forms of sociability. In line with Beck and Beck-Gernsheim (2002), this *networked individualism* is understood as a general social transformation and trend that precedes new media, but which finds new forms of expression and extension in an age of digital and social media. As Wellman et al. (2003) argue, the individual rather than the household increasingly becomes the primary unit of connectivity across separate and unique communities which continue to act as sources of support, sociability, information, and identity for individuals. In this network social model, individuals are conceptualized as nodes between links and

social networks who cultivate personal community connections and dynamically switch among multiple and diverse sub-networks.

As Wellman et al. (2003) point out, new media provides a number of affordances that are well suited to the enactment of individualization and to the management of personalized social networks. As a sociotechnical system that today is deeply embedded in daily life, contemporary new media is characterized by always-on connectivity that enables instant access to diverse forms of information and makes possible ongoing communication across diverse social networks in ways that are increasingly de-linked from place through wireless portability. New media users today have access to a globalized communication network that facilitates transnational communication and which builds on and extends past technological systems, including telephone, radio, and satellite networks. Relative to past media, new media is also characterized by a high bandwidth capacity that may be used to transmit diverse forms of content. Equally importantly, this content and communication may be personalized to a great extent and tailored to individual needs, preferences, and individualized forms of engagement and interaction.

Networked Consumption

New media is also a space, set of technologies, and interface for emergent practices of consumption, both as an object of consumption itself (new media technologies) as well as a form of mediation for the consumption of goods and services more generally. The digitalization and networking of consumption entails the merging of economic, social, and cultural processes of production and consumption with new means of signification, communication, and interaction for both producers and consumers. In a new media environment, products and services may be simultaneously advertised and promoted, examined, compared, discussed, purchased, and reviewed within a single media platform. For active consumers, new media provides affordances for appropriating goods, sharing information, and organizing alongside or in opposition to producers and manufacturers.

According to Lehdonvirta (2012), the history and forms of digitalized and networked consumption may be traced along three phases, spanning online shopping, participatory consumption, and virtual consumption. In the earliest of these, the emergence of online shopping, brick-and-mortar stores were augmented and in some cases replaced by shopping websites that enabled online payments and purchases. In this phase, consumption was transformed through always-on availability, wide geographical reach, and an increased selection of goods through expanded inventories and the proliferation of niche retailers. For consumers, online shopping provided increased convenience, the ability to engage in virtual window shopping, and an abundance of visual resources for daydreaming and fantasy (Lehdonvirta, 2012).

The establishment of online shopping has been gradually supplemented by the development of new participatory platforms and easy-to-use interfaces designed to extend the communicative and social affordances of new media to consumption. In this phase, consumption is further transformed by increased opportunities for consumer participation and discussion, information sharing, and producer/consumer collaboration. Consumers are offered more active roles and invited to socialize around consumption in new online spaces provided by both producers and self-organized consumers (Lehdonvirta, 2012).

Most recently, some new media platforms, most notably social media and online gaming, have been transformed through the establishment of markets for virtual goods and the development of online spaces for their production and consumption. This most recent phase of digitalized and networked consumption entails the emergence of a new class of objects whose existence is entirely circumscribed by the digital and social networks that make possible their production, exchange, and consumption. This phase of consumption is marked by the emergence of consumer-based production of virtual goods, by both individual creators of digital resources as well as by organized networks such as digital "farms," whereby groups of users cultivate and produce virtual goods as a commodity to be sold and exchanged via online markets (e.g. eBay) (Lehdonvirta, 2012).

Taken as a whole, today the new media consumption-scape includes producer websites, forums, and shopping portals as well as producer-created social media and audiovisual content that spans marketing and promotion efforts. It also includes websites devoted to product reviews, lifestyle publishing and advice, unofficial product and support forums, consumer-authored blogs and advocacy campaigns that focus on specific manufacturers, products, and services, as well as consumer-created and managed spaces for sharing information, experiences, and product modifications. It includes content produced and consumed by manufacturers, publishers, official and unofficial experts, and consumers, each of whom may interact with other actors via formal and informal channels facilitated by new media across a spectrum of visibility, from interaction on publicly accessible websites to private one-to-one communication via email or other official support channels.

Existing research on online activities suggests that users engage with new media for consumption at a number of distinct levels. In the U.S. for example, the large majority of online adults (78%) search for information about products or services that they are thinking of buying (Pew Research Center, 2013). Similarly, approximately 93% of Canadians who are online search for product information (Breikss, 2012). Other common new media uses for which data is available in the U.S. include making a purchase online (71%), looking for how-to or repair information (68%), rating a product, service, or person online using a rating system (37%), and posting a comment or review about a product or service (32%) (Pew Research Center, 2013). Examining recent Canadian data, the most popular categories of goods and services that are researched online include consumer electronics (48%), travel arrangements (46%), and clothing, jewellery, and accessories (45%) (Statistics Canada, 2012c). In sum, new media use oriented towards consumption includes a number of common activities today that include product research, information gathering and sharing, review and assessment, and online purchase of goods and services.

Technology Consumption and Ecological Risk

Consuming New Media

In addition to being a platform for the mediation of individualization, sociability, and consumption, new media may also be approached from the perspective of consumption of new media technologies themselves. As an object of consumption, new media today encompasses some of the largest global industries devoted to the production and distribution of digital, networked devices and the components and parts which underlie their operation. As necessary prerequisites for new media use, these technologies are quickly becoming ubiquitous across the workplace, in education, and in domestic settings.

Based on recent data from the U.S. (Pew Research Center, 2014a), 90% of American adults own a mobile phone and 78% own a laptop or desktop computer. And although they have only recently been introduced onto the market, 42% of American adults own a tablet and 32% own an e-book reader (Pew Research Center, 2014a). With respect to smartphone adoption rates, 58% of mobile phones in the U.S. today are smartphones, a figure that climbs to 62% in Canada (Pew Research Center, 2014a; comScore, 2013). In addition, 80% of all newly-acquired mobile phones in the U.S. are now smartphones (NPD Group, 2012). In most cases, individuals own multiple devices and use a variety of means and platforms to access new media content and to communicate with others.

Equally importantly for the purposes of this dissertation, each device has a limited lifespan and is upgraded or replaced as a result of breakdown or obsolescence. Understood as objects of consumption, new media technologies are implicated in global production, distribution, and consumption processes that today contribute to well-documented environmental harm and unsustainable resource use.

Ecological Risk Society

As Mythen (2004) points out, current research that examines environmental harm and resource exhaustion provides strong support for Beck's risk society thesis:

cumulative negative consequences and side-effects of industrialization and capitalist development are not being adequately contained and managed by modern institutions, even though there exists a general consensus among scientific experts and policymakers that short-term economic and social benefits are generating long-term negative consequences for both people and the environment (IPCC, 2014).

Most notably, these consequences include human-produced climate change and global warming resulting from mass production, energy use, and the greenhouse effect, rooted in rising global greenhouse gas emissions (Mythen, 2004; IPCC, 2014). Capitalist production and consumption are also responsible for global deforestation. It is estimated that the world's forests today are approximately half their original size and that they continue to shrink at a rate of approximately 65,000 square miles per year (Mythen, 2004). This destruction of plant life amplifies the greenhouse effect as there are fewer trees to consume greenhouse gas emissions. Similarly, there is general agreement among climatologists that temperature increases as a result of global warming are greater than anticipated, resulting in rapid melting of the world's ice caps and rising sea levels (Mythen, 2004, IPCC, 2014).

Although this environmental harm is global in scope, its sources are multiple, localized, and diverse. Affluence-induced environmental destruction, including the greenhouse effect, is primarily caused by Western, industrial North societies whereas poverty-induced environmental harm, including clearing of the world's rainforests, is mainly caused by societies in the global South (Beck, 2009). And although capitalist development and inadequate institutions are responsible for the current state of affairs, worldwide population growth and increased levels of consumption also contribute to and exacerbate existing problems. Not only has there been a six-fold increase in the world's population since 1800, an expansion from 1 billion to 6 billion people who today draw on the planet's limited resources, but higher levels of individual consumption have a cumulative and aggregate effect on both resource use and greenhouse gas emissions (Mythen, 2004, IPCC, 2014). During the course of the 20th century, per-person consumption levels in the U.S. have increased 10-fold and personal waste is expected to double by 2020 (Mythen, 2004).

Media Technologies and Environmental Harm

The rapid production, distribution, and consumption of commodities in general and new media technologies and personal electronics in particular is implicated in multiple ways with negative environmental impacts and unsustainable resource use. A mobile phone, for example, includes components from rare earth elements that are often extracted from regions with poor environmental regulation and at times from sites with protracted social conflicts over valuable resources (Maxwell & Miller, 2012). Requisite components are globally produced and manufactured at multiple sites which requires extensive global transport of both parts and final products. Short device lifetimes and high device turnover results in high levels of dispossession and disposal and while some recycling of components is possible, it is difficult and dangerous to both people and the environment (Maxwell & Miller, 2012; Leonard, 2011; Flew & Smith, 2011).

More generally, consumer electronics typically require over 1000 different materials and substances for their production, including solvents, gases, plastics, mercury, and flame retardants (Maxwell & Miller, 2012; Leonard, 2011). Production is a chemically intensive process, especially in the manufacture of semiconductors and components. Today, the majority of the world's electronics are produced in Asia by contract manufacturing companies interwoven in long regional supply chains, with a number of large manufacturers, such as Foxconn and Flextronics, for example, relying on thousands of smaller component manufacturers. Although voluntary codes of conduct exist for workplace and environmental protection, dynamic and complex supply chains are notoriously difficult to monitor and harm to both people and the environment continues to persist (Maxwell & Miller, 2012; Leonard, 2011). On the post-consumption end of the life cycle, much of the world's electronic waste is exported to the global South where crude and low quality recycling methods are used to extract valuable materials. Manual heating and burning of components releases toxic chemicals that contaminate the air, water, and soil and which are poisonous to the people carrying out this work (Maxwell & Miller, 2012; Leonard, 2011).

In their analysis of the life cycle of a desktop computer, Choi et al. (2006) demonstrate that overall the production stage is the most significant with respect to environmental harm and impact, followed by the disposal and recycling stage. Although

the use stage includes carbon-dioxide emissions as a result of non-renewable energy consumption required to power a desktop computer during operation, the overall environmental impact is much lower at this stage relative to the production and disposal stages. The production, or pre-manufacturing stage, includes raw material extraction and its application to the production of electronic components and parts, which include the main board, central processing unit, memory cards, hard drive, and cables and wires. The main board, in particular, was identified by Choi et al. (2006) as a significant component for overall environmental impact as it includes a printed circuit board and hundreds of small parts, including resistors, condensers, and connectors. Taken as a whole, the production stage was found to contribute to the full spectrum of established environmental impact categories, including non-renewable resource depletion, carbon-dioxide emissions, eco and human toxicity, acidification, ozone layer depletion, and eutrophication (Choi et al., 2006).

In a similar way, Andrae and Anderson (2010) conducted a recent review of life cycle assessment studies of consumer electronics and found that mobile phones, including smartphones, also have the greatest environmental impact during the production and transport stage, which is responsible for approximately 80% to 90% of carbon-dioxide emissions during a phone's lifetime. This is significant for a number of reasons. To begin with and as was already mentioned above, mobile phones are becoming ubiquitous and deeply embedded in people's everyday lives. As of 2011, approximately 75% of the world's population owned a mobile phone, corresponding to over 5 billion mobile service subscriptions (Maxwell & Miller, 2012). Secondly, mobile phones are being acquired and disposed of at increasingly higher frequencies than in the past. Current estimates of mobile phone ownership range from 1.5 to 2.5 years (Andrae & Anderson, 2010; Leonard, 2011).

The net effect of these trends is that aggregate production and disposal rates continue to climb and environmental harm continues unabated as a result. In the United States, approximately 400 million electronic devices were recently disposed of in a single year and e-waste continues to grow at a rate that is 2 to 3 times greater than other forms of waste (Leonard, 2011). There is also a "rebound effect" with respect to energy use (Maxwell & Miller, 2012). Although individual devices are becoming more energy

efficient in use, more devices are being consumed and replaced by individuals and organizations. Given that production accounts for a significant proportion of overall environmental impact, energy efficiencies realized during technology use are superseded by increases in overall technology ownership and energy-intensive production processes. At a global level, the manufacture and use of information and communication technologies is currently comparable to the aviation industry with respect to greenhouse gas emissions (Maxwell & Miller, 2012). More importantly, global energy consumption is expected to rise as a result of increased worldwide consumption of information and communication technology. According to the International Energy Agency, electricity consumption by electronic equipment will rise from 15% of global demand in 2009 to 30% by 2022 and to 45% by 2030 (Maxwell & Miller, 2012).

New Media, Mobile Edition

Mobile technologies are also significant for another reason: they represent the emerging face of new media and the cultural shift from the task-focused desktop to always-on, networked, portable devices, the new locus for information and communication applications and services (Flew & Smith, 2011). In the case of the smartphone, there is a shift away from the primacy of telephony towards other practices of communication, including text messaging, email, and social media as well as gaming, multimedia, and general-purpose internet use (Flew & Smith, 2011). Smartphones today provide users with a handheld, general-purpose technology that is highly malleable and in many ways equivalent to a personal computer: a plethora of settings, applications, and services may be enabled by the user such that the final form and function of the device can be tailored to each user's needs and preferences (Flew & Smith, 2011).

The widespread adoption and embrace of smartphones can also be gauged by the economic performance of mobile phone manufacturers. Today, Apple, Samsung, and Google represent industry giants and economic growth success stories, even in spite of and during recent global economic downturns. Although traditional mobile phones continue to be produced and consumed worldwide, the smartphone and tablet markets are the fastest growing and the most prestigious and profitable to global manufacturers (Flew & Smith, 2011).

The actual sale of individual handsets may be a source of significant profit for manufacturers, but is ultimately only a first step in the portable device revenue chain, which today also includes manufacturer-managed music, movie, book, and software application markets, which are operated as fenced-off islands among competing manufacturers and content providers, and which enable device customization and the consumption of cultural content. The emergence and economic success of these digital markets has diversified and expanded the revenue streams of global electronics manufacturers who today produce the technologies, software platforms, and digital markets necessary for the technology to function. Third-party content producers, for music, books, movies, or applications forego a proportion of their sales revenue as a fee for inclusion in and distribution within manufacturer-controlled digital platforms.

Progressive Design and Policy

Despite the many negative environmental consequences of electronics production, some progress has been made in several areas of electronics manufacture. Most notably, there has been a gradual emergence of a sustainability design culture among industrial designers and engineers with a focus on ethical design practices that today are increasingly part of professional education (Guiltinan, 2009). Through a focus on longer lasting designs, including classic designs and designs matched to local cultural contexts, progressive design represents one means to lengthen product replacement cycles. In addition, there has also been a recent emergence of new tools and technologies that are increasingly being integrated into product development and planning, including Design for the Environment, Life Cycle Assessment, and Environmental Impact Assessment (Guiltinan, 2009). Lastly, approaches such as Design for Adaptability focus attention on the ways in which products may be designed so that they are easily amenable to adaptation based on changing needs, functions, or culture. Products designed with replaceable subsystems and modules enable users to substitute individual parts as an alternative to full product replacement (Guiltinan, 2009).

At the legislative level, the emergence of Extended Producer Responsibility or "Producer Takeback" programs and laws extends traditional waste systems upstream to manufacturers who are required to take responsibility for the collection, disposal, and

recycling of their own products (Maxwell & Miller, 2012; Leonard, 2011). These initiatives attempt to internalize costs and negative consequences that have traditionally been externalized by producers onto consumers, governments, and the environment. As a motivator for more sustainable design, they aim to provide positive incentives to manufacturers for the use of environmentally safer materials and for the design of more recyclable products that are less toxic to both people and the environment.

A recent survey and evaluation conducted by Greenpeace (2011) suggests that some progress is being made in the global electronics industry. In its examination of desktop computers, laptops, monitors, televisions, and mobile phones, which were voluntarily submitted by manufacturers as representative of their greenest products on offer, Greenpeace noted a general improvement relative to past assessments, a significant reduction by manufacturers of toxic chemicals, and a general trend towards meeting and exceeding energy efficiency standards. Despite these advances, however, manufacturer life cycle management and responsibility continued to represent the weakest aspect of electronics production, with little use of recycled plastics and ongoing fast obsolescence of products cited as key problem areas (Greenpeace, 2011).

Planned Obsolescence

Despite well-documented social and environmental harms, electronics manufacturers continue to produce devices that are "designed for the dump" (Leonard, 2011), in the sense that they are easy to break, include components that are hard or impossible to replace, and are generally impractical to repair. Products continue to be designed for short lifespans and either stop working or become undesirable within a specific time period (Leonard, 2011).

As Guiltinan (2009) argues, there are strong incentives for producers to maintain and encourage product obsolescence (Packard, 1963/2011). To begin with, capitalist production requires and rewards perpetual sales growth, even though successful producers will eventually saturate the market with their goods. Durable and reliable products lead to longer purchase cycles, slower rates of growth, and larger and stronger used goods markets. The existence of a strong used goods market has the potential to

both decrease the sales of new products and to decrease the sale price of these new products. In contrast, a high rate of replacement via obsolescence can stimulate sales, reduce competition with used goods, and increase the price of new products.

In a similar way, capitalist market dynamics further amplify producer motivations against durability, especially in industries that are highly competitive and dependent on rapid product development (Guiltinan, 2009). In an economic context characterized by post-Fordist manufacturing, which enables fast product cycles, flexible and concurrent production processes, and rapid execution of designs, orders, and deliveries, market competition will reward producers and designs that are innovative, stylish, and in step with fast-changing fashions. Likewise, product cannibalization is a necessity today in the global electronics industry. Manufacturers must cannibalize their own products even if the products are already market leaders; otherwise competitors will steal market share with more recent and innovative designs.

Obsolescence Strategies

There are several strategies that manufacturers can use to achieve obsolescence and to stimulate replacement buying, some of which are direct and attempt to shorten a product's usable life and some of which are indirect and attempt to encourage replacement buying even though the original product is still functional (Guiltinan, 2009). Direct strategies include design for a limited life (a standard practice in the 1950s and 1960s), where products are designed to stop working after a short period of time. A second direct strategy includes design for limited repair, where products are designed in such a way that they are difficult, expensive, or impossible to repair, such as single-use cameras and most mobile phones produced today.

Indirect strategies that aim to encourage replacement buying of otherwise working products include design for aesthetic decline, where design elements are used that age quickly or poorly and which lead to consumer dissatisfaction. For example, metallic, pristine, and polished surfaces are easy to scratch and degrade poorly with everyday use. Fashion is also being increasingly applied to consumer electronics, with efforts increasingly focused on styles, colours, materials, and motifs for laptops and

mobile phones. Lastly, functional enhancement through improved performance or the addition or upgrade of product features is intended to expand the purported uses and benefits of goods. The inclusion of a faster processor, more system memory, or a better camera to a new mobile phone, for example, is intended to stimulate replacement buying even though an existing product may be otherwise fully functional.

Although producers may apply a number of strategies to obsolesce products and stimulate replacement buying, consumer decision-making will ultimately determine whether and when replacement products will be acquired and what will be selected as the replacement. At the same time, the nature of a given market will always constrain this decision-making process. For example, if all producers in a given market supply products with short lifespans, consumer selection is reduced to a fictive choice among superficially differentiated goods. In his review of the existing literature, Guiltinan (2009) concludes that there is limited research that examines consumer replacement practices and disposal of durable goods. The research that is available suggests that voluntary rather than forced replacement is more common among consumers and that consumer interest in replacement products may be a strong motivator for action. This assumption is consistent with Campbell's (1987) theory of imaginative hedonism, which suggests that new and novel products provide a basis for daydreaming, pleasure, and fantasy.

Guiltinan (2009) also notes that there is some research support for the "impatience rate" thesis, where a high rate of product obsolescence created by manufacturers is understood to influence the value that consumers attach to upgrades, such that consumers' perceived value of a short-term purchase will outweigh the perceived value of long-term savings. In a similar way, research suggests that higher rates of obsolescence can influence consumer perception and interpretation of innovation (Guiltinan, 2009). Rapid and frequent product upgrades can create a heightened sense of dissatisfaction with existing possessions regardless of the actual quality or utility of the purported enhancements.

With respect to consumer perception of durability, existing research suggests that other considerations and factors are often prioritized in decision-making processes and that consumers often ignore durability information about products (Guiltinan, 2009).

When consumers do take durability into account, it is typically understood as a marker of quality rather than a consideration of environmental impact. More generally, existing research suggests that environmental attributes of goods are not considered as important by most consumers and that there is a general lack of knowledge about the environmental impact of goods, despite the fact that environmental issues are more widely covered today by the media. Consumers also attribute environmental responsibility to producers, whom they believe should produce environmentally safe products (Guiltinan, 2009). Considered in light of Beck's risk society thesis, this research suggests that even though general environmental awareness may be higher today than in the past, this awareness operates at a general level that appears to be disconnected from everyday life and specific knowledge about the environmental impact of commodity production and consumption.

The Economics and Politics of Technology

Producer-introduced and consumer-activated obsolescence may be understood as a tendency particular to contemporary capitalist technology production as opposed to an inevitable aspect of technology development in general. Under current conditions of production, technology as a commodity-form is manufactured in such a way as to realize short-term exchange-value by way of use-value as well as to secure future exchange-value by way of obsolescence. Understood in this way, the commodity-form is given specific shape through multiple strategies of obsolescence that are dictated by economic and social considerations as opposed to purely technical requirements. The end product is at once useful, ready for exchange, and primed for future replacement. We can extend Marx's (1867/1992) original terminology and say that commodities have a *durability-value* that is analogous to use-value, in the sense that like practical utility a commodity must at some level correspond to consumer expectations about a minimal level of durability in order to facilitate the realization of exchange-value. But once these minimal requirements are satisfied the commodity may be oriented by producers in such a way as to maximize obsolescence potential in order to secure future exchange-value through commodity degradation and consumer dissatisfaction.

More generally, Feenberg (1999) argues that the particular direction of capitalist technological development may be understood as a historical tendency that preserves dominant economic and social orders by way of technological systems that may appear neutral but which in fact conceal, preserve, and extend modern forms of institutional power. According to Feenberg, although technology can either be developed to preserve social and economic power or to undermine it, the historical record suggests that it is the former tendency that prevails in modern societies, notwithstanding some successful initiatives to reform technology.

For Feenberg, the historical continuity of power in modern societies is rooted in technocratic strategies of modernization that extend and amplify existing social structures. In line with constructivist accounts, technology is understood as determined by the meanings and values that structure its development, both at the level of individual artefacts and more broadly at the level of the wider "cultural horizon," which includes general assumptions, common sense, and ideology, and forms the unquestioned background of technology development. For example, early industrial machines were designed to accommodate children, since child labour was an unquestioned and taken-for-granted assumption of everyday life at the time. Technologies are selected in line with dominant interests, even if they do not appear as such and have faded into common sense in a particular historical context.

Within this dynamic, *technological regimes* are especially important in Feenberg's account. Understood broadly as technological paradigms that include knowledges, practices, skills, and technology attributes, Feenberg argues that regimes play an important role as the destination, on the one hand, for sedimented social values and conflicts, and on the other, as the source and structure for future technology development. That is, technological regimes make invisible the social roots of some of their constituent elements by translating social decisions and outcomes into purely technical forms that appear neutral and apolitical. The resultant, seemingly pure technical paradigm forms the basis and starting point for future developments.

Feenberg introduces the notion of *technical code* to capture aspects of technological regimes that reflect significant social values and decisions. For example, in

the history of the bicycle the technical code of "safety" included smaller wheels and a seat positioned behind the front wheel, not above it as in the "speed" designs. Today, however, this social history is invisible and the bicycle is defined in purely technical and rational terms, as what the bicycle simply is.

According to Feenberg, technical codes provide one means for the conservation of social hierarchy, power, and harmful consequences in modern societies. By excluding democratic participation in technical design, modern organizations are able to translate their values and interests into technical codes that define technological systems in purely technical terms, despite their social and political character. Seemingly neutral technology provides material support and validation for the operational autonomy of modern organizations.

Conceptualized in these terms, producer-initiated obsolescence may be understood as a technical code that reflects current capitalist market dynamics and the operational autonomy of manufacturers. As part of a technological regime that forms the background of technology development today, it represents a bias away from durable, modular, and long-lasting designs and towards a plurality of obsolescence strategies. Although there is some resistance to and reform of this bias among designers, engineers, and progressive manufacturers, product obsolescence, short product life cycles, and cannibalization by means of frequent upgrades continue to function as the norm rather than the exception.

Conclusion

In summary, new media is interwoven with individualization, consumption, and collective risk in several important ways. First, within a context of detraditionalization, elective life biographies, and the increasing offloading of opportunities, risks, and responsibilities onto individuals, new media represents an information and communication platform that is well suited to the enactment and mediation of networked individualism as individuals strive to manage complex information flows and negotiate social relationships across diverse domains in Western liberal societies. Here, the affordances of new media, including high degrees of personal customization,

synchronous and asynchronous communication, and information management tools and interfaces, are appropriated by individuals in ways that are suited to personal needs and demands.

At a second level, new media use is predicated on access to and competence with new media devices that are being consumed by increasingly more people on a global scale and at higher rates of frequency and replacement than ever before. As a highly profitable commodity sector characterized by high degrees of transnational competition and high rates of economic growth, new media technology production entails complex global supply and manufacturing chains that are dependent on non-renewable natural resources and which contribute to both local and global ecological harms and risks.

Although pressure from environmental groups has resulted in some improvements across production, use, and disposal, product obsolescence and short commodity lifespans continue to characterize current production and consumption cycles. Appropriately, much of the blame has been directed at producers who are ultimately responsible for the selection of materials, the quality and safety of production processes, and the nature of hardware and software designs that are either well or poorly suited to long-term use. Where attention has been directed at consumers, it often takes the form of criticism directed at individuals who are berated for indulging in the excesses of consumerism and pleaded with to exercise restraint. However, as the above discussion has pointed out, individuals are situated within a constellation of economic, social, cultural, and technological structures that define a horizon of opportunities, constraints, and risks and which encourage some forms of lifestyle and consumption and make other forms more difficult or less likely.

In line with this recognition of diverse structures of mediation, this dissertation aims to improve our understanding of new media production and consumption by examining the interrelation of smartphone promotion, technology expertise, and consumer sociability. Taken as a whole, this dissertation seeks to examine in detail the sociocultural space between otherwise isolated producers and consumers in order to better understand contemporary practices of consumption and the mediation of

obsolescence in an age of participatory media. The next chapter further develops this focus by way of a detailed theorization of advertising and promotion, lifestyle media, and consumer tribalism and their particular contributions to these processes.

Chapter 2.

Advertising and Promotion, Lifestyle Media, and Consumer Tribalism

Introduction

Within a social and cultural context characterized by individualization, detraditionalization, and individual and collective risk, the mediation of consumption may be understood in terms of a shift from more traditional norms, guidelines, and dispositions towards increasingly more elective biographies, lifestyles, and modes of consumption. Detraditionalization does not signal the end of social structures, however, but rather their reconfiguration and increasing intertwining with information and communication flows (Lash & Urry, 1994). For the purposes of this dissertation, the orders and circulations of advertising and promotion, lifestyle media, and consumer tribalism are of particular interest as forms of mediation that are both increasingly pervasive in contemporary societies and which represent economic, social, and cultural "re-wirings" and "re-writings" of tradition with respect to consumption norms, guidelines, and tastes.

In contrast to economic accounts of advertising, promotion, and media which work with an information transmission model of communication that conceives of marketing and media as forms of communication that simply inform consumers about products and their advantage relative to alternative offerings, this dissertation adopts a perspective that understands advertising, promotion, and lifestyle media as sociocultural institutions that monitor and draw upon existing cultural categories and practices, on the one hand, and re-work, modify, and circulate new cultural categories and practices, on the other, in the service of selling commodities which are inseparably intertwined with continually shifting signs, images, and meanings.

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In a similar way, in opposition to economic accounts that conceive of people as atomistic, calculating individuals seeking to optimize personal wants, this dissertation adopts a social and cultural conception that understands consumption as a collective activity that is animated by shared enthusiasms, sociability, and the negotiation of meanings and practices. More generally, the theoretical framework elaborated in this chapter draws on existing theory and research that provides a holistic and historical account of these sociocultural dynamics and which spans multiple disciplinary approaches, including media studies, consumption studies, and sociology as well as political economy of communication, cultural studies, and marketing.

Advertising and Promotion

Advertising as Social and Cultural Institution

As Leiss, Kline, Jhally, and Botterill (2005) demonstrate, advertising strategies and practices are not fixed, but instead are adapted to historical and cultural contexts within a competitive dynamic that includes manufacturers, products, and advertising agencies. This entails a continual and ongoing surveillance of culture with an eye towards emerging trends, fads, and fashions that are analyzed via market intelligence. In addition to this ongoing response to culture, advertising may also be understood as more directly constitutive of culture, as a social institution that contributes to culture in addition to mirroring sociocultural change (Leiss et al., 2005). Understood in this way, advertising is strategic social communication that speaks on behalf of goods and services and attempts to influence culture and consumption practice.

As a central component within contemporary discourses of consumption, advertising represents the strategies of producers and advertisers as they attempt to negotiate the meanings of goods with consumers and audiences, a process that is influenced by diverse considerations and conditions, including cultural contexts and practices, historical styles and tastes, business orientations and budgets, as well as media and technology (Leiss et al., 2005). At its core, however, advertising is ultimately oriented towards the stimulation of consumption and a response to capitalist marketplace dynamics, including market creation, expansion, and competition.

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As a discourse about human-object relations, advertising is productive in multiple ways (Leiss et al., 2005). First and foremost, advertising encourages consumption and encourages individuals to act as and to think of themselves as consumers. Secondly, advertising attempts to frame what can legitimately be thought about goods and in so doing draws upon and reproduces cultural classificatory frameworks. Lastly, and as part of this framing process, advertising makes use of and circulates social representations to achieve its ends, spanning categories such as class, gender, and race.

As a rhetorical form, advertising combines information and art and employs both rational and irrational arguments, each of which is subordinated to a commercial logic and the end goal of sales growth (Wernick, 1991). As a general formula, advertising puts forward a proposition and seeks to persuade audiences that the net utility of a purchase will be higher than what is foregone by not making the purchase; that satisfaction will be greater or at least equal to the satisfaction that may be gained from other alternatives.

At a deeper level, advertising entails the symbolic coding of goods as desirable signs that have the potential to increase our symbolic gratification through their consumption, possession, and display (Wernick, 1991). By means of advertising, products are infused with cultural and psychological appeal and presented as objects of desire and as cultural symbols with social significance. Audiences are addressed in terms of their orientation to and desire for goods as well as in terms of social needs, including identity and belonging, which are both translated in terms of commodities and their consumption.

In their anthropological, structural analysis of material culture, Douglas and Isherwood (1978/1996) argue that an essential function of consumption is its capacity for sense-making and cultural categorization. In this model, goods are part of a dynamic and live information system and provide a material basis for cultural categories. Objects are invested with significance but always as elements of a system with relations across goods that together constitute a shared system of meaning without which individual goods and signs would not make sense and without which personal preferences and orientations would not be possible.

Unlike traditional societies with relatively stable systems of goods and meaning, capitalist societies are characterized by the privilege that is granted to the marketplace as a site of symbolic production and the relative instability of goods and cultural symbols which are perpetually reworked and redefined by advertising (Leiss et al., 2005). As a cultural institution, advertising contributes to and provides patterned systems of meaning that are integral to social exchange and which support diverse social processes. For example, advertising tends to emphasize both the ways in which goods can provide social unification as shared material culture as well as social differentiation through a highly structured system of goods and status. Although advertising verbalizes and images possible meanings for goods and contributes to processes of meaning exchange, and even though it may be generally successful in achieving its goals, it cannot fully control or dictate the ways in which meanings will actually be taken up, appropriated, or rejected by consumers, who are situated at the intersection of diverse social and cultural contexts, and whose cultural practices ultimately determine the ways in which commodities are used in everyday life (Leiss et al., 2005).

Advertising and Ideology

If we understand ideology in its most broad and neutral sense, as a meaningful orientation to the world and an essential aspect of collective and individual life that includes systems of symbols, values, beliefs, and norms as well as cognitive and affective maps, then advertising may be conceptualized as an institution that interfaces with and contributes to ideology in two interrelated ways (Wernick, 1991). First, advertising relies on existing ideology as a resource that forms the basis of its signification, and second, by doing so, advertising naturalizes, reproduces, and amplifies existing ideology through its circuits of circulation and ubiquitousness in everyday life. As Wernick (1991) argues, the acceptance of a particular selling message simultaneously entails the acceptance of the ideology that it relies upon.

Unlike other ideological institutions, such as education or religion, for example, advertising does not have any intrinsic interest in the actual content of the ideology that it employs and reproduces, which is continually updated to reflect the moving present (Wernick, 1991). By engaging with the values, norms, hopes, and dreams of consumers,

ideological content is invoked as an instrumental tool whose ultimate goal is to stimulate sales and consumption. Equally importantly, as a major institution for the circulation of ideological values, advertising does not simply draw on a pre-existent, "pure" culture that spans popular speech, education, or art, but instead continually re-works and re-circulates cultural categories and social representations (Wernick, 1991). Likewise, advertising also invents and contributes its own cultural expressions, novel modes of interpretation, and new images and icons.

In the typical case, advertisers draw upon widely understood cultural codes for general market products and rely upon group-specific cultural codes for niche market commodities (Wernick, 1991). Significance is constructed from existing codes which are selected by advertisers based on values expected to appeal to potential consumers. In this simple case, ideological consensus is relatively stable and passes for common sense, coded symbols are readily available, and cultural power is easy to invoke. At the same time, the potential consumer must be induced to take a leap of faith and accept what the commodity is made to mean (Wernick, 1991).

In less straightforward and more complex cases, there may be a lack of ideological consensus, common sense may be contested, and social division and conflict may be pervasive, conditions which require that advertisers exercise caution and creativity or risk offending or missing their target markets (Wernick, 1991). In this context, advertisers may attempt to manufacture a degree of ideological consensus within the fictional world of ads in order to anchor a product's identity and appeal. Reliance on a symbolic composite or collage, constructed from elements of fractured cultural codes, provides a means for establishing cultural associations for a product even if some of the constituent codes are contested on their own as a whole (Wernick, 1991).

In a similar way, advertisers may at times invent or suggest new cultural categories, especially when there is a lack of agreement about categories or when there is insufficient consensus across cognitive and affective maps (Wernick, 1991). In this case, advertisers seek to construct a middle ground, a common ideological denominator that attempts to move beyond existing incompatibilities and provides a compromise at a

suggested point of overlap that reduces inconsistency and allows simultaneous readings from otherwise irreconcilable positions.

The Bias of Advertising

Taken as a whole, the bias of advertising may be understood in terms of the selective ideological inclusions, exclusions, and suggested compromises that characterize its history across diverse social contexts and time periods (Wernick, 1991). Generally speaking, there is a deep bias towards conventional and widely diffused symbols and a preference for positive themes, humour, and life as opposed to negative themes, tragedy, or death. There is also a deep bias towards a consumerist orientation that naturalizes consumption as an essential, important, and necessary aspect of everyday life. The negative aspects of capitalism are rarely visible, and when they are present they are typically redefined via consumption, whereby commodities are positioned as counterweights to negative states and conditions and keys to unlock happiness and well-being (Wernick, 1991).

In order to be successful, however, advertising must ultimately please its audiences and it is necessary to acknowledge the fact that at some level advertisers need to be sensitive to consumer tastes, demands, and perceptions (Wernick, 1991). Although advertisers tend to characterize their profession and practice via a popular rhetoric of diversity and sensitivity, the historical record demonstrates that there is much less diversity and sensitivity than is often claimed. Much of media and advertising today is targeted at high-profit groups such as children, youth, professionals, and cultural elites. And despite a persistent rhetoric of diversity, there is a disregard for emerging values at odds with consumerism, persistent use of gender stereotypes, and a general omission of minorities (Wernick, 1991). In sum, while efforts to please audiences may be acknowledged, advertisers ultimately retain final control over inclusions and exclusions that over time exhibit systemic patterns and biases.

Promotional Intertextuality

Ads provide a glimpse into the attempts of producers and marketers to infuse commodities with social significance and cultural appeal, but it is important to note that individual ads never stand alone but instead draw symbolic resources from other ads, past and present, as well as often are parts of larger marketing campaigns that include multiple ads alongside other marketing strategies (Wernick, 1991). That is, ads are often grouped together as part of a marketing campaign that may span diverse media and which may construct product identity over time, where future campaigns may build on past campaigns and previous cultural work.

As Wernick (1991) argues, this promotional intertextuality across ads became a central characteristic of advertising in the 1980s when increasing use of references to other ads and imagery became prevalent. Equally importantly, this intertextuality is not limited to ads, but includes commodities as well. The psycho-ideological associations constructed by ads merge into the commodity, which acts as a reference to the ad complex that envelops it. Thus, the commodity acts as both a vehicle for its own self-promotion and as a link in a dense and complex promotional chain of interconnected significations (Wernick, 1991).

More generally, we can understand the historical emergence of a promotional system alongside capitalist industrialization as a systematization and rationalization of promotional practice, where symbolic manufacture and advertising became fused together and where image-making became a central and integrated aspect of production (Wernick, 1991). In this system, the transfer of cultural associations to products is pursued both propagandistically via advertising as well materially via design and packaging. The net effect of this historical development is the emergence of a new kind of good that is indissolubly linked to promotion, which transforms that which it aims to sell (Wernick, 1991). Today, many objects – including all consumer electronics – have never pre-existed industrial production and their accepted meanings have always existed in relation to the promotional system and manufactured meaning that envelops their existence.

Promotional Goods

Wernick (1991) identifies a special category of commodities that may be produced by manufacturers primarily for the purpose of contributing promotional value to the manufacturer and its brand; that is, in order to advertise and promote other commodities. For example, luxury or exhibit items with limited availability showcase a brand's attributes and promote all goods associated with the brand. Although the promotional good is a commodity, its exchange-value is not realized directly via market exchange, but instead takes an indirect form by way of the aggregate amplification of the exchange-values of all other commodities whose value it enhances by way of association and its function as a promotional good (Wernick, 1991).

At a more general level, the design of commodities may be understood as part of and continuous with promotion, spanning aspects such as substance, shape, and ornamentation, whereby promotion forms an integral dimension of design and pre-production considerations rather than as a secondary process that follows production (Wernick, 1991). For example, the positioning of a commodity as "modern" may entail minimal use of ornamentation, a design characterized by smooth surfaces and lines, and the use of cool shades and colours. This design, shape, and form may then be amplified by advertising that selectively draws on cultural resources and attempts to further establish the character and identity of the commodity.

Once a commodity has been promotionally designed, branded, and signified in an attempt to both establish its meaning and to bestow it with an aura, and the process has been sufficiently successful, the commodity is able to advertise itself via use, display, and circulation in public life (Wernick, 1991). That is, in addition to traditional forms of promotion, commodity possession, circulation, and consumption provide further opportunities for promotion for both the commodity itself and its owner. For example, the commodity may function as a marker of social and cultural identity for the owner within anonymous public space and be employed as a tool for self-promotion and social status.

Artificial Semiosis

Reflecting on contemporary commodity imaging, or the industrial manufacture of goods and meaning, Wernick (1991) argues that the process spans production, distribution, and exchange and that each site may be understood with respect to its contribution to the promotional-sign, on the one hand, and to the commodity-sign, on the other. In this model, the commodity is conceptualized as a composite entity that fuses the commodity-sign and promotional-sign. In circulation, the commodity functions as a symbolic good but also as an object to be sold and as a bearer of a promotional message; it advertises itself as well as other products that are linked to it via style, image, and brand.

According to Wernick (1991), industrial production and promotion form an integrated system that entails the instrumentalization and rationalization of semiotics and aesthetics and which is driven by precise calculation about consumer appeal, a historical development that is distinct from the symbolic aspect of goods or their promotion, both of which precede this systemic development. Within a context of loosening aesthetic and cultural traditionalism, expression via objects is realized by means of artificial semiosis and channelled via a commercial logic that is completely oriented toward target markets and to whatever is currently valued and desired (within the parameters of commodity consumption).

There are multiple effects that result from this historical development. Most notably for the purposes of this dissertation, there is heightened appreciation of and attention to fashion and the shifting tastes of target markets. Consequently, there is an acceleration of style turnover as producers attempt to simultaneously anticipate, lead, and stay in step with consumers. In addition, popular signifiers such as "modern" and "traditional" are manufactured like any other with no necessary links to organic processes. In each case, product symbolism is rationalized through the promotionalization of production, distribution, and circulation (Wernick, 1991).

Promotional Culture

Beyond the promotional integration within and across commodities, Wernick (1991) argues that contemporary culture more generally has been gradually transformed by a historical process of integration and deepening of links among advertising, promotion, and commercial media. More specifically, the promotional intertext of commodities may be situated within a wider promotional complex that includes the transformation into advertising of produced culture. This economization of culture represents a symbiosis of cultural production and commodity promotion and serves as a paradigm for commercial media today. The system of mutual dependency operates at both a functional and financial level: ad revenue pays for media production and distribution; in turn, media content is tailored to sell audiences to advertisers. The argument can be further extended, however, by the observation that the media product itself is an ad in the sense that it advertises itself, acts as a magnet for audiences, and includes actual ads for commodities (Wernick, 1991). The promotional flow thus includes the media product itself as an imaged commodity, which promotes itself as well as ads for other commodities, which in turn promote their commodities, which are themselves imaged as self-promoting commodity-signs.

This promotional circuit and the sale of the audience commodity entails an organic relation between advertising and media content, which is tailored to the tone, ideology, and style of the target audience (Wernick, 1991). In general, media content tone is upbeat, favourable to consumerism, and adheres to conventional values. Mass media operates within a general consensus orientation, whereas niche media is tailored to the cultural characteristics and values of the target market. With respect to style, there is an integration across media and advertising content, with each drawing stylistic cues from the other. For example, ads within action-based entertainment media often draw on action genre production values. The degree of symbiosis between media content and advertising varies across media products and is often greatest when media production is most dependent on advertising revenue (Wernick, 1991).

The promotional complex of culture is also characterized by diverse forms of promotion other than ads and includes brand sponsorship, product placement, and lifestyle promotion (Wernick, 1991). For example, commodity producers may sponsor

cultural events, products may be integrated within movies, and television shows may include fictional settings for lifestyle display. Taken as a whole, promotional culture may be understood as a vast promotional vehicle, a functionally interdependent complex that spans all forms of commercial media and facilitates the circulation of promotional discourse at multiple levels (Wernick, 1991). It includes the interrelation and intertextuality of first-order commodity promotion along with second-order promotion of media and cultural content in the service of both itself and as a basis for first-order promotion.

This circuit is an interconnected whole that includes promotion within each media form and across media forms such that each point of promotion is connected to many others (Wernick, 1991). Media content draws audiences to ads, self-promotes itself, promotes its names and brands, promotes commercial cultural content as a whole, and includes symbolic resources that cross content and advertising. Given these dense and complex linkages, it is often difficult to determine what is promoting what, a promotional landscape that Wernick refers to as a "hall of mirrors", where each promotional message refers to a commodity that is in turn a site of promotion for itself, for other commodities, and for consumption more generally. As an integrated whole, the promotional circuit operates with a meta-message about what we lack in terms of goods, experiences, and ways of being.

From the perspective of producers and marketers, advertising and promotion provide an invaluable tool for the integration of commodities into social and cultural processes and for extending and amplifying social dynamics that are conducive to market growth and expansion. As a form of mediation of both consumption and product obsolescence, advertising and promotion are important sites of analysis for the purposes of this dissertation, which aims to examine the nature of this mediation and the strategies undertaken by technology manufacturers in emerging online contexts.

Lifestyle Media and Expertise

Lifestyle

The dissertation will be complemented by a parallel examination of online lifestyle media, which is at the same time promotionally intertwined with manufacturer advertising and semi-independent from technology producers. As an increasingly pervasive form of social and cultural mediation, lifestyle media occupies the space between producers and consumers, offering forms of expertise and judgment about commodities and consumption, on the one hand, and amplifying, undermining, and circulating new meanings for goods, on the other. As such, it provides a valuable site of research for an examination of contemporary forms of consumption and the ways in which product obsolescence is mediated online.

As Bell and Hollows (2005) point out, the concept of lifestyle has been used in diverse ways across diverse contexts. Its more traditional application has provided a means for discussing the ways of life of specific social groups, whereas more recent usage is less tied to fixed social groups and more individualistic, typically understood as an active process centred around individual freedom and choice. It is a concept that is also increasingly interwoven with consumerism today by way of an emphasis on personal style achieved primarily via consumption that draws together notions of taste, status, and income.

To the extent that identity today is increasingly a self-directed project where everyone must to some extent participate, lifestyle provides a basis and a resource for this identity work in terms of both consumer products and services as well as practices of self-knowledge and self-improvement (Bell & Hollows, 2005). At their core, self-directed life biographies are risk-laden, "tightrope" biographies (Beck & Beck-Gernsheim, 2002) that can break down and quickly shift at any moment, such that lifestyle may also be characterized in terms of anxiety and ongoing concern and evaluation of past decisions and present options. The anxiety of making a poor choice and of being seen as living or consuming poorly also foregrounds the public nature of contemporary

consumption and the concomitant need for ongoing reassurance and security (Bell & Hollows, 2006).

Although lifestyle is often posited as a relatively new phenomena that is said to emerge in the post-War context with either rising mass consumption or post-Fordist production, Bell and Hollows (2006) argue that as a concept and set of practices, lifestyle has a much longer history than is often acknowledged and may be traced back to self-improvement since classical antiquity. It also includes the history of manners since the middle ages and the publication of instruction booklets and guides as well as women's magazines focused on taste and style. In a similar way, advertising and promotion have been educating and shaping the "consuming personality" since the earliest days of industrialization (Wernick, 1991).

Lifestyle Media

Within the contemporary context of post-Fordism, characterized by flexible and specialized production, fine-grained stylistic differences, and the profusion of goods and niche markets, lifestyle media provides a basis for making lifestyles recognizable and legible (Bell & Hollows, 2006). By foregrounding the communicative dimension of commodities, lifestyle media circulates recognizable lifestyle practices and functions as a source of legitimization by offering consumers a means of writing and reading identity and status via goods and their consumption. With respect to the historical process of detraditionalization, lifestyle media may be understood as a means of "re-writing" and "over-writing" tradition by providing rules for public conduct, suggesting guidelines for consumption, and educating consumers about the judgment of taste across diverse domains (Bell & Hollows, 2005).

With the proliferation of both mass produced and specialized goods, detraditionalization, and the continued cultural pervasiveness of consumption, lifestyle media has grown and expanded rapidly in recent decades as media producers, publishers, and online content providers seek to inform, entertain, and profit from consumption advice and expertise (Bell & Hollows, 2005). Offering guidance about what and how to consume across products, services, and experiences, contemporary lifestyle

media includes television and radio shows, DVDs and online videos, books and magazines, websites, advertising and promotional materials, as well as subcultural micro-media and live performances by lifestyle experts (Bell & Hollows, 2005).

In its entirety, lifestyle media circulates and promotes ideas about taste and consumption and spans diverse domains and genres, including food and drink, style and fashion, technology, home decoration, travel, and self-improvement. It also includes many hybrid media forms such as reality television, celebrity media, and infomercials and increasingly involves the blurring of information and entertainment as part of a wider media development marked by the growth of infotainment and edutainment (Bell & Hollows, 2005).

Lifestyle, Social Class, and Cultural Capital

Although some sociologists (cf. Beck & Beck-Gernsheim, 2002) question the relevance of class as an index of lifestyle and consumption within societies characterized by deepening processes of individualization and detraditionalization, Bell and Hollows (2005) argue that class remains an important consideration within consumer cultures that promote lifestyle choice and play, since it both makes possible and constrains the nature of this activity, via income, for example, as well as continues to be interwoven with identity, the construction of which increasingly takes place at the intersection of class and lifestyle. Understood in this way, lifestyle consumption is a form of transformation and movement within the social space of class relations (Bell & Hollows, 2006). Detraditionalization does not mark the end of class but instead makes possible a reformulation and resignification of identities by way of lifestyle and consumption.

Theorizations of lifestyle and social class may be grouped into two models that either emphasize class emulation or class antagonism and differentiation (Bell & Hollows, 2006). Although both models will be outlined below and contribute valuable insights into the relation between lifestyle and social class, the latter will be given greater attention and emphasis since it provides helpful concepts for understanding the relation between lifestyle media expertise and class in contemporary consumer societies.

Class emulation theories include McCracken's (1988) analysis of aristocratic English society and the emergence of status competition through goods among English noblemen, a process that marked a shift away from patina and long-term ownership towards novelty, short-term gain, and the emergence of fashion and its imitation, which stimulated innovation and shifts to new tastes and styles. It also includes the history of more popular forms of consumption examined by McKendrick, Plumb, and Brewer (1982), who trace the birth of consumer society to 18th century England where industrialization, growing demand, and increasing class mobility provided a basis for both the emergence of new worlds of goods as well as their use as markers of social standing, a process characterized by both imitation and differentiation. In a similar way, Simmel (1904/1957) argues that goods became an important marker of social position within a context of European urbanization that threatened traditional social structures within increasingly anonymous city social spaces. In the United States, Veblen's (1899/1994) analysis of imitation by ascending, newly wealthy classes demonstrated the ways in which aristocratic modes of consumption were emulated by means of visible ostentation and conspicuous leisure.

Although the above theories of class emulation also include considerations of differentiation and class antagonism, the relation between lifestyle and social differentiation has been most thoroughly examined by Pierre Bourdieu (1984; 1994) in his analysis of 1960s French society. In Bourdieu's model, lifestyle choice and consumption is structured by economic capital, which includes money and property, and cultural capital, which includes dispositions, knowledges, and skills. More specifically, cultural capital includes three forms: implicit skills, knowledges, and dispositions; cultural objects; and formal degrees and diplomas.

Bourdieu suggests that cultural capital is developed in various ways, but primarily involves cultivation in the home, through peers, and via institutionalized education and symbolic production. According to Bourdieu, it is embodied as a particular way of feeling, thinking, and acting and forms a key element of a subject's habitus, a generative social-psychological structure that classifies the world, typifies particular situations, and directs action. Cultural capital, it is suggested, is not an explicit class marker, but is rather the

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basis for attraction, repulsion, and avoidance across objects, practices, and other people who may or may not share similar dispositions.

With respect to consumption, Bourdieu argues that the habitus organizes one's classification of goods and activities and is the basis for desire and disgust. The habitus organizes what is valued and structures tastes across many categories of goods and activities, leading to a particular set of consumption patterns and a specific style of life. For Bourdieu, the habitus is the basis for the enactment of cultural capital in the field of consumption and is the means for conversion of economic and cultural capital into particular consumption tastes and practices. The space of lifestyles is thus structured via habitus which itself is structured by objective social conditions. In turn, lifestyles are an expression of and reproduce the habitus and the existing social order.

According to Bourdieu, consumption is stratified by class and capital composition on the basis of relative tastes and preferences that seem natural to all individuals that occupy a given class position. For example, with respect to food, the working class of 1960s France, characterized by low economic and cultural capital, approached consumption as a direct response to scarcity and favoured cheap cuts of meat served in large portions to sustain the energy requirements of manual labour. In contrast, French upper classes, characterized by high economic and cultural capital, approached consumption in abstract and formal ways that reflected their certainty of obtaining their daily necessities. Food preparation and style was privileged by the upper classes and individuals generally preferred food that was "light" and "refined".

In Bourdieu's model, there is thus a mapping between social space and the space of lifestyles and although all class fractions strive to legitimate their specific tastes and dispositions as the legitimate dispositions within society, only groups with sufficiently high cultural capital possess the necessary symbolic capital required for legitimation. As a result, class fractions with low cultural capital are positioned by other classes as vulgar and have their tastes illegitimated.

Although Bourdieu's original research was based on the lifestyles and class fractions of 1960s France, a mapping of a specific time and place, Bell and Hollows (2006) point out that Bourdieu's theory may be used to examine social and cultural

change. Given that neither lifestyles nor social positions are static, it is necessary to account for the movement of both goods and practices that may result from class emulation, the introduction of new commodities, or innovations in the nature of consumption. As Bell and Hollows (2006) argue, Bourdieu offers a means of tracking these changes by way of his theorization of class fractions and the opportunities afforded to some fractions by way of cultural capital. In Bourdieu's model of society, different classes have different opportunities to capitalize on their unique assets at a particular historical time and place.

For example, by way of expanding education and increased availability of white-collar jobs, Bourdieu traces the emergence of a new middle class in 1960s France whose disposition was oriented towards hedonistic pleasure in opposition to the restraint and sobriety of the established upper classes. Members of this new class included marketing and media professionals with high levels of cultural and symbolic capital who were well positioned to legitimate their class-specific taste as the legitimate taste within society. Through advice, modelling, and expertise, lifestyle was transformed into an art form with an emphasis on enjoyable consumption.

Cultural Intermediaries

Bourdieu (1984) introduces the term *cultural intermediaries* to refer to individuals engaged in forms of work centered around "presentation and representation" which have grown in size and influence since the middle of the 20th century. According to Bourdieu:

> The new petite bourgeoisie comes into its own in all the occupations involving presentation and representation (sales, marketing, advertising, public relations, fashion, decoration and so forth) and in all the institutions providing symbolic goods and services ... and in cultural production and organization which have expanded considerably in recent years. (1984, p. 359)

Most importantly for the purposes of this dissertation, cultural intermediaries include workers in the media, arts, and entertainment industries as well as in advertising and marketing, occupations that are central to the workings of consumer society. As Negus (2002) points out, the notion of cultural intermediaries emphasizes the mediation of production and consumption by certain workers and professions that are continually

engaged in establishing a point of connection between processes of production and consumption. This mediation includes advertising and promotion, which give cultural form to commodities, as well as taste-making practices that include the circulation of skills, knowledges, and dispositions as well as evaluations of goods and consumption practices.

By way of their position in social and occupational space, embodying high levels of cultural and symbolic capital, cultural intermediaries are well positioned to capitalize on an emphasis of lifestyle through the setting of standards for consumption (Bell & Hollows, 2005). In their role as taste-makers, cultural intermediaries are able to produce distinction for themselves by making judgements about taste and legitimating these judgments as good taste. Distinction also accrues to consumers who follow their lead and successfully emulate prescribed forms of consumption practice.

Expertise and Democratization

In order to realize distinction, cultural intermediaries must publicly express their preferences and judgments about taste and in so doing provide a form of education about consumption and democratize the very skills and knowledges that form the basis of their expertise (Bell & Hollows, 2006). This side-effect of the distinction process provides the necessary conditions for imitation by consumers and lies at the heart of a tension between distinction and the democratization of taste. With increasing emulation and the transformation of distinguished ways of consuming into common knowledge, taste-makers must eventually abandon past goods and practices and move on to new and novel forms of consumption.

Central to this dynamic, lifestyle media provide a means for the circulation and distribution of consumption expertise while simultaneously contributing to lifestyle similarity and the devaluation of carefully cultivated cultural capital (Bell & Hollows, 2005). While providing a form of education for audiences in matters of good taste, lifestyle media is continually propelled by a restless search for novelty across aspects of life that can be rendered in terms of consumption and lifestyle as an attempt to escape past tastes and practices that eventually become common forms of consumption.

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Although democratization of skills and knowledges characterizes this tension, the realization of expertise is more nuanced than simple information transfer (Bell & Hollows, 2005). Despite an ideology of expertise that maintains that good taste can be acquired through sustained effort and that anyone can be an expert by working towards expertise, relative to cultural intermediaries who exhibit effortless taste and disposition, non-expert appropriation is always more fragile and precarious. While it may be relatively easy to acquire goods, refined practices and modes of consumption require much more time, effort, and cultivation.

Goods and Practices

In contemporary consumer societies, characterized by a massive overproduction of commodity-signs and the general availability of most goods to the majority of the population, Holt (2000) argues that it becomes increasingly difficult for social groups to coherently assimilate goods or to infer status from particular objects. Given these conditions, Holt suggests that there is a shift away from objects themselves as a basis for distinction towards the nature of their consumption, or in Bourdieu's terms, there is a shift from objectified to embodied forms of cultural capital. For Holt, this represents a historical change from the past, characterized by practices of knowing about goods and the consumption of appropriate goods, to contemporary practices of consuming in rare and distinguished ways. With a ready abundance of goods that can serve as the basis for easy emulation, distinction takes the form of the nature of consumption of common goods.

Although Holt (2000) draws attention to a historical shift in the nature of distinction and consumption, a general abundance and availability of goods does not imply that there are no longer sets of goods that are only available to a small minority of the population that can afford them. Instead, it is perhaps more accurate to assume that the system of goods as a whole has simply shifted such that past luxury items and practices are today common, and a different set of goods and practices have become exclusive and difficult to obtain. Reflecting on the prevalence of materialism in American culture, Holt suggests that individuals with high economic capital continue to pursue the newest fashions, latest technologies, and most luxurious products and services,

whereas individuals with low economic capital (the majority of the population) experience material deprivation as an intense lack that structures taste around the attainment of glimpses of elite luxuries and comforts.

Tribalism, Sociability, and Enthusiasm

Consumption and Popular Culture

Even though consumption may be structured by economic and cultural capital and may be interwoven with status competition, expertise, and the legitimation of taste, it cannot be wholly captured or explained by these processes. The model and logic of class differentiation, competition, and reproduction, while drawing attention to the continuity of pervasive economic and social dynamics, has difficulty accounting for contemporary lifestyles characterized by more diverse and heterogeneous memberships – spanning differences across age, income, and occupation, for example – and the shared enthusiasms and consumption practices that provide the basis for emergent forms of sociability in contemporary consumer societies.

In line with more positive accounts of popular culture, Bennett (1999) suggests that lifestyles within the context of neo-tribes (Maffesoli, 1996) may be understood as a form of social and cultural emancipation that, in contrast to popular culture pessimism, may represent expanding avenues for individual expression and participation in culture through the appropriation of a wide range of commodities and activities. In this way, consumption may offer new ways of negotiating social and cultural structures as individuals engage with a diversity of people, goods, and practices. For example, the lifestyle of the New Age Traveller brings together individuals from a range of social backgrounds and classes who share an identification with nomadism and its concomitant forms of sociability. According to Bennett (1999), lifestyles mediated by neo-tribes may be understood as a form of increased access to a wide range of cultural resources and affiliations for the development of everyday culture.

Neo-Tribalism

Maffesoli (1996) introduces the concept of *neo-tribe* as a metaphor for a type of sociability that he believes increasingly characterizes contemporary societies. In line with other theorists of detraditionalization, Maffesoli argues that the modern group, as a fixed and stable entity, has decreased in importance for individuals and increasingly becomes superseded by a diversity of groupings and affect-based associations. These dynamic and fluid groupings, moreover, provide sites for individuals to enact and live out tribe-specific roles and identifications as they move from tribe to tribe.

According to Maffesoli, the concept of neo-tribe is intended to capture social phenomena typically overlooked and under-appreciated within social theory. More specifically, it aims to account for the sociability that characterizes everyday life in a multitude of diverse settings, ranging from the local neighbourhood and coffee shop to online forms of social interaction that rely on networked forms of communication fostered by new media. For Maffesoli, tribalism springs forth from this sociability, which is an end in itself: individuals desire to be with others of like mind and feeling.

Maffesoli adopts the metaphor of the tribe to foreground the emotional and ritualistic aspects of this sociability. According to Maffesoli, tribes are emotional communities that provide individuals with an exit from the self and immersion in the social. The criteria for examining neo-tribes is thus one of atmosphere and ambiance, that is, of the quality of the social exchanges that it makes possible. Neo-tribes, for Maffesoli, provide a social framework for the expression of passion and for the sharing of beliefs and are one means for individuals to seek others who feel and think in similar ways. Ongoing social interaction assures solidarity, provides a basis for representations, and enables the exchange of feelings and beliefs. In a similar way, tribe rituals remind the community that it is whole and provide comfort and assurance to tribe members.

Given that neo-tribes are characterized by Maffesoli as emotional communities, they may be understood as ephemeral and distinguished by a dynamic composition, in contrast to more traditional and fixed social institutions alongside which they co-exist. For Maffesoli, the concept of neo-tribe is intended to capture the social nature of sentiment and account for the shared expression of passion among others. Neo-tribes

are characterized by Maffesoli as a Dionysian form: intoxicating, instinctual, and life-affirming – an escape from the self and an immersion in shared pleasures and tastes.

Consumer Tribes

According to Cova, Kozinets, and Shankar (2007), commercially manufactured products, brands, and experiences may be understood as cultural resources that are circulated via markets and which provide one basis for tribal relationships and communal embeddedness. Consumers engage with and appropriate available commercial identities as important aspects of themselves and their collectivities and use these identities as a means of relating to themselves, to others, and to the world. In this conception, consumer tribes are understood as a form of lifestyle identification that provide individuals with social spaces for the channelling of desires, passions, and enthusiasms.

Consumer tribes are ephemeral, unstable, and affectual, held together by sociability and rituals centred around cult objects which provide a basis for attraction and the negotiation of meanings and experiences (Cova & Cova, 2002). Like neo-tribes more generally, consumer tribe membership is understood to be continually in flux. It takes the form of symbolic and ritual expressions which provide a foundation for non-exclusive tribal identity as individuals socialize across multiple tribes and continue to participate in modern institutions (Maffesoli, 1996). Individuals engage with roles that are specific to each tribe, which makes available tribal "masks" and opportunities for status that are also tribe-specific. Thus, as individuals move from tribe to tribe, their position in social space changes dynamically and is always relative to the particular context of each tribe.

As micro-social cohorts, consumer tribes provide a locale for emotional bonding and a shared culture which includes internal complexes of symbols and meanings that are constructed, negotiated, and revised via collective experiences and communicative practices (Cova & Cova, 2002). Consequently, tribes may be permeated by conflict and contestation over meanings, practices, and forms of consumption (Cova et al., 2007). Although consumer tribes may exist unnoticed by mainstream society, they are nonetheless intertwined with mainstream society in ways that are specific to each tribe.

For example, the re-appropriation of Soviet era cameras by the Lomo tribe is characterized by shared admiration and rituals that are common only to the tribe. Even though the tribe is relatively invisible to mainstream society, this secrecy and invisibility contributes to the tribe's identity (Cova & Cova, 2002).

Echoing Beck and Beck-Gernsheim (2002) with respect to detraditionalization, cultural democratization, and emergent forms of sociability, Cova and Cova (2002) argue that contemporary social and cultural life is not marked by the disappearance of social constraints, but rather involves the ongoing establishment and re-establishment of forms of social life and communal embeddedness. In this ongoing process, objects of consumption provide one means of establishing social links and may be understood in terms of their *link-value*, that is, their capacity for facilitating sociability and the sharing of material culture. Understood in this way, commodities are not simply markers of status or social group membership, but can also form the basis for sociability and shared enthusiasms and experiences.

As Cova and Cova (2002) point out, consumer tribes are simultaneously primary and secondary group formations characterized by both bonds of shared experience as well as the valorization of shared emotions. As a collective actor, consumer tribes may engage with mainstream society and other collective actors and in the process may stimulate internal or external change. For example, the social antagonism between a tribe of Hummer sport utility vehicle owners and their critics may lead to a re-definition of tribal meanings and a strengthening of justifications of ownership by members (Luedicke & Giesler, 2007).

Tribal Agency

More generally, tribal agency may be understood in terms of the range of identities, practices, rituals, and meanings that that are constructed, negotiated, and revised by tribes as members engage with commercially produced material culture (Cova et al., 2007). Consumer tribes may also re-script roles and devise novel modes of differentiation as they absorb, extend, and resist pre-packaged meanings and experiences. As Cova et al. (2007) argue, consumer tribes rarely consume products

without simultaneously also adding to them, grappling with them, and altering them in the process.

If we understand consumers as intelligent agents who are not naive about the commercial world and who understand the "game" and the strategies of producers, then manipulation may be understood as both a spectrum and a two-way relation between producers and consumers (Cova et al., 2007). On the one hand, consumers will sometimes be truly manipulated and misled. But some of the time they will also accept only a partial manipulation and negotiate its degree and extent. On the other hand, consumers will at times attempt to mislead producers and may try to manipulate their manipulations. Equally importantly, as Cova et al. (2007) point out, much consumer resistance today, when it does occur, is often playful, hollow, and lacking in real animosity. Struggles are often less about ideologies of resistance against a system, and more often about liberation and freedom of movement within a commercially saturated culture.

Cova et al. (2007) propose two axes along which consumer tribes may be situated in terms of their relation to producers. The appropriation axis provides a gauge of the nature and degree of appropriation of commercially produced goods. On one end of the axis, where there is minimal appropriation, the tribe acts as a *double-agent*: it enjoys its position as the target subject of producers and distributes market objects and meanings relatively faithfully. On the other end of the spectrum, where there is maximal appropriation, the tribe acts as a *plunderer*: it actively plays with and shapes market objects and meanings with little regard for producer claims to rights of ownership or control (which at times may lead to legal action by producers).

Secondly, the market building axis provides a means of gauging the extent to which tribes engage in market development activities. On one end of the spectrum, the tribe acts as an *activator* of market norms and meanings, which are generally respected as tribe members operate within the market and accept their role and identity as consumers. On the other end of the axis, the tribe takes on the role of *entrepreneur* by actively entering and expanding the market as a creator of economic and cultural value and may work alongside or in competition with existing producers.

Based on existing research and case studies, Cova et al. (2007) suggest that relative to offline tribes, online consumer tribes appear to be both more active, social, and communitarian as well as more militant and resistant. Shared passions are often translated through collective activities into learning and intelligence and this collective expertise at times forms the basis for greater legitimacy with producers, whom online tribes may try to influence. More generally, Cova et al. (2007) argue that the affordances of new media provide tribes with a platform to extend and amplify their expertise in ways that require producers to take account of and adapt to new forms of collective consumer intelligence.

Structure and Agency

At their extreme, theories of consumption mirror the dichotomy between more rigid formulations within political economy of communication approaches, on the one hand, and some of the more excessively celebratory accounts of audience agency within cultural studies. Within this polarity, cultural production and reception is either entirely engulfed by control and manipulation or set completely free by audiences who resist and appropriate commercially produced culture. In a similar way, theories of consumption that focus on the production of commodities, advertising, and promotion tend to accentuate the power and control of producers, whereas approaches that take consumers as their starting point, whether as individuals or members of consumer tribes or subcultures, tend to emphasize the power and agency of consumers in negotiating the meanings of goods and the influence of the market.

The approach undertaken for this dissertation strives to avoid both extremes of this dichotomy by accounting simultaneously for the unequal distribution of power among producers and consumers, acknowledging the pervasiveness and influence of advertising and promotion as a cultural institution, while at the same time trying to account for cultural processes and practices that are beyond the full control of producers, including the activities of cultural intermediaries and consumers themselves, who may accept, give shape to, or resist market power as collective actors. Equally importantly, the approach undertaken for this dissertation understands consumption as a lived experience that is always situated in a particular social and cultural context.

Although actors are understood to be unequally situated in terms of economic, political, and cultural resources, the actual strategies and tactics employed will always be specific to a particular time and place, and the struggles, negotiations, and outcomes – while they may be biased in favour of some actors – cannot be decided by way of theory but rather require empirical investigation.

In addition, the relationship between producers and consumers is not static but has a history that has given shape to both how producers approach and attempt to influence consumers and how consumers respond to, engage with, and resist producer strategies. For example, as Leiss et al. (2005) demonstrate, the practices and persuasions of advertising have always been adapted to particular historical settings and have always needed to account for the specificity of cultural sentiments and audience literacies. As a result, much advertising at the turn of the 20th century operates with a simple, informative, and educational frame, whereas contemporary ads are generally more complex, ironic, and ambiguous as advertisers attempt to create new forms of engagement for increasingly disinterested consumers.

In a similar way, marketers today are developing new approaches that better take into account and exploit the tribal character of consumption. For example, as Mitchell and Imrie (2011) propose, customer loyalty may be understood in terms of the quality of affective bonds that tribes develop with products or brands. A deepening of these bonds will confer long-term advantage to companies in terms of both future revenue and the exclusion of competitors who will have difficulty replicating a similar bond with the tribe. Loyalty is thus reconceptualized as a collective notion that is less about repeat individual purchases and more about bonding between a tribe and a company. In this context, the focus of marketing shifts towards establishing an emotional connection with the tribe by means of supporting the sociability and shared passions that are integral to tribe existence. The goal of producers is to become tribe members in order to partake in the emotional bonds that characterize social interaction and group activity. Rather than direct advertising of products and services, the producer takes on a more indirect role, espousing tribal values and passions and supporting group interactions.

With respect to structure and agency, these historical considerations and developments suggest the need to take account of producers and consumers in new ways and to include an expanding range of producer and consumer activities in the analysis. With the increasing popularity of social media and online spaces being provided by companies to encourage sociability centred around products, data mining becomes an important resource for marketing that may be innocuously used to support existing consumption practices, or conversely may provide the basis for strategies that attempt to channel relatively organic forms of culture and consumption in particular ways. In sum, in addition to more traditional promotional activities, new forms of interaction and engagement between producers and consumers need to be considered since they constitute an evolving terrain for the operation and potential contestation of power in the sphere of consumption.

Conclusion

This chapter has considered in detail some of the more pervasive economic, social, and communication structures that contribute to the "re-wiring" and "re-writing" of tradition and consumption in contemporary societies. Understood within the context of long-term historical processes of detraditionalization and individualization, contemporary consumption norms, guidelines, and tastes today are less tied to the edicts and customs that historically have regulated consumption in more traditional societies. As this chapter has illustrated, advertising and promotion, lifestyle expertise, and consumer tribalism represent important sites and institutions in contemporary consumer societies that strive to define and shape both the nature of goods and their associated practices of consumption.

In contradistinction to information transmission models of advertising and media, which conceive of promotion primarily as a tool to inform and educate consumers about new products, this dissertation has adopted a perspective that understands advertising and promotion as a sociocultural institution that is economically driven towards the surveillance of culture as a prerequisite and means of engaging with, re-working, and circulating ever-changing and innovative cultural categories and practices that are oriented to the sale and resale of commodities. The resulting dense promotional system

spans advertising, product design, and commercial media, a complex where goods, texts, and people promote themselves as well as all of the other commodities and brands with which they are associated.

Beyond its contribution to promotional culture, lifestyle media's role has been considered with respect to consumption expertise and the shifting contours of social class and cultural capital within a context of detraditionalization and increasing investment in lifestyle and consumption. As cultural intermediaries who mediate the space between production and consumption, lifestyle experts today have risen in prominence as option-burdened individuals seek guidance and assurance in rapidly shifting cultural, informational, and commodity environments. On the one hand, lifestyle experts democratize knowledge through the circulation of skills, practices, and assessments that function as guidelines for consumption and emergent norms for everyday life. On the other hand, lifestyle experts lend legitimacy to some tastes at the expense of others and perpetually innovate forms of distinction rooted in consumption as a necessary means of social self-reproduction.

The cultural, social, and economic structures of promotion and lifestyle have been counterposed against theories and research on the popular culture of consumption that foreground the affective and social aspects of consumption and the agency that consumers enact in their appropriation of mass produced commodities. Particular attention has been given to neo-tribal theories of consumption and the collective sentiments, rituals, and meaning-making practices of consumers engaged with a highly commercialized, mediatized, and promotionally-saturated cultural environment. Although consumer tribalism draws our attention to the cultural practices of individuals and collectivities and their capacity for agency, it is argued that this agency must always be understood in relation to the structures that define a horizon of opportunities and constraints for actors and which often bias cultural, social, and economic activity in ways that support and extend existing political orders.

The following chapter revisits this tension and explores it in greater depth through a detailed consideration of hermeneutic praxis and the ways in which products are made meaningful by people in everyday life in relation to others within specific cultural, spatial,

and temporal contexts. As was the case in this chapter, this agency is situated in relation to media culture and the activities of producers, with an emphasis on the ways in which products are associated with texts, facts, and other artefacts in order to give them form and to facilitate consumer engagement and appropriation. This discussion is then used as a basis to elaborate in greater depth the contours and interrelations of advertising and promotion, lifestyle media, and consumer tribalism in contemporary consumer societies. The chapter also includes a detailed summary of the dissertation research questions, which are presented in the final section as part of the dissertation's methodology.

Chapter 3.

Significations, Interpretations, and Modes of Consumption

Introduction

As the discussion in the previous chapter has illustrated, the historical emergence of a promotional system alongside capitalist industrialization, spanning diverse means such as advertising, design, packaging, and promotion, what Wernick (1991) refers to as the industrial manufacture of goods and meaning, may be understood as the gradual rationalization of promotional practice and the fusion of culture and production. Equally importantly, this historical process has recently expanded across culture more broadly by way of a deepening promotional intertextuality across commodities and commercial media culture, a complex that today spans brand sponsorship, product placement, and lifestyle promotion in addition to more traditional forms of marketing and advertising. As Wernick (1991) points out, commercial culture today may be understood as a promotional complex, a "hall of mirrors" where promotion within and across media platforms is interconnected in dense promotional circuits. As an integrated whole, this promotional complex is designed to attract audiences, promote consumer goods and cultural products, and promote consumption as a way of life.

Reflecting on these historical developments and the deepening integration of economy and culture more generally, Jansson (2001) argues that it makes little sense to conceptually separate media culture and consumer culture, since today media is essential to and inseparable from commodity production and consumption. In addition, Jansson suggests, both media texts and commodities may be understood as commercially produced cultural objects that function as resources for the enactment of everyday culture in contemporary consumer societies. That is, both commercial media

products and media-imaged commodities today are increasingly adopted by people as meaningful aspects of their lives and this process underlies the production of culture in everyday life. According to Jansson, the fusion of media and consumer culture may be conceptualized as the emergence of an *image culture*, a particular historic and social arrangement characterized by a deepening integration and connectedness of media images and media-imaged commodities.

This chapter takes up Jansson's account of image culture as a point of departure for considering the interrelation between texts and commodities, a thematic that is further developed by way of actor-network theory. The resulting theoretical insights are extended to advertising and promotion, lifestyle media, and consumer tribalism to consider in greater depth their distinct contributions to consumer culture and technology development. The chapter then shifts attention to examine interpretation and the appropriation of goods by consumers engaged with mass-produced commodities. Particular attention is given to the intertextual, sociocultural, and situational contexts of interpretation as a means to account for the complexity of meaning-making practices in liberal societies. In order to provide some structure to this diversity, a typology of consumption modes is introduced that incorporates existing theoretical and empirical work in consumption studies. The chapter concludes with a discussion of the dissertation's research questions, expected contributions, and methodology.

Media Culture, Texts, and Technologies

Commercial Intertextuality

Like Wernick's (1991) account of promotional intertextuality, which lies at the heart of promotional culture, for Jansson (2001) commercial intertextuality functions as the cultural mechanism of image culture, which may be understood as both an elaboration and a generalization of Wernick's account that acknowledges the importance of mediatization more generally and the contributing role of media texts to shaping the meaning of goods and consumption practices. That is, in addition to advertising, promotion, and brand sponsorship, media culture more generally functions as a source of information, connotation, and interpretation by drawing on and positioning

commodities and consumption practices in diverse cultural products such as television shows, movies, music, novels, and magazines, for example. According to Jansson (2001), today the consumption of a product is likely to be interpreted according to standards and frameworks that are deeply influenced by media texts and images that position commodities and consumption in particular ways.

As the semiotic mode of a culturalized economy, commercial intertextuality spans interconnected texts, pictures, and image-loaded artefacts and is enabled by a pervasive commercial media system that provides the necessary foundation for the circulation of cultural content (Jansson, 2001). Given this context, the meaning of an act of consumption emerges to a significant extent by way of a link between the object of consumption and its media-produced and circulated image, which is often based upon multiple texts and is inscribed in the commodity in the same way as texts may be inscribed within other texts. For example, when Marlon Brando and James Dean donned leather jackets in "The Wild One" and "Rebel Without a Cause", 1950s teenagers not only mimicked their characters and styles, but leather jackets became widely recognized symbols of rebellion and delinquency as a result of both movies. In a similar way, media texts may draw on imaged commodities as textual resources in an effort to establish themes, settings, or narratives. For example, since the 1950s punk and heavy metal rock bands have donned black leather jackets and drawn on their rebellious connotations for their identity and imaging.

As Jansson (2001) points out, commercial intertextuality includes diverse promotional practices such as product placement, where a dual-linkage is made, on the one hand, from media text to product, imbuing the product with media text values and styles, and on the other, from product to media text, where the product image may be drawn upon as a resource for media characters or styles. Commercial intertextuality also includes broader and more indirect forms, such as when media acts as a source of information about or a context for the enactment of lifestyles around goods. This may include explicitly commercial lifestyle media, but it may also include non-commercial media both as a source of images for commodities as well as a proxy for commercial media formats, genres, and styles that are adopted by non-commercial media to appeal to popular tastes.

In addition, commercial intertextuality also includes the materialization of media texts into consumer goods and experiences that may strengthen both texts and commodified goods and services. For example, Disney theme parks provide visitors with a physical space populated by recognizable characters and scenes, a space for the experience of well-known narratives, and themed merchandise to accompany the consumption of texts across diverse media (Jansson, 2001). In a similar way, commercial intertextuality may be said to encompass the materialization of digital goods, including video games and software applications, as exemplified by popular games such as Angry Birds that today includes multiple titles across different game platforms as well as a plethora of clothing, stuffed toys, and other merchandise. Both the game and its offline merchandise refer to each other as forms of everywhere-visible popular culture.

According to Jansson (2001), the result of this interconnected production and circulation is an intensified cultural flow whereby everyday life is experienced as a continuous flow of images across media texts, advertising, and commodities such that it becomes increasingly difficult to separate images from products. As Jansson points out, this commercial intertextuality and blurring functions largely unnoticed in contemporary consumer society and emanates from a composite media system that includes diverse and interrelated objects, texts, genres, and discourses. Media images and commodities become increasingly inscribed with each other through a proliferation of denotative and connotative links.

If we return to consider the place of advertising and promotion, lifestyle media, and consumer tribalism in light of Jansson's argument, each may be understood as a site of both mediatization and mediation that engages at different levels and to differing degrees with the production, circulation, and consumption of commodity images. Understood within the larger context of the broader media system, these sites do not exhaust nor entail the totality of this mediatization or mediation, which spans popular culture more broadly and includes television, film, music, books, and magazines. At the same time, the selected sites are privileged areas of investigation in the sense that they are dynamic cultural and social spaces that engage in rapid cultural production, circulation, and commodity imaging, a concentration and density of effort that is unparalleled by less specialized media forms that may engage with goods and lifestyles

at a more general and diffuse level. With respect to more traditional media, the sites of research selected for this dissertation may be compared to consumption-focused magazines, niche lifestyle television shows, or books devoted to leisure activities or popular hobbies.

Fusion of Media and Consumer Culture

Economic and cultural developments have fused media and consumer culture together such that it may no longer be productive to look for distinctions – today both are permeated by processes of mediatization and commodification and have increasingly become inseparable (Jansson, 2001). At a theoretical level, Jansson (2001) argues that although they are rarely compared, media and consumer culture are also conceptually similar in the sense that both have been approached and can be understood in terms of structure and agency, a dynamic between commercially produced cultural goods, on the one hand, and their use and appropriation in everyday life, on the other. Rather than approach media and consumer culture as two distinct domains, Jansson suggests that we acknowledge this equivalence and approach image culture as an interwoven whole that includes different types of commodities (media texts and consumer goods) that are subject to people's everyday hermeneutic praxis.

More specifically, we can understand cultural products as material and immaterial human creations that become meaningful as they enter shared webs of significance (Jansson, 2001). Here, cultural products, whether they are media texts or consumer goods, function as signs in subjective experience in relation to a context and are representations of something more than their physical and sensory properties. And like all cultural phenomena, they become cultural through the interplay between signification and interpretation (Jansson, 2001).

Thus, both media and consumer culture may be understood as founded upon a hermeneutic process through which commodities become meaningful in people's lives. Likewise, both media and consumer culture have come to refer to a sociocultural condition where products-as-texts saturate and permeate everyday culture. In contemporary consumer societies, commodities have become important aspects of

communication, cultural communities, and the creation and maintenance of cultural identities (Jansson, 2001). Although it may be possible to distinguish media products from consumer goods at the product-level, Jansson argues that it is becoming increasingly difficult to do so given that most media products today are commodities and most consumer goods today function as mediators of meaning. Although there continue to be consumer goods with minimal meaning associated with them and non-commodified media products, the large majority of cultural goods today are enmeshed in complex patterns of commercial intertextuality (Jansson, 2001).

Texts, Artefacts, and Actor-Networks

Commercial intertextuality and image culture draw our attention to economic and cultural developments that result in a blurring of boundaries between media and consumer culture and the dense interweaving of media texts and consumer goods. At an even broader level, we can understand both media products and consumer goods as artefacts whose shape and contours are a product of not only commercial intertextuality, but a multiplicity of diverse associations with other heterogeneous elements as well. That is, in addition to textual relations across and within texts and commodities, we can also include the full diversity of other associations among entities and consider practices that link, transform, and deform texts and artefacts. This generalized approach to intertextuality and the association of heterogeneous elements has been pursued most thoroughly by actor-network theory, which emerged from science and technology studies and takes as its starting point the interconnectedness of humans and nonhumans as a basis for reconceptualizing the nature of texts and artefacts.

Like the weaving of texts inherent to intertextuality, actor-network theory entails a shift in metaphor from unified surfaces to threads, fibres, and filaments that are woven together to achieve particular orders and effects (Latour, 1996). For example, strength and stability are understood not as aspects of purity but rather as achievements that require effort and the weaving of many weak ties. Actor-network theory argues that artefacts are impure hybrids that combine and weave together heterogeneous elements in ensembles of associations that give form to both the artefact as well as its constituent parts.

As research in science and technology studies has demonstrated, society cannot be understood or adequately explained without taking into account the facts, texts, and artefacts that circulate, animate, and mediate social relations. Actor-network theory attempts to account for this mediation by providing a generic conceptual framework and methodology for tracing the associations between humans and nonhumans without dictating a priori their possible relations or who or what may act (Latour, 1996). Consequently, an *actant* may be anything that acts or to which activity is granted and thus includes traditional social actors as well as texts and artefacts. In a similar way, an actor-network is understood as an association of actants, an ensemble of action that may act in tandem or tend towards disaggregation (Latour, 1996).

Actor-network theory draws on core insights from semiotics and understands texts as rich mediators that contribute to the constitution of reality (Latour, 1996). That is, in contrast to theories of representation that approach texts as transparent windows onto a pre-existing reality, actor-network theory understands texts as important components of this reality that define in-text not only their contexts, but also their readers and authors. There is thus a shift in orientation from questions of accuracy and the extent to which texts faithfully represent a pre-existing reality towards the work that texts are able to perform in defining and constituting this reality.

At the same time, actor-network theory departs from traditional semiotic approaches by not limiting itself to only literary texts and meaning-making processes. Instead it extends semiotics to the external referent systems that are traditionally bracketed-out by semiotics by demonstrating that science and technology as well as nature and society are also constituted by a diversity of texts and social practices that create and circulate facts and artefacts in ways that give shape to these referent systems (Latour, 1996). According to actor-network theory, facts and artefacts become imbricated and embedded in the social fabric and the natural world in such a way that these associations come to define for us the very essence of nature and society. Thus, facts and artefacts are not external to texts so much as constituted by them alongside social practices and physical matter that must always be taken into account simultaneously.

Semiotics is thus extended to things themselves as a tool for tracing the construction of facts and artefacts and the work of attributing, distributing, and connecting entities as well as tracking the ways in which they are granted competencies, enact performances, and enter ensembles of action (Latour, 1996). This semiotics of things is at once an analysis of language, activity, and matter that attempts to account for the path-building and order-making activities of actors and actor-networks (Latour, 1996). To the extent that it treats language, objects, and practices as constituent elements that need to be simultaneously recognized in their interrelation, actor-network theory elevates things to the status of texts while at the same time elevating texts to the status of things (Latour, 1996). That is, all entities are granted the dynamism of textual characters, in their variety, action, and circulation, and all entities are granted the materiality of referent systems and the reality and solidity that this implies (Latour, 1996).

Unlike traditional semiotic approaches, there is thus no gap between a circulating object in-text and its referent system "out there" and external to the text (Latour, 1996). Instead there is a continuity and interrelatedness that spans how an object circulates in-text, the claims that are made on its behalf in society, and what it is able to do itself in nature. Given this analytic equivalence and continuity, the focus shifts towards the ways in which texts, actions, and events are interwoven and the ways in which this interweaving creates particular orders and networks of associations. Thus, actor-network theory is at once language-centred, action-centred, and material-centred and provides a means for understanding the interrelation of texts, practices, and matter.

Actor-network theory argues that actants are co-constituted together and co-emerge as a result of their associations. Both facts and artefacts are understood to be circulating objects that are endowed with competencies, undergo *trials of strength* (Latour, 1988), and are allowed to display particular performances that shape and define what they are. However, this circulation as well as what makes this circulation possible are co-determined in the sense that both the moving actant and the actors who do the moving are transformed in the process (Latour, 1996). For example, the construction of an artefact that is made to enact desired performances and withstand trials of strength may not only transform the artefact itself into a more stable and durable form but may also alter the status of the actors responsible for its construction, who may be endowed

with new competencies and qualities (e.g. "excellence", "competence", etc.). Or stated in another way: actors themselves may be transformed in the process of transforming circulating objects.

Technology Construction, Enrolment, and Translation

Within actor-network theory, the development and adoption of technology is understood as a form of *heterogeneous engineering* (Law, 1989), since in order to be successful technology producers must associate and bind nonhuman and human elements into stable arrangements that resist disaggregation. To the extent that constituent elements may be indifferent or unhelpful to the actor-network, technology producers must thus employ diverse strategies to enrol and control actants in ways that will lead to a stable arrangement. For example, in his development of electric lighting, Thomas Edison had to persuade policymakers to permit the building of a power system, needed to find a balance between the length of power lines, current flow, and voltage, and had to secure a high resistance incandescent filament for his bulb (Law, 1989). In each case, Edison needed to identify, associate, and stabilize otherwise indifferent humans and nonhumans into a durable arrangement that would eventually become an ubiquitous system of electricity and lighting.

According to Latour (1988), technology has elements tied to it that make it more or less "real." If Edison can persuade policymakers, identify a good balance for power distribution, and find a suitable filament, then his power system and electric lighting become more and more "real." In contrast, if policymakers remain opposed to his proposals or if he cannot secure a filament, electric lighting becomes less "real," since it will correspond to a limited and unstable actor-network of blueprints, ideas, and poorly working parts. In order for a technology to become "real," the human and nonhuman elements need to be successfully enrolled and juxtaposed into a stable arrangement that can be turned into an unproblematic "black box" that conceals its complexity and may be taken up by consumers as a stable and unified whole.

Based on his research of technology development, Latour (1988) argues that technology producers need to not only interest and enrol others (e.g. policymakers,

engineers, consumers, etc.) to participate in the construction and extension of the actor-network, but they also need to control their behaviour so that their actions become well-defined, predictable, and well-suited to the stability and durability of the network. According to Latour (1988), there is a set of strategies to interest and enrol human actors and a second set of strategies to enlist nonhuman elements to control and hold the human actors in place. That is, in order to be successful technology producers must first translate their interests into the terms and interests of the human actors that they are trying to enrol and then try to bind them to nonhuman elements to keep them in place. As Latour (1988) argues, technology producers will be most successful when they are able to tie humans actors to nonhuman elements that have been made durable over time, whether they are stable facts or durable artefacts, since they are difficult to challenge and resist. By tying human actors to stable nonhumans, heterogeneous engineers make it more difficult for them to disband and improve the likelihood that their actor-network will not disaggregate.

Thus, the development of a technology may be examined in terms of its *sociogram* and *technogram* which correspond to the human and nonhuman associations that are established over time as a means of advancing and stabilizing an actor-network (Latour, 1988). In the case of the sociogram, one looks to see who the technology is designed to interest and enrol via translation, whereas in the case of the technogram, one looks to see what nonhuman elements the technology is tied to in order to make this enrolment more stable. For example, in the course of its development, Diesel's engine was gradually transformed from a "fiction" (Latour, 1996) largely made up of blueprints and patents, to prototypes that were eventually made to work, to a "reality" in the form of a black box that could be installed and sold in cars and trucks (Latour, 1988). During this process, it needed to be taken up first by engineers and managers, then distributors and salespeople, and eventually consumers interested in and committed to driving Diesel vehicles. At each stage, what the technology was composed of depended on who it needed to convince and enrol to further its development and to extend its actor-network. That is, once Diesel was able to convince a manufacturer to build a prototype, he needed to associate his blueprints and patents with engineers to ensure their faithfulness to his design. In a similar way, once a working prototype was established, a system of solid injection needed to be developed in order to make the system

unproblematic and easy to use for interested consumers. According to Latour (1988), understanding what a technology is and who its people are, that is, its technogram and sociogram, are two sides of the same coin: one may glean information from one side about the other and vice-versa.

Translating Advertising and Promotion, Lifestyle Media, and Consumer Tribalism

Actor-network theory provides a conceptual framework that integrates the distinct characteristics of texts, artefacts, and practices into an integrated model that attempts to account for the seamless interweaving of human and nonhuman elements in modern societies. As a generic theoretical framework, the terms and concepts are unspecific and may be applied to diverse fields of study by way of translation to the phenomena under consideration. For the purposes of this dissertation, actor-network theory extends our understanding of the relation between texts and commodities by way of an ontological claim about the very nature of artefacts, which may be understood as ensembles of heterogeneous elements. This claim may be understood as a further expansion and generalization of commercial intertextuality and the constitutive role of media texts in defining commodities. According to actor-network theory, artefacts may be associated with diverse texts that include blueprints, patents, and specifications, for example, in addition to media texts. Moreover, these associations may be more or less active and visible in the course of a technology's development. For instance, media texts that image a particular artefact will typically be more widely circulated once an artefact has begun to stabilize in society, whereas other texts, such as plans, proposals, and patents may be the only texts that narrowly circulate during initial stages of development.

In general, artefacts may be positioned on a spectrum of material existence demarcated by the two poles of "fiction" and "reality." During initial development, technologies exist largely as assemblages of texts that may include designs, ideas, descriptions, and patents. Before prototypes are built, technologies are relatively unstable actor-networks that include an ensemble of texts interwoven with designers, managers, and marketers who attempt to transform an unstable and largely "fictional" artefact into a durable and stable "reality" that will be taken up and tightly bound with

consumers. At this early stage of development, what the technology is may be highly variable, contested, and open to internal and external influences from a diversity of sources.

Understood with respect to advertising, promotion, and commercial intertextuality, actor-network theory deepens and broadens our understanding of the role and function of texts by demonstrating the extent and ways in which texts are constituent elements of artefacts. That is, in addition to promotional intertextuality across texts and commodities, and commercial intertextuality across media and consumer culture more broadly, both of which contribute to our understanding of the economic and cultural determinants of technology production and consumption, actor-network theory draws our attention to the use of texts as resources for the enrolment of diverse actors necessary for successful technology development and adoption.

As media for the translation and association of facts, artefacts, and practices, texts are imbricated with other nonhuman elements that are deployed by technology developers to bind and stabilize otherwise indifferent or unhelpful human actors. Thus in addition to their embeddedness within systems of advertising and promotion and media culture more broadly, both of which constitute artefacts in particular ways, technologies are also interwoven with facts and other artefacts in ways that contribute to what they are at both a cultural and material level. For example, the association of a particular technology or product with inhumane working conditions or environmental disasters by news media texts may bind particular facts to an artefact in ways that may alter consumer perceptions, generate promotional responses from producers, and result in shifts of appropriation by commercial media. In addition, not only are technologies intertextually constituted, but they are also often made interdependent at a material level in order to limit the movement of users and extend consumer commitment from one artefact to others produced by the same manufacturer. Compatibilities within a family of technologies and constructed incompatibilities across competing manufacturers attest to the material strategies and associations employed by producers to keep consumers faithful to a particular technology or brand.

We can similarly revisit advertising and promotion, lifestyle media, and consumer tribalism by way of actor-network theory as a means of further clarifying their relevance in contemporary consumer societies. In the terms and concepts of actor-network theory, advertising and promotion may be understood as one of the more, if not the most, visible strategies of producers to enrol consumers into actor-networks centred around the exchange and use of branded artefacts. As the previous chapter has illustrated, this enrolment relies heavily on the surveillance of culture which provides an important means of translating the interests of producers and the properties of artefacts into the values, beliefs, and aspirations of people such that when successful a link is established between commodities and the cultural world of consumers. Although advertising and promotion represent important strategies necessary for producer success, they are insufficient in themselves, since producers must also enrol engineers to design their technologies, employ a labour force for manufacturing, source necessary materials for production, influence and follow standards bodies, and ensure that lifestyle media engage with and extend their actor-networks by way of a dissemination of information, skills, and practices centred around their products.

In turn, lifestyle media attempt to enrol audiences for sale to their advertisers by publishing content that will appeal to consumers, including advice, analysis, and reviews. However, publishers need to strike a balance between attracting audiences and not offending technology producers, who are a source of valuable information about development plans, existing products, and insider news. At the same time, publishers need to appear independent from producers if they are to be perceived by audiences as credible sources of analysis. Lifestyle media publishers thus attempt to stabilize an actor-network that includes advertisers and consumers on one side and technology producers and industry insiders on the other. Market success entails the generation of profit from the sale of an audience commodity to advertisers and from promotional arrangements with technology producers who strive to extend their respective actor-networks through the distribution of texts intended to generate interest and engagement with existing and potential consumers. Likewise, both lifestyle media and technology producers circulate facts, artefacts, and practices intended to bind consumers to products.

Although consumers are the subject of many enrolment strategies by producers and lifestyle media, they also attempt to direct and enrol producers and publishers through the production and interlinking of texts that correspond to their experiences, ideas, and demands. This consumer activity contributes to the intertextual flow that envelops commodities and exists alongside the official texts of producers and lifestyle media. Consumers may publicly accept, question, and critique producers and lifestyle media and in so doing may extend, amplify, or undermine producer and lifestyle media enrolment strategies. The recent emergence of enterprise-level software tools to aid with the collection, organization, and systematic assessment of consumer activities online is a testament to the growth and importance of this consumer activity. At the same time, it is not the mere existence of consumer-generated texts that is of primary relevance, but the extent to which these texts act and whether they make a difference to existing actor-networks. This criteria is equally applicable to texts produced and circulated by lifestyle media publishers and technology producers.

As a collective actor, the extent to which consumer tribes accept their roles and positions within existing actor-networks corresponds to the appropriation and market-building axes discussed in the previous chapter. When they refuse to be bound or to faithfully extend the prescribed actor-network, consumer tribes may sometimes plunder resources and attempt to appropriate or extend the network in directions that oppose or exist alongside official *programs of action*. This activity may result in the establishment of an *anti-program*, a reconfiguration of network elements that may correspond to the satisfaction of unmet needs, the elimination of harmful consequences, or the fulfillment of unrealized potentials by an existing actor-network (Feenberg, 1999).

Actor-network theory and Jansson's account of image culture thus expand and further elaborate the theoretical basis of this dissertation and our understanding of advertising and promotion, lifestyle media, and consumer tribalism, each of which entails a particular contribution to the production, circulation, and association of texts and artefacts. Advertising and promotion entails the creation of texts that correspond to producer strategies of signification and the attempted anchoring of otherwise indistinguishable commodities within the social and cultural contexts of consumers. Lifestyle media promotes goods and circulates the official texts and significations of

producers, but its activities are not limited to this function alone, since it also creates its own specialized texts and associates particular knowledges, skills, and practices of consumption with commodities that may or may not overlap with the strategies of producers. Lastly, consumer tribes today produce and circulate a diversity of texts online that correspond to consumer enthusiasms, sociability, and experiences which may include collective forms of intelligence, critique, and resistance that exist alongside the activities of technology producers and lifestyle media.

Taken as a whole, the resultant intertextuality across official sites of promotion and lifestyle media and unofficial sites that span consumer blogs, forums, and social media envelops products within a mesh of signification that corresponds to different social actors attempting to constitute artefacts in ways that correspond to their respective socioeconomic roles and frames of reference. Despite this common foundation, not all texts are created or circulated equally, since technology producers and media publishers continue to be situated in privileged economic, social, and cultural positions relative to consumers and are able to draw on their resources in ways that ensure wider and more prominent circulation of their texts relative to those created by consumers. That is, although new media provides affordances for the creation and distribution of content by individuals and collectivities, this content continues to compete for the attention of readers alongside commercially produced and widely promoted content created by manufacturers, marketers, and media publishers.

Hermeneutic Praxis and The Meaning of Goods

Cultural Products, Communities, and Practices

Having considered the deeply intertwined character of texts and artefacts, the following sections will review and elaborate the relation between commodities and hermeneutic praxis with the aim of further explicating the theoretical orientation of the dissertation and developing a methodology that will provide a framework for the dissertation research. Following a consideration of interpretive practices and their relation to cultural communities and contexts, the discussion will move to describe a typology of consumption that will be used to develop the dissertation's research

questions. The discussion will then conclude with a detailed consideration of the methods and data selection process.

Drawing on insights from anthropology and cultural studies, one way that we can approach culture is as an interrelation of cultural products, cultural communities, and cultural practices (Jansson, 2001). In contrast to traditional accounts of "official" culture, which are typically limited to the fine arts, culture may be understood more broadly as that which is meaningful to people in everyday life and which may be found wherever there is communication and social interaction. In this conception, the hermeneutic dynamic, the interplay between signification and interpretation, may be understood as the smallest common denominator that spans cultural products, cultural communities, and cultural practices (Jansson, 2001). This hermeneutic dynamic presupposes and contributes to the creation of shared webs of significance that provide a foundation for intersubjective understanding, enable social interaction, and lead to shared schemes of interpretation (Jansson, 2001).

In line with research and theory within consumer studies (cf. Baudrillard, 1968/1996; Douglas and Isherwood, 1978/1996) and the sociology of technology (cf. Pinch & Bijker, 1989), the actual meaning of artefacts may be understood as an outcome of processes of classification and interpretation. As many technology case studies have illustrated, in addition to an artefact's connotative aspects, the very function and purpose of a technology is subject to this dynamic. That is, the meaning and function of artefacts is neither fixed, pre-given, nor carried by objects themselves but instead emerges within processes of production, exchange, and use such that cultural significance may be understood as dependent on the aims of producers, existing material affordances and limitations, and the characteristics and interpretations of users (Jansson, 2001).

As Douglas and Isherwood (1978/1996) argue, objects enable people to make sense of the world and enter complex systems of cultural categorization that are established and negotiated via consumption and social interaction. Moreover, this categorization always takes place in relation to other goods in both a structural and situational sense: an object may be understood in terms of its general position in space relative to other objects as well as in relation to other objects within specific object-

ensembles in everyday life (Jansson, 2001). There is thus a dynamic of presence/absence at play, where the meaning of an object is always in relation to present other objects in concrete physical environments as well as based on its relation to absent other objects that may have been present (Jansson, 2001). These systems of difference, what the object is and what it is not in relation to other objects, provide a basis for cultural expression via consumer goods (Baudrillard, 1968/1996).

Negotiation, Diversity, and Heterogeneity

Although texts and commodities permeate everyday life in highly mediatized consumer societies, their intertextuality does not operate in a cultural vacuum – artefacts and texts can never take on meanings by themselves. In a similar way, neither texts nor artefacts can ultimately dictate how meanings will be generated by particular people in specific contexts. As Jansson (2001) points out, even when intertextual inscriptions function as intended by cultural producers, they must always be "discovered" and drawn out by a subject drawing on frames of reference that result in temporary fixations of meaning specific to a particular time and place.

In contrast to media deterministic arguments, cultural studies research, most notably British cultural studies (cf. Hebdige, 1979), has demonstrated that consumers are neither passive nor manipulated dupes, but instead engage with texts and artefacts in ways that are meaningful to their lived experiences and their economic, social, and cultural contexts. Although some strands of cultural studies tend to overemphasize agency by conceptualizing cultural life as a free play with little account or weight given to structure, the general account of cultural creativity and emphasis on the abilities and skills of people to interpret and appropriate texts and commodities is valuable and relevant to the present discussion. That is, just like any other form of meaning production, intertextuality must be understood as a process of negotiation between social actors who are unevenly situated with respect to economic, social, and cultural resources, a process that includes hermeneutic creativity and appropriation, but which is nonetheless structured and cannot escape the code systems, categories, and ideologies that form the foundation for the production and consumption of texts and artefacts (Jansson, 2001).

In addition, even though individuals may be understood as members of cultural communities with shared schemes of interpretation, this need not imply that these communities are completely homogeneous or easily demarcated via sharp boundaries. As Jansson (2001) points out, even though social groups may appear distinct, reductive simplifications need to be avoided since culture is not a stable entity and is subject to internal tensions and transformations over time. That is, cultural communities need to be understood as fluid and dynamic and cannot be reified as perpetually unchanging or consistent.

For example, in their longitudinal research of Harley-Davidson motorcycle consumption in the U.S., Schouten, Martin, and McAlexander (2007) trace the evolution over time of a subculture into multiple microcultures of consumption founded upon a common basis of sociality around motorcycle ridership that nonetheless exhibited differences of orientation and consumption across subgroups and individuals. Although the subculture was broadly defined by core values of personal freedom, patriotism, and machismo and included shared socialization processes for joining, legitimation, and social advancement, different subgroups and individuals within the subculture related to these core values and processes in diverse ways such that at times their values and cultural practices co-existed in tension with officially sanctioned ideologies and modes of consumption. Women riders, for instance, rejected hyper-male notions of speed and visceral intensity and instead were drawn towards slower paces and experiences. Likewise, although women riders embraced the core values of freedom and machismo, unlike men riders, they tended to interpret these values in relation to traditional gender roles and the desire to distance oneself from traditional femininities. Machismo understood in this way became about competency, self-confidence, and breaking free from social constraints.

Research studies such as these highlight the heterogeneity, tensions, and differences that may exist within a cultural community that at the same time may be characterized by shared forms of sociability and common cultural products and frames of interpretation. While it may be possible to identify a group's core values, webs of significance, and modes of consumption, these identifications need to always be understood as partial to not only a given cultural community in a particular time and

place but also with respect to member subgroups and individuals who may orient themselves in distinct ways to the group's values and practices based on the specificity of their own experiences and position in social and cultural space.

Contexts of Interpretation

Jansson (2001) suggests that hermeneutic activity may be understood with respect to three contexts of interpretation that frame the ways in which cultural products are ascribed meaning. These contexts will be described briefly here to further elaborate the process by which artefacts become meaningful in people's lives. They will also provide a basis for considering the ways in which different contexts may interact with each other as well as be applied to commodities at different points in time, which will be considered in greater detail in the following section.

To begin with, commodities need to be understood as positioned within an intertextual context that relates a given artefact to other products by way of direct associations, constructed relations, and positioning within systems of difference (Jansson, 2001). This intertextuality is intended to situate goods within social and cultural space by way of direct and indirect links to other texts and cultural products that together in their relations provide a context for interpretation for a given commodity. This intertextual context today includes forms of promotional intertextuality, lifestyle media positioning, as well as the interweaving that takes place between and across media texts and consumer goods more generally.

Although Jansson's focus is limited to commercial intertextuality spanning media and consumer culture, we can expand his formulation to a more generalized conception of intertextuality informed by actor-network theory that includes texts and artefacts as well as other elements, such as facts and human actors and their respective associations. That is, to the extent that we can understand artefacts as actor-networks that include heterogeneous human and nonhuman elements, our notion of interpretation must also be expanded to include diverse elements that are associated with the texts of media and consumer culture.

For example, a mobile phone such as the BlackBerry Z10 is constituted not only by promotional texts and its imaging within movies and television shows, but also by its association with its manufacturer (social actor), its recent economic performance (economic facts), and its tribe of loyal Canadian customers (social actor). Consumers considering the BlackBerry are thus confronted with an interrelatedness that requires a reading across promotional and commercial media texts, circulated facts, the producer-as-text, and consumer sentiment that spans multiple sites of signification and intertextuality.

Secondly, a given artefact's intertextuality will always be situated within a sociocultural context that includes diverse frameworks of interpretation that may be drawn upon by individuals in their interpretation of this intertextuality (Jansson, 2001). That is, if we understand individuals as members of multiple and diverse cultural communities that span social categories such as class, gender, age, and ethnicity as well as lifestyle and consumption, interpretation will vary according to the composition of a subject's cultural framework and may lead to divergences of interpretation across individuals, texts, and consumer goods.

The relation of a subject to an intertextual pattern depends on an individual's interpretive community memberships and may lead to inter-subjective or psychological conflict if competing schemes of interpretation are invoked simultaneously (Jansson, 2001). In contemporary consumer societies characterized by pervasive mediatization and deepening identity investments in consumption, this sociocultural context includes consumer tribes and subcultures as well as lifestyle media and promotion which provide individuals with interpretive resources and specialized frameworks of interpretation. In addition, to the extent that each individual is unique in terms of their personal experiences, life history, and preferences, an individual's personal context provides a basis for the interpretation of intertextuality (Jansson, 2001).

Lastly, the process of interpretation depends on the situational context: the immediate social, cultural, material, temporal, and spatial context in which subjects, interpretive frameworks, and commodities are always located (Jansson, 2001). That is, even within shared sociocultural contexts, there are likely to be variations of

interpretation and consumption across situational contexts that introduce their own norms, cultural conventions, and prescriptions. For example, one's orientation to food at home during the week is likely to differ from one's consumption practices on the week-end, at restaurants, and with others. Likewise, the presence or absence of other objects or the nature of composition of ensembles of goods in a given context may influence one's interpretation and relation to particular cultural products. In a similar way, the presence of other people, as exemplified by the sociality centred around consumption of consumer tribes and subcultures, for example, and the concomitant dynamics of discussions, reactions, and distractions will contribute to and influence the meanings of consumed goods (Jansson, 2001).

These three contexts of interpretation – intertextual, sociocultural, situational – are not only interrelated but also need to be understood as in fluctuation both internally and in relation to each other (Jansson, 2001). For example, the meanings of external texts inscribed in a given commodity may change over time since they themselves exist in variable contexts and are subject to new readings, modified associations, and instability. Likewise, the dynamics of a given situational context may change as a result of the introduction of new texts or the modification of existing material ensembles, inflecting texts and cultural products in new or modified ways. In a similar way, and at a broader level, the historical detraditionalization of everyday life characteristic of liberal societies represents the gradual decline of tradition and the prevalence of other sociocultural frameworks for the interpretation of goods and the structuring of consumption practices.

The Cultural Life of Things

Reflecting on the differences between small-scale, traditional societies and contemporary, large-scale, capitalist societies, Kopytoff (1986) locates the effects of detraditionalization and expanding commodification with a general decline of public culture as a source of guidance which is instead increasingly being deferred to pluralism and relativism. According to Kopytoff (1986), in contrast to small-scale societies with stable social and object identities characterized by well-known cultural rules, classifications, and orders, large-scale liberal societies exhibit relatively unstable social

and object identities that are numerous, shifting, and at times conflicting. There are fewer stable and universally adopted guidelines, the rules are generally less clear, and much classification is deferred to the idiosyncratic systems of values of social groups and individuals. When compared to small-scale traditional societies, modern capitalist societies are thus unique in the sense that they combine a continually expanding commodification of material culture alongside a multiplicity of systems of cultural classification that provide a basis for interpretation and the attribution of meaning to mass produced goods.

In addition to the temporal dimensions identified by Jansson (2001) with respect to changes in schemes of interpretation over time and the situatedness of cultural products in specific contexts of time and place, Kopytoff (1986) suggests that we can also understand the process of classification and interpretation with respect to the life or biography of actual objects. Although mass produced goods may begin life as imaged commodities that are exchanged within a well established system of generalized equivalence, once they are possessed they undergo a process of de-commoditization and singularization by which their status as commodities is deactivated as a necessary prerequisite for collective and individual redefinition and reclassification (Kopytoff, 1986). This withdrawal of objects from the sphere of exchange may be understood as a form of sacralization – a means of making sacred – where previously generic and interchangeable goods are re-classified and singularized according to collective and individual schemes of interpretation. In a similar way, following a period of possession and singularization, objects may sometimes be de-possessed, de-sacralized, and re-commoditized as they re-enter the sphere of exchange as used goods.

If we examine the process of singularization in more detail, cultural communities may be understood as sources of guidelines for the enactment of cultural sacredness that bear the stamp of collective approval and which channel individual practices of de-commoditization and singularization (Kopytoff, 1986). Although contemporary consumer societies may be characterized by historical processes of detraditionalization and individualization, individuals continue to be situated in multiple and diverse cultural communities that provide systems of classification and schemes of interpretation for the transformation of commodities into singularized objects. Even though social and cultural

norms may be less rigid today than in the past, consumption continues to be structured by collective systems of classification in addition to personal idiosyncrasies and orders. On the one hand, society-wide commodification processes flatten the full heterogeneity of things into a homogeneous system of equivalence where any object is in principle exchangeable with any other. On the other hand, individuals may play with collective categories and apply singularization rationales based on personal experiences and bestow objects with distinctions that are unique to the individual. In between these two extremes, cultural communities provide frameworks of classification and schemes of interpretation such that a mass produced product may begin life as a commodity, enter individual possession by way of singularization based on cultural community guidelines, and over time gain privileged individual status as a result of personal experiences.

In sum, in the course of an object's life its cultural status and position may be quite variable. Although most objects today are produced as commodities, they spend a large proportion of their lifespan outside the sphere of exchange and are subject to diverse discrimination criteria by individuals who may draw upon multiple sources of classification both simultaneously and over time that may be society-wide, group-specific, and/or highly individual in nature. The resulting cultural composite will define what an object is relative to a specific individual and to the extent that this composite may change over time will chart the course of the object's biography.

Modes of Consumption

As the preceding discussion has illustrated, consumer goods are culturally constituted entities that are produced and consumed in relation to particular economic, social, and cultural constellations, subject to diverse, interwoven contexts of interpretation, and increasingly inseparable today from media culture. Equally importantly, the significations and interpretations entailed by these processes are understood to be in flux and variable, since texts, goods, and contexts are subject to change that may render past stabilities in new forms. Likewise, to the extent that multiple and diverse interpretive frameworks co-exist in liberal societies, the classification inherent to the interpretation of consumer goods may at times lead to inter-group and intra-groups conflicts, interpersonal disagreements, and internal tensions within

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individuals caught between opposing systems of classification. In addition, a given commodity may be subject to many classifications in the course of its life, spanning processes of exchange and possession, that are structured by sociocultural, situational, and intertextual conditions and the idiosyncrasies of particular individuals relating to specific objects.

This theoretical account is intended to draw attention to some of the complexity inherent to practices of interpretation and consumption and the ways in which these practices are mediated by a multiplicity of diverse factors. Although practices of signification are important to the consideration of media texts and artefacts, they are meaningless unless the hermeneutic loop is completed by a subject who is capable of reading, deciphering, and constructing meaning that may or may not correspond to the intended meanings of authors and producers. In principle, the diversity of such readings may be said to be infinite given the innumerable permutations of shifting individual, intertextual, situational, and sociocultural factors, but in practice we can expect some patterns to organize this diversity given that individuals, media texts, and objects are always situated in shared sociocultural contexts that must exhibit some stability and some degree of order and predictability – otherwise communication would not be possible. The emergence, rise, and prevalence of target marketing attests to the fact that sociocultural space may not only be mapped but also addressed using finely crafted modes of signification intended to resonate with target groups despite the differences that may distinguish individuals within a given target market.

Although the focus of this dissertation does not include the creation or identification of target markets, we may nonetheless inquire into the practices of signification and interpretation of technology producers and marketers, lifestyle media cultural intermediaries, and consumers themselves to gain an understanding of the prevalent texts, classificatory frameworks, and interpretive schemes that characterize technology production and consumption today in popular online social spaces. In addition to this focus, and in line with this dissertation's guiding research questions, we can also examine the ways in which these practices of signification are interwoven with different modes of interpretation and consumption that have been identified by consumption studies. As a meta-classificatory framework for this dissertation, these

modes of consumption may be understood as patterned ways of relating to cultural products that acknowledge the diversity of interpretation as a practice while at the same time direct our attention to common orientations, logics, and modes by which individuals and social groups relate to artefacts, others, and themselves.

The adoption of this typology will provide a means for the categorization of diverse data collected from texts and artefacts produced by diverse social actors as well as facilitate the identification of trends that will enhance our understanding of the phenomena under study and provide a starting point for discussion in subsequent chapters. In addition, the modes of consumption detailed in this section will provide a bridge to an examination of processes of technological obsolescence and an exploration of the ways in which different consumption modes may contribute to the shortening or expanding of object lifetimes.

In his review and analysis of consumption studies, and based on his own research into contemporary forms of consumption, Jansson (2001) identifies seven ideal types of consumption that provide a productive interpretive and analytical framework for this dissertation. As with all ideal types, elements of this topology are not likely to be found anywhere in their pure forms, but they nonetheless direct our attention to identifiable and distinct consumption modes, intentions, and logics. As Jansson (2001) suggests, the ethos of each ideal type may be understood as an overarching value principle that provides the basis for each consumption mode and its concomitant intentions and logics. It also governs the ways in which groups and individuals may apply different modes of consumption across different contexts and different objects. That is, all seven ideal types co-exist in contemporary consumer societies and may be understood as common value orientations that function as heuristics for consumption, provide order to the heterogeneity of the material environment, and supply a basis for collective forms of consumption. The remainder of this section will be devoted to briefly outlining Jansson's (2001) topology and each ideal type will be described by way of its corresponding consumption mode, intention, logic, and ethos.

Instrumental consumption: a mode of consumption that privileges the utilitarian gratification of physical and material needs using the most efficient means possible. It

emanates from an ethic that is historically rooted in the Protestant work ethic: primacy is granted to production, whereas consumption is not a desired practice. The goal of instrumental consumption is the optimization of use-value relative to exchange-value and it is ultimately anti-consumerist. In its extreme form it corresponds to an ascetic lifestyle.

Realistic hedonistic consumption: this mode of consumption corresponds to Campbell's (1987) traditional hedonism and operates according to an ethos of pleasure. Individuals strive to maximize bodily pleasures by taking into account previous experiences and engage in a calculus that compares potential joys against required efforts. This form of consumption is conservative in the sense that it does not lead to any ambition to try out new pleasures. Instead, the same kind of pleasures are sought out repeatedly in order to minimize the risk of failure. In its extreme form it may assume the form of an addiction.

Imaginative hedonistic consumption: this mode of consumption corresponds to Campbell's (1987) modern autonomous imaginative hedonism and is animated by a romantic ethos and a focus on the symbolic dimensions of goods. Here pleasure is sought via emotional and symbolic stimulation, enacted by way of day-dreaming and fantasy play focused on the potential sensations and joys associated with novel experiences or objects. Unlike the realistic hedonist, the imaginative hedonist pays little attention to past experiences and instead focuses on potential new sensations and possibilities which are explored in the imagination, a process that is a source of great pleasure. Taken to the extreme, this mode of consumption corresponds to a form of withdrawal from the realities of everyday life and perpetual daydreaming and fantasy play.

Reproductive consumption: in contrast to both forms of hedonistic consumption, the reproductive mode includes an expressive component that is guided by an ethos of self-expression. By way of reflection on one's identity, the goal of consumption is to communicate this inner self to others and to position oneself in sociocultural space. Depending on the identity that is to be reflected through consumption practice, different approaches may be adopted by individuals and groups as a means for self-expression.

For example, established upper classes may express their high social position by way of conspicuous consumption practices characterized by the wasting of time and resources (Veblen, 1899/1994).

Pretentious consumption: like reproductive consumption, this mode is also expressive, but expression is guided by a mobility ethos and a different kind of reflexivity. Individuals reflect upon and orient their consumption activities in ways that will enable them to move in sociocultural space, a process that entails a simultaneous consideration of who one is and who one desires to be. This second-order reflexivity requires not only an assessment of how others see oneself, but also an appreciation of how others may see oneself as someone else than how one experiences oneself to be. Sociocultural mobility by way of consumption may include traditional class-based aspirations as well as efforts directed towards the appropriation of lifestyle practices of desirable social groups or cultural communities. Unlike reproductive consumption, pretentious consumption entails a greater degree of risk and the possibility of social rejection.

Postmodern consumption: if reproductive consumption is guided by the expression of an existing identity and pretentious consumption is oriented towards the appropriation of a desirable identity, the postmodern mode of consumption may be understood as the avoidance of all fixed identities and a rejection of existing sociocultural positions and schemes of interpretation. The postmodern ethos of experimentation, alteration, and eclecticism orients individuals towards the ambiguous character of commodities and signifiers that enter consumption practices as resources for the creation of new and unexplored styles and object ensembles. As a third-order reflexivity, one considers the available sociocultural positions and reflects on how others might see oneself as someone who is not socially definable. This logic and process requires the avoidance of clear-cut stylistic ensembles, experimentation with new styles, and rapid abandonment of styles that become stabilized, identified, and adopted by others.

Progressive consumption: this mode of consumption is based on a progressive ethos that is anti-consumerist in orientation and is connected to the emergence of

negative consequences associated with consumption, including environmental harm, social inequality, and hyper-individualism. Although actual consumption practices may be instrumental, hedonistic, or expressive these orientations typically play a secondary role to progressive ideals that are today articulated by social movements such as environmentalism, veganism, and feminism, for example. As a result of the continued expansion of consumer society and its negative consequences, this mode of consumption has gained increased social and cultural relevance in affluent liberal societies.

Although the above descriptions generally refer to individuals, Jansson's (2001) topology may also be applied to social groups as a means of characterizing the consumption ethos and mode of a cultural community. For example, as a result of scarce economic resources, we could say that a lower class consumes instrumentally or that a middle class consumes pretentiously if its members imitate and mimic lifestyle practices of admired upper classes. In a similar way, a youth consumer tribe may be said to consume in a postmodern mode if it values innovative and experimental styles. Likewise, a local subculture could be characterized as consuming in a progressive mode if it gives primacy to environmental ideals as a basis for consumption.

As Jansson (2001) points out, all seven ideal types may be identified in contemporary consumer societies today, although rarely in their pure forms. Different modes of consumption characterize not only different cultural communities and people but also co-exist within social groups and individuals in various permutations and hierarchies across different contexts and objects. For example, young and urban consumers are more likely to consume and orient themselves to commodities by way of expressive modes than older and rural consumers who are more likely to be guided by an instrumental ethos. There are also material and symbolic differences across objects. Some objects offer greater potentials for pleasure while others are more symbolically loaded and more suitable for imaginative and expressive purposes (Jansson, 2001).

The spatial context may also play an important role, since physical and social settings provide their own affordances and constraints for the enactment of particular modes. For example, social settings are more conducive to expressive modes of

consumption than more isolated domestic settings (Jansson, 2001). Lastly, the temporal context, as discussed in the previous sections, may also play a role. At a sociocultural level, new values and meaning systems may emerge over time and blend with or oppose existing schemes of interpretation. At the individual level, the logics of consumption are in perpetual motion and interwoven with daily routines, schedules, and experiments. In addition, one's age, generation, or life-stage may influence one's consumption ethos and orientation to others and the world of consumer goods (Jansson, 2001).

Although it may be the case that people also often consume without any consideration of the consequences of their actions and are instead guided by convictions, impulses, and routines, Jansson (2001) argues that these taken-for-granted practices may nonetheless be described and analyzed in terms of their underlying consumption mode and ethos if we understand these taken-for-granted practices as sedimented forms of earlier decision-making processes or orientations. For example, there are many modern routines, from self-care to the organization of time, that emanate from the Protestant work ethic even though most people no longer consciously reflect on their significance or origins.

Methodology

Texts, Artefacts, and Media Hybrids

Having discussed the social and cultural significance of advertising and promotion, lifestyle media, and consumer tribalism in the second chapter and having situated the dynamics of production, consumption, and ecological harm within longer historical processes of reflexive modernity and risk society in the first chapter, this chapter has sought to delineate the nature of contemporary commodities, their relation to media culture, and the ways in which consumer goods are interwoven with practices of signification, interpretation, and appropriation in everyday life. Stated in the terms and concepts of this chapter, we can understand advertising and promotion, lifestyle media, and consumer tribalism as each contributing in their own distinct ways to the circulation of media texts, commodity-images, and intertextuality through ongoing practices of

signification and interpretation that are structured by an uneven distribution of economic, social, and cultural resources which circumscribe the realm of possibility and action within highly mediatized spaces facilitated by new media.

That is, the channels and means available to technology producers by way of advertising and promotion, including the creation and wide distribution of ads and promotional materials, far outweighs the resources of individual consumers and organized collectivities even if we acknowledge the democratic potentials of new media. While practically anyone may create online content today, it remains the case that producers and advertisers can still leverage their economic and media resources to ensure that much of the time their content is more widely distributed, consumed, and foregrounded than other content produced online. In a similar way, the density of intertextuality within and across producer promotion and lifestyle media ensures that many associations and links stay within a promotional vortex controlled by technology producers, advertisers, and media publishers. All of this being said, it is also the case that consumers engage with this content using a variety of means facilitated by online platforms that enable the creation of user-generated content, discussion, and response to content produced by both technology producers and lifestyle media authors.

Thus, while technology producers, marketers, and lifestyle media experts may create content online and attempt to position and signify goods in particular ways, these practices are increasingly interwoven with the hermeneutic praxis of consumers such that the resultant online texts are dynamic hybrids that often include a primary author (e.g. technology producer, lifestyle media expert) and a multitude of secondary authors (reader responses). How one approaches these texts is consequently determined not only by the sociocultural, situational, and temporal contexts of interpretation discussed in this chapter, but also by the extent to which one engages with this secondary authorship and its readings and the ways in which the resultant intertextuality is incorporated into one's reading.

Although the actual reading practices of dynamic online texts are not an explicit focus for this dissertation, they are relevant to the identified research questions to the extent that we wish to explore the media practices of technology producers, lifestyle

media, and consumers in online contexts. In the case of both producers and lifestyle experts, consumers have opportunities online to engage with the significations and interpretations of both of these actors and to contribute their own interpretations, experiences, and opinions to the media flow, in the process amplifying, contradicting, or diverting the efforts of advertisers and publishers.

Research Questions

In light of the discussion in this chapter, we can focus the dissertation research questions by incorporating Jansson's (2001) topology of consumption as a meta-framework to classify the activities of technology producers, lifestyle media experts, and consumers as well as explore their relation to the sociocultural mediation of obsolescence. Stated in another way, we can investigate the cultural practices of these social actors and examine how they draw upon, engage with, and encourage different modes of consumption and the ways in which these modes contribute to the shortening or extension of product lifetimes. Drawing together these themes, this dissertation will seek to answer the following research questions.

Advertising and Promotion

Within the context of online promotion by smartphone manufacturers:

- How are smartphones advertised?
- What thematic relations between commodities, people, and settings are suggested?
- Which cultural categories are drawn upon? How are they modified and re-worked?
- How are smartphones promotionally designed?
- How do smartphones circulate as objects that promote themselves?
- What is the nature of intertextuality across advertising, promotion, and commodities?
- What texts, facts, and artefacts are associated with smartphones? What are the intended effects?
- Which consumption modes are drawn upon and encouraged?

Lifestyle, Media, and Expertise

Within the context of online lifestyle media specializing in consumer electronics:

- How are smartphones promoted?
- What types of content formats are published? In what proportions?
- How are smartphones interwoven with lifestyles?
- What skills, knowledges, and dispositions are being offered?
- What forms of cultural capital and expertise are drawn upon by publishers?
- What is the nature of promotional intertextuality across lifestyle media content?
- What texts, facts, and artefacts are associated with smartphones? What are the intended effects?
- Which consumption modes are drawn upon and encouraged?

Consumer Tribalism

Within the context of consumer tribalism facilitated by online media:

- How do consumers accept, modify, or resist meanings suggested by producers?
- How do consumers accept, modify, or resist meanings suggested by lifestyle media?
- What new meanings and enthusiasms do consumers put into circulation?
- What thematic conflicts characterize tribal communication?
- How do consumers contribute to the online promotional circuit?
- What forms of cultural capital and expertise do consumers draw upon?
- What texts, facts, and artefacts are associated with smartphones? What are the intended effects?
- Which consumption modes are drawn upon and encouraged by consumers?

Technology Obsolescence

How is smartphone obsolescence mediated by advertising and promotion, lifestyle media, and consumer tribalism?

Expected Contributions

The dissertation will contribute to our knowledge about communication, culture, and consumption as well as provide empirical analysis that will be of interest to researchers, policymakers, and non-governmental organizations engaged with technology production, consumption, and sustainable development. This contribution will inform our understanding of the social and cultural mediation of consumption and the ways in which this mediation is related to the obsolescence of technology. Both of these contributions are situated with respect to the mediatization of consumption by new media, with emphasis on the online media practices of smartphone manufacturers, technology experts, and active consumers.

More specifically, the dissertation will inform our understanding of advertising strategies employed by manufacturers and the ways in which the affordances of new media are being employed by producers to promote smartphone adoption and device replacement. The dissertation will investigate the ways in which producers attempt to position this increasingly ubiquitous information and communication technology in relation to existing sociocultural practices. In addition, the undertaken research will examine the ways in which manufacturers attempt to establish new cultural orientations and social practices centred around mobile applications and services.

Secondly, the dissertation will contribute to our understanding of the mediation of consumption by lifestyle media and the role played by consumption experts in contemporary consumer societies characterized by intensified information, communication, and commodity flows. The research will investigate the nature of the skills and knowledges circulated online by technology experts and the ways that these forms of expertise amplify, contradict, and transform the promotional strategies of manufacturers. The dissertation will examine the narrative frameworks adopted by publishers and the ways in which expert discourses position technology in relation to people's everyday lives. The research will also investigate the manner in which technology experts attempt to legitimate particular orientations to and engagements with technology in their privileged role as models of good consumption.

Thirdly, to the extent that consumers increasingly turn to new media to explore, learn about, and socialize with others around products, the dissertation will examine the media practices of consumers and inform our understanding of online consumer behaviour in contemporary consumer societies. In particular, the dissertation will investigate the ways in which consumers circulate experiences, interpretations, and forms of expertise about technology and consumption and the manner in which these are interwoven with the content flows of manufacturers and technology experts. In so doing, the dissertation will contribute to our understanding of consumer engagement with networked participatory media, which has become increasingly pervasive and has been publicly celebrated for its distinct affordances of accessibility, interactivity, and reach.

Lastly, the dissertation will analyze these aggregate online media practices in relation to obsolescence and consider how manufacturers, publishers, and consumers contribute to rapid rates of technology production, consumption, and disposal that is responsible for unsustainable resource use, energy-intensive manufacturing, and environmental harm. The dissertation will thus contribute to our understanding of the social and cultural mediation of obsolescence and the roles played by different social actors in this process. Equally importantly, the dissertation will examine how the activities of these social actors are interwoven and will illustrate the ways in which producers, lifestyle experts, and consumers support and undermine each other with respect to technology consumption.

With respect to disciplinary approaches, the dissertation will contribute to our knowledge and understanding in the following disciplines and fields of study.

- Media and communication studies:
    - Advertising and promotion
    - Participatory media
    - Online sociability

- Consumption and cultural studies:
    - Lifestyle media
    - Consumption expertise
    - Consumer tribalism

- Science and technology studies:
  - Promotional design
  - Technology obsolescence
  - Sustainable production

Rationale and Justification

The following methodology will provide a further refinement of the dissertation research via the selection of methods and data appropriate for addressing the proposed research questions. The discussion will begin with a summary of the decisions undertaken to delineate bounds for the study given the identified goals and the constraints of available time and resources. This will include a detailed review of the selection criteria adopted given these requirements as well as the identification of a research sample that is well suited to the dissertation's focus and questions.

To begin with, the number of smartphone manufacturers that will be considered will be reduced to only the largest producers as gauged by market share and consumer adoption. Although some breadth will be sacrificed as a result of this criteria, given that the majority of smartphones consumed today in North America are produced by only a small handful of manufacturers, the trade-off can be justified in terms of available time and resources for the completion of the study. This smaller sample of manufacturers, however, can be examined in greater depth than would be possible with a larger sample that included smaller producers.

Given this core sample of manufacturers, their official website advertising and promotion will be examined. Despite the increased use of social media for promotion as well as advertising via third-party retail websites and banner ads, for the purposes of this dissertation only manufacturer website promotion will be considered, since third-party retail websites replicate aspects of manufacturer website advertising and both social media and banner promotion are typically part of larger marketing campaigns whose aim is to stimulate interest and draw consumers towards the producer's website. This imposed limitation will reduce the amount of data that will need to be analyzed without

sacrificing the depth of the analysis, although some breadth will be lost via the exclusion of these secondary promotional sources.

In a similar way, and by way of an analogous justification, the number of technology media publishers that will be examined will be reduced by focusing on only the most popular publishers, as measured by publishing activity and available readership statistics. Given the limited availability of time and resources, this focus will provide a concrete sample for in-depth research of the most widely available and consumed content at the sacrifice of omitting less popular, possibly more niche-oriented technology lifestyle publications. Within this subset of publishers, analyzed material will be limited through a focus on only content devoted to smartphones.

Since all technology lifestyle websites are designed to enable reader discussions across published content, user-created content will also be examined. Given the popularity of online discussions and the volume of user-generated content, the sample of examined discussions will also be limited to reduce the time and resources required for analysis. Although manufacturer websites typically include online forums that enable user discussion and interaction, a preliminary survey of these forums suggests that much of this user-created content is technical support and product troubleshooting. Although it may be interesting from the perspective of volunteer labour, it is not relevant to the identified research questions and will not be considered as part of the study.

Data Selection

Based on the above rationale and justification, the proposed dissertation research will examine the online advertising and promotional practices of the following smartphone producers: Apple, Samsung, and BlackBerry (formerly Research in Motion). The selection of these manufacturers is based on U.S. smartphone subscription data available as of December 2012 (ComScore, 2013). Today, Apple and Samsung are the world's largest smartphone manufacturers and together account for the large majority of smartphone products by market share in North America. Recent sales figures indicate that together Apple and Samsung account for over 70% of all smartphone ownership in the U.S. (NPD Group, 2014). Although BlackBerry has in recent years lost much of its

market share to other manufacturers, it will be included in this study because in Canada the BlackBerry continues to represent the 3rd most popular smartphone platform after Apple's iOS and Google's Android platforms (comScore, 2013). It is also the only Canadian smartphone manufacturer in the world and is of interest to a Canadian audience.

For each manufacturer, the official company website will be examined with respect to advertising and promotional content for smartphone products. Although all manufacturers offer multiple smartphone models, the research will focus on each manufacturer's "flagship" or premier smartphone product. The research will thus examine Apple's iPhone 5, Samsung's Galaxy S4, and BlackBerry's Z10 smartphones. Current U.S. ownership statistics indicate that Apple's iPhone and Samsung's Galaxy product lines represent the most popular smartphone models, which include (in order of popularity) the iPhone 5, Galaxy S3, iPhone 4S, iPhone 4, and Galaxy S2 (NPD Group, 2012).

Flagship models also correspond to the greatest investment of promotional expenditure and are advertised more widely and broadly than lower cost and lower profit models. Equally importantly, and related to this concentration of effort, flagship models generally have more cultural relevance than other models. Online and offline advertising, news coverage, and consumer enthusiasm is more concentrated around flagship models than lower cost models. Samsung's Galaxy S4 launch event, for example, was broadcast live in Times Square and streamed via YouTube to almost 500,000 viewers worldwide (Milian, 2013). Recent budget figures indicate that Samsung spends approximately (USD) $400M to market its mobile phones, whereas Apple spends approximately (USD) $330M (Milian, 2013).

In terms of technology media, the dissertation will examine a subset of publishers based on a number of criteria. Of interest to this study are publishers that publish original content, are popular with readers, and include articles that feature smartphones. In order to gauge the extent and relevance of original content, *Techmeme's* "Leaderboard" list (2013) of technology media publishers was used as a starting point to narrow the field of possible publishers. The listing includes technology media sites that contribute the most

headlines to the technology media aggregator's front page and may be understood as a general gauge of the frequency and relevance of published content to audiences interested in technology. Although publishers such as *Reuters* and the *Wall Street Journal* typically appear near the top of the *Techmeme* list, for the purposes of this study publishers that specialize in technology lifestyle and product news and reviews were selected in favour of more general publishers that focus on the technology industry.

Based on this criteria, the research will focus on the following technology media publishers: *Ars Technica*, *The Verge*, and *Engadget*. All three publishers are ranked among the top 10 technology sites in the *Techmeme* ranking, include a strong focus on consumer electronics and smartphones, and have large readerships as reflected by social media statistics. As of this writing, *Ars Technica* has 800K followers on Google+ and over 600K followers on Twitter; *The Verge* has 500K followers on Google+ and over 200K followers on Twitter; and *Engadget* has over 700K followers on Google+ and over 600K followers on Twitter. These metrics suggest that all three publishers enjoy wide popularity online as sources of news, opinion, and expertise and that published content is likely to appear at the top of search results for product news, reviews, and information. In addition, to further limit the data under consideration, only content that has been published in a three month period (January 1 to March 31, 2013) will be examined as part of the proposed research to reduce the time required for analysis.

In order to investigate consumer discussions and interactions, reader comments that correspond to published articles will also be examined. We can expect that consumers who are enthusiastic about technology in general or specific products and brands in particular will follow online the activities of manufacturers and consume technology media with some regularity. More broadly, this ritual consumption of online technology content may be understood as a defining characteristic of high-tech tribes, where members enthusiastically follow industry and product developments, are passionate about particular brands and products, and contribute opinions and analysis to online discussions as a form of collective negotiation of meaning, sentiment, and intelligence that interweaves with official content published by manufacturers and technology experts.

Research Methods

The general approach that will be undertaken with respect to method will be interpretive and inductive with the goal of identifying themes and patterns, on the one hand, and exploring select themes in depth, on the other. The data will consist of manufacturer-created promotional content, technology media content, and consumer-generated discussions. Where applicable, content analysis will be used in two phases: first, to identify emergent themes; and second, to code the selected data based on identified themes. Given that the nature of the data will vary across research sub-areas, the content analysis will be adapted as necessary to meaningfully identify emergent themes. For example, for the analysis of manufacturer advertising, discrete blocks of content can be categorized based on the primary focus of the content. Likewise, technology media articles can be identified based on the primary focus of the article, which will span product reviews, opinions, and news.

This high-level content analysis will be complemented with a lower-level discourse analysis to provide depth to the content analysis and to explore in greater detail select themes that will be identified in the course of the study. As with the content analysis, the discourse analysis will be adapted to each research sub-area to enable exploration of different forms of content. For example, in the case of manufacturer advertising, the analysis will entail an examination of product pages and ads, whereas in the case of technology media reviews, for instance, the nature and structure of article content may provide a source of focus. Taken together, the complement of content and discourse analysis will provide a good basis for the identification and analysis of general trends and patterns while at the same time will facilitate more detailed examination and discussion of specific themes and topic areas.

Conclusion

Taking as its starting point themes from the previous chapter, this chapter has sought to consider in greater depth the relation between texts and artefacts as a means of understanding the nature of commodities and their consumption in contemporary consumer societies. This has entailed a further elaboration of promotion by way of an

account of media culture in a broad sense and the ways in which it contributes to and draws upon commodity imaging. Image culture entails a deepening integration and connectedness of media images and imaged commodities, which increasingly draw on each other as cultural resources. Today, the consumption of goods is shaped by pervasive media texts that position commodities in particular ways through narratives, settings, and characters that engage with material culture. One effect of this integration is an intensified cultural flow whereby everyday life in contemporary consumer societies is increasingly experienced as a continuous stream of images spanning media texts, advertising and promotion, and commodities that leads to a blurring of boundaries between images and imaged commodities.

The relation between texts and artefacts was also further expanded through a consideration of theoretical and empirical contributions from the sociology of technology and actor-network theory. The interrelation of texts and commodities may be generalized by way of an ontological claim about the nature of artefacts, which are understood as ensembles of heterogeneous elements that include texts, facts, and other artefacts. Understood in this way, media texts are one type of text that co-exists alongside other texts that perform work on behalf of the ensemble, including the texts of production and design as well as texts that mediate facts and associations between artefacts. Given this conceptualization, the development of artefacts requires that technology producers engage in heterogeneous engineering in order to successfully associate diverse nonhuman and human elements into stable ensembles. Texts may be used to translate producer interests into those of consumers and facts and artefacts may be deployed to ensure that indifferent consumers remain faithful to an artefact and contribute to the network's extension and stability.

This model of technology development and consumption opens up investigation and analysis to the full diversity of elements and associations that may contribute to the constitution of a particular artefact and the processes of linking, transformation, and circulation required to establish and stabilize these associations. Understood with respect to advertising and promotion, lifestyle media, and consumer tribalism, actor-network theory draws our attention to the full range of texts and elements circulated by producers, lifestyle experts, and consumers. In addition to the texts of advertising and

promotion, producers also create and make use of other texts as well as facts and artefacts as cultural resources and as durable elements that may be deployed to stabilize their technologies. In a similar way, lifestyle experts not only create and distribute texts and facts, but also draw on external texts, facts, and artefacts in their circulation of skills and consumption practices, a cultural alchemy that combines diverse sources and which may support or undermine producers and consumers. Likewise, consumers create their own texts, facts, and artefacts via collective forms of intelligence and expertise and contribute to the circulation of skills, knowledges, and practices in ways that may amplify, transform, or contradict the flows of producers and media publishers.

Moving from considerations of signification and heterogeneous association, the chapter also examined the interpretation of artefacts constituted by diverse social actors and dense webs of intertextuality. As existing theory and research demonstrates, interpretation may be understood as a complex and unstable process that is not only structured by the economic and social situatedness of consumers and their cultural memberships, adherence to interpretive frameworks, and creativity, but also depends on the intertextual context of artefacts as well as their situational contexts and their temporal, spatial, and material specificities. Moreover, cultural membership does not necessarily imply cultural homogeneity. The existence of shared frameworks of interpretation does not imply the absence of variability and difference, since members may adhere to varying degrees to shared schemes based on their relation to the community. Interpretive schemes may also contradict each other leading to intra-group, inter-group and internal conflict. In addition, these contextual factors change over time with respect to cultural communities, individuals, and artefacts. Although they may begin their lives as generic commodities, artefacts enter people's lives for a time as meaningful objects before undergoing further cultural transformations that sometimes render them with deeper significance, but which more often than not strip them of their value and relevance and in so doing channel them towards dispossession and disposal.

As this chapter has illustrated, interpretation and consumption are complex processes that are dependent on many contextual and individual factors. Although in principle the diversity of readings of texts and artefacts is infinite, in practice the

existence of shared interpretive frameworks is a testament to some common basis and order among otherwise different individuals that makes possible communication and collective cultural life. Within consumption studies, theoretical and empirical work has identified a number of common orientations to goods and their consumption that provide a productive typology for this dissertation as a means for classifying this diversity. This typology was used to elaborate the dissertation research questions, which were presented in the final section of this chapter alongside the dissertation's methodology and expected contributions. The subsequent two chapters present the dissertation research findings, which are then discussed in relation to the dissertation's theoretical framework and goals in the final chapter.

Chapter 4.

Signifying the Smartphone:
Manufacturer Advertising and Promotion

Introduction

Having elaborated a theoretical framework as a basis for this dissertation's research questions and methodology, this chapter presents the first part of the dissertation's research findings based on a content and discourse analysis of manufacturer online advertising and promotion. The subsequent chapter presents the second part of the research findings, devoted to an examination of technology media publishing and consumer engagement and sociability centred around manufacturer and technology media promotion.

The chapter begins with a detailed summary of the online media practices of Apple, Samsung, and BlackBerry by way of a focus on the iPhone 5, Samsung Galaxy S4, and BlackBerry Z10 smartphones and the ways in which these are promoted online. The results of this content analysis are followed by a detailed description of the promotional strategies and cultural themes that were identified as part of the undertaken discourse analysis. The chapter then turns to examine the ways in which smartphone manufacturers construct and deploy facts, translate interests, and attempt to associate artefacts in the service of promotion and technology consumption. The chapter concludes with an analysis of the interrelation between these promotional strategies, modes of consumption that may be adopted by consumers, and the ways in which these strategies and dynamics may facilitate intensified consumption, product replacement, and obsolescence.

Promotional Context

Website advertising for the examined smartphone products was situated within a manufacturer controlled and managed online promotional space that also included advertising for other products and related accessories and brands. As the primary publisher and distributor of this promotional content, each manufacturer made available to readers text, images, audio, and video content that was easily accessible via the website for reading, browsing, and repeat consumption. The resulting promotional space enabled readers to navigate across and within products, search for information, interact with existing consumers, and engage with product content and imagery.

Unlike Samsung and BlackBerry, Apple made almost exclusive use of its website to publish in-depth advertising and promotional content for its smartphone. This material included dynamic and interactive textual and visual content as well as promotional videos, including television ads that could be repeatedly consumed via its website. Some videos were also distributed via YouTube, but user comments were disabled and prohibited. In contrast, both Samsung and BlackBerry used their respective websites to publish promotional content that was often supplemented with videos that were published on YouTube, where viewers could rate, comment on, and discuss the content. Although these divergences in promotional strategy will not be discussed at length here, they do point to differences in how manufacturers relate to collective consumer sentiment. Apple also disabled consumer reviews for its smartphone products on its website even though it did include them for third-party accessories. In contrast, Samsung foregrounded consumer smartphone reviews in its website advertising.

In addition, initial publication of website advertising for a particular smartphone model was preceded by a promotional spectacle that constituted the "official release" of the device by way of a well-publicized keynote presentation at an annual industry trade show or at a self-created "launch event." This event, in turn, was preceded by widespread technology news media coverage that was often accompanied by speculation, analysis, and anticipation. Promotional events were large media spectacles that were well-attended by industry press and streamed live to online viewers who could attend the event virtually via the web. Commercial media artists and celebrities were

also present at some events to both promote themselves and the newly released products. The resulting promotional photos were then circulated online via the manufacturer's website as part of the phone's public promotional package, made available to industry press and technology news publishers, who provided post-event coverage, analysis, and commentary. In this respect, website advertising for a given smartphone model was preceded by other promotional activities intended to inform consumers of its upcoming release and to increase traffic to the manufacturer's website, where readers could explore newly released products and engage with promotional content.

Smartphone Advertising and Promotion

To appreciate the nature and scale of manufacturer advertising efforts for smartphone products, we can begin by looking at an advertising base case, a smartphone ad published by an individual via an online classified site such as *Craigslist*. A typical ad for a used smartphone includes information about the device being offered for sale, including the manufacturer, model, specifications, and price. In general, the ad works with an assumption that interested consumers know what the object is and how it works. The ad operates on the basis of a shared cultural understanding about smartphones, what they are, and how one goes about using them. The ad comprises a single page, includes 50 to 100 words, and is often accompanied by a few photos taken by the owner to illustrate the phone's physical condition. On the whole, the ad corresponds to a low rhetorical effort and operates by way of an informational frame that primarily lists details and specifications about the device.

If we compare this base case to the website advertising of manufacturers, clear differences may be observed. To begin with, even for a single smartphone model, a model that typically already has a predecessor and will soon have a successor, and which already enjoys popular recognition as a particular type of device, manufacturer advertising is characterized by a high rhetorical effort that includes the publication of many pages of text and the circulation of hundreds of images of the device. Although mobile phones may be ubiquitous today, producer advertising nonetheless continues to actively signify the technology by drawing on cultural categories to encourage particular

ways of relating to devices, others, and the world. Manufacturers prescribe particular activities and social interactions that draw on existing cultural and social practices and in so doing attempt to build on, extend, and amplify these practices in ways that encourage smartphone use and consumption.

In the following discussion, the term *content block* will be used to refer to a primary unit of analysis that corresponds to advertising content that is relatively self-enclosed on website pages and which as an aggregate constitutes the most frequently used component of website promotion. That is, manufacturer website advertising was organized into distinct pages devoted to a smartphone model, which in turn were structured via self-enclosed yet interrelated blocks of content that typically included text and visual imagery. In this respect, content blocks may be understood as miniature ads that are linked via co-presence, page organization, and stylistic forms of intertextuality.

If we examine only the primary website advertising of the manufacturers considered for this study, we can appreciate the magnitude of rhetorical effort and the ways in which producer websites are mobilized as a promotional medium. With respect to the Galaxy S4 smartphone, Samsung published a total of 56 content blocks and 58 images on its global website devoted to the model, spanning 2369 words (equivalent to over 4 single-spaced pages). BlackBerry, in its promotion of the Z10 smartphone via its regional website, published 66 blocks of content and 75 images, spanning 3059 words (equivalent to approx. 6 single-spaced pages). And Apple, in its advertising of the iPhone 5, used its website to publish 160 blocks of content and 156 images, spanning a total of 13663 words (equivalent to over 27 pages of single-spaced text); more advertising text and imaging than that of Samsung and BlackBerry combined.

In each case manufacturers devoted multiple pages on their websites to advertise their respective phones, which were signified in terms of a constellation of thematically organized content blocks that directed reader attention to particular aspects of the device and its relation to the manufacturer, user, and social setting, as well as its relation to other goods, consumption, and daily life more generally. This content summary does not include figures or icons or any of the additional supplementary material that was also published by manufacturers to further promote their products via

their respective websites, including product-related articles, instruction guides, and promotional videos.

Across all of the analyzed images (n=289), there were a total of 322 smartphones that were visible, typically with one smartphone included per image. Some images included multiple phones, often presented from different perspectives or simply duplicated into a side-by-side array. Although Samsung made use of background imagery some of the time as a means of situating its smartphone in recognizable social settings (e.g. coffee shop, household), the large majority (241) of all images (n=289) did not make use of any background imagery. Instead, the smartphone itself was often front and centre in most images, set against a blank and empty backdrop that did not include people, places, or recognizable social settings.

In addition to prominently visible smartphones, images (n=289) also included phone accessories (72), such as earphones and speakers, for example, branded consumer electronics produced by the manufacturer (43), such as tablets and laptops, for example, and other products manufactured by third-parties (11), such as television sets, for example. Relative to Samsung and BlackBerry, however, Apple's advertising was responsible for the large majority (41) of images of branded electronics (n=43), which were often displayed alongside the smartphone and included Apple's tablet, laptop, and television accessory products. These images positioned the iPhone as a member of a larger family of goods with a shared parentage.

Of the total number of images (n=289) that were examined, the majority were static (208), although dynamic images (81) were also used by manufacturers. In the case of dynamic images (n=81), the phone screen was often animated using short and repetitive sequences of images to simulate phone operation. For example, using the smartphone screen as a frame, Apple included short animations on screen that visually demonstrated a particular function or provided a glimpse of the workings of a particular application. Similarly, Samsung made use of the phone screen alongside an animated hand gesture to demonstrate both the gesture and the phone's response to the gesture.

With respect to imagery inscribed within actual smartphone screens, of the total phone images analyzed (n=322) the large majority included user interface elements

(245) and images of people (210). Although references to the natural world (48), public spaces (19), landmarks (15), and domestic settings (10) were also present, they were much less frequent. When user interface elements were visible (n=245), these mainly corresponded to the phone's operating system (59), communication tools (43), utilities (22), photo applications (22), music applications (22), video applications (20), voice control (16), and application management (14). With respect to imagery of people (n=210), there were slightly more women (76) and children (76) depicted than men (58).

At this level of analysis, we can see that manufacturer advertising is primarily centred around the image of the device itself, which is often isolated, presented without any background imagery, and positioned using multiple perspectives and angles. Moreover, the phone image dominated the composition of content blocks and advertising pages. The smartphone is thus presented as an object that should be appreciated visually; an artefact that should be seen first and foremost. It is also a device that was imaged as dynamic and alive and readers were invited to glean glimpses of its activity and action.

Although there was little in the way of background imagery, phones themselves were inscribed with images of interfaces and people and at times the natural world and recognizable urban and domestic settings. This inscribed imagery contributes to the phone's signification as a device that is a window and a gateway to an active personal, social, and family life. In addition, other imagery positioned the smartphone simultaneously as a camera, television set, and personal stereo, an object intended for the production and consumption of images, videos, and music. Although there were some references to documents, books, and games that suggest different orientations for both users and smartphones, they appeared less frequently and less prominently than these more primary clusters of imagery.

Across all three smartphone manufacturers considered for this study, website advertising was organized by way of discursive frames of learning, exploration, and discovery as opposed to more direct or succinct approaches. Smartphone advertising was presented as an opportunity to learn about and explore a particular product, a frame whereby the manufacturer took on the role of teacher and educator and the consumer

was positioned as an interested and engaged learner and student. This frame may be understood as a form of communication that strives to appear neutral and transparent, oriented towards the transmission and sharing of information and knowledge. In turn, the smartphone is constituted as an artefact that one needs to learn about, come to know, and appreciate, a process that is guided by a well-intentioned and knowledgeable expert. Rather than a common object that requires no explanation, the smartphone is constituted as a somewhat mysterious artefact that requires ongoing learning and education as new generations of products supersede past models.

Content was typically organized using a drill-down structure whereby high-level overviews were complemented by additional web pages and page segments that provided additional information and detail. This hierarchy of content can accommodate readers with variable technology literacy and knowledge levels as well as readers with limited time and attention. Unlike a single linear page of traditional advertising, this content organization also supports and encourages self-directed exploration of pages and bestows upon readers a measure of autonomy and control that is nonetheless circumscribed within a structure of revelation and concealment that is fully controlled by the manufacturer.

Like overview pages and content blocks, in-depth pages and sub-modules were comprised of text, static and dynamic images, figures, icons, and online videos, which included instructional demonstrations and television ads as well as use-case scenarios, interviews, and other promotional content. Large headline captions and text blocks were accompanied by large images in a highly stylized format that resembled an ever-expanding, glossy pamphlet. Content was thematically organized around device attributes and features, spanning hardware components, operating system functions, applications, and network platforms and their respective points of integration. Readers were invited to "learn about," "discover," and "explore" the smartphone as an artefact with many affordances that required learning and education.

Signifying the Smartphone: Themes and Narratives

At the outset, identified themes and narratives are presented in alphabetical order as standalone descriptions that may be appreciated in terms of their richness and potential as cultural resources. The remainder of the chapter will consider these themes as part of an aggregate totality in relation to consumer interests, modes of consumption, and smartphone design. The chapter will then conclude with an examination of the ways in which manufacturer promotional strategies are mobilized in the service of product obsolescence. The following table provides a summary of identified themes and narratives.

Table 4.1   Manufacturer Advertising Themes and Narratives

Theme	Description
Art	Object of art and canvas for content
Amplification	Translates small actions into large effects
Companion	Adapts to and anticipates needs
Control	Control of technologies, environments, and symbolic flows
Creativity	Supports creative production, distribution, and consumption
Easy	Easy to purchase, operate, and manage
Entertainment	Enables diverse commercial media consumption
Exclusive	Superior relative to other artefacts
Fun	Essential to modern, joyful living
Magic	Defies natural laws and logics
More	Gateway to abundance and unrealized possibility
Natural	Vital, intuitive, and dynamic
Power and Speed	Responsive regardless of task demands
Progress	Achievement and improvement relative to past models
Re-Living Everyday	Essential to mediation and archiving of everyday life
Revolutionary	Unlike anything that preceded it
Scientific Wonder	High achievement of technoscience
Secure	Safe and protected from threats
Sentiment	Object of collective admiration
Social	Enhances existing and new modes of sociability
Utility	Expands capacity for action
Work	Distanced from office and educational contexts
You-Centred	Personalized to distinct tastes and preferences

The following sections describe in detail the themes and narratives that were identified by the discourse and semiotic analysis of manufacturer website advertising.

Art

> Every detail and every material ... has been meticulously considered and refined. (Apple, 2013j)

> When something is designed to work beautifully, it tends to look that way, too. (Apple, 2013b)

> A high-quality display that provides the perfect picture every time ... (Samsung, 2013j)

The space of website advertising may be compared to a museum, showroom, or interactive science exhibit that is designed to simultaneously inform, engage, and inspire through a particular organization of content that elevates objects to the status of art – objects that demand inquisitiveness, curiosity, and immersion. Here the exhibit is devoted to showcasing the work of the manufacturer, who is at once the artist and expert guide to his artwork. As a practitioner of modern, industrial arts and crafts, the manufacturer is constituted as an artisan who devotes much attention to workmanship and detail in his interweaving of production skills, knowledge, and aesthetics in the manufacture of artefacts that are at once instrumental and beautiful.

Unlike online and offline retail spaces that are populated by a multitude of different products by different manufacturers, and where the visitor may be distracted or drawn towards other goods, the online manufacturer exhibit space is devoted to a single primary artwork and an array of secondary accessories that complement it. The visitor is encouraged to explore the exhibit and is granted the autonomy to explore different rooms at her own pace. Individual areas draw her attention to particular aspects of the artefact and the manufacturer as expert guide is always present, continually speaking, foregrounding details and considerations that may otherwise be overlooked or not considered. Although the visitor is free to wander in this space, the exhibit is a highly structured space where each room is carefully constructed and all of the hallways have been considered and predefined. Likewise, specific details have been strategically selected in the service of engagement and admiration. Like all good art, the exhibit

strives to immerse its audience and demands a temporary suspension of disbelief: this is not an ordinary object; the artefact on display is extra-ordinary.

The exhibit visitor is invited to repeatedly view and consider the showcased artefact, which is constituted as a modern industrial sculpture, presented against blank walls and backdrops, elevated by invisible stands and displays, and photographed in detail from multiple perspectives. Like marble sculpture or fine pottery, smartphones are shiny and polished, reflecting light and inviting the viewer's gaze. Phone images are large, occupy the centre of focus, and span much of the available space on the page. Phones are typically scaled beyond their actual size relative to people, settings, and other objects and are presented in high resolution, with sharp focus and much visual detail. Interactive image galleries enable readers to rotate virtual phones, magnify image details, change perspectives of view, alter phone colours, and download phone images for repeat and later viewing. Interactive pages facilitate manipulation of dynamic images, enabling readers to start, stop, and replay animations. Links provide a means of movement within layers of content and across pages.

In addition, the smartphone is also positioned as a frame for art, a medium that enables the sensual experience of images, videos, and music. Here, the phone display is often the centre of attention as a component part that is crafted or applied by the manufacturer in the service of achieving pixel perfection, an ideal of clarity, colour, and the transparent reproduction of reality in digital form. As picture frame, television set, and cinema screen the phone display facilitates the pleasurable experience of visual beauty. A one-to-one correspondence is established between the quality of the display and the quality of available experience. If art, beauty, and pleasure are to be realized, a certain kind of display is required without which experience will be hindered and compromised.

Amplification

Stay in touch with a single swipe. (BlackBerry, 2013e)

[U]se your voice to send messages, schedule meetings, place calls, set reminders, and more. (Apple, 2013j)

Smart Scroll knows when your eyes reach the bottom of a page and automatically scrolls for you. (Samsung, 2013h)

With smartphones, small human actions can produce large nonhuman effects (relatively speaking). For example, with a swipe on the screen and a single touch, users can enact many device transformations such as wireless linking to other artefacts, connecting to global communication networks, or uploading content to servers located on other continents. Similarly, simple voice instructions may be used to control the device and execute commands that are either local to the phone, such as playing music or adding events to a calendar, or which interact with global communication, artefact, and software networks to retrieve or update information. Likewise, photo-realistic maps may be controlled with simple hand gestures to enable users to virtually fly over large spans of geography. In each case, relatively small human action sequences initiate a ripple effect that traverses and at times modifies long networks and large ensembles of nonhuman elements. Searching for information online by way of a voice command not only affects the immediate device that initiates the search command, but also traverses data networks, servers, databases, and files in an almost instantaneous circuit of human and nonhuman action.

In some respects, this is not new and we can observe similar patterns with networked personal computers. Yet with desktop computing there is a larger distance between human action and nonhuman effects: a keyboard and mouse provide an interface that enables human manipulation of nonhuman elements by proxy, since the computer itself is not touched directly. Instead, the mouse and keyboard function as a grammar of translation between human touch and nonhuman action. In contrast, touch interfaces shorten this distance. Smartphones enable users to directly manipulate phone controls and applications in ways that are more like past mechanical and analogue technologies.

Manufacturers foregrounded this amplification of action in their online advertising by way of touch interfaces, voice control, and non-touch methods for controlling phones and executing commands. In some cases, human action has been even further reduced. For example, Samsung recently introduced a mechanism whereby users can control media and scroll pages of text using their eyes and the direction of their gaze. As a user reads content their eyes are tracked by the front-facing camera to detect their reading

progress and to advance the page. In this case, even touch has been eliminated and control has been reduced to the minuscule movements of the eye.

Companion

> [Y]ou develop a connection with it. It becomes more to you than just a device. (Apple, 2013b)

> A new experience where features and apps work together seamlessly and share your train of thought ... (BlackBerry, 2013a)

> [I]t cares enough to monitor our health and well-being. (Samsung, 2013c)

According to manufacturers, a smartphone is more than just an object, it is a device that is not only designed around its users, but also adapts to meet user needs. On the one hand, this can be read as a descriptive claim that attests to the artificial intelligence that is increasingly being incorporated into smartphone software. On the other hand, it can be understood as a prescriptive statement about users' relationship with their devices, a relationship that should advance beyond mere utility and should entail a deeper connection with technology. A particular relation is idealized here, modeled after the parent-child relationship, where the device is said to strive to meet user needs and to care for users, expressed by way of its monitoring of user activities, adjusting to user behaviours, and by being there for users through its mere presence.

Smartphones increasingly monitor user actions in the background and learn from user behaviours. For example, repeat typing mistakes may be recorded such that future keyboard input can be adjusted to reduce the frequency of commonly mistyped words. Likewise, social media activity may be tracked to establish repeat communication patterns as a means of increasing the efficiency of future interactions. In a similar way, camera activity and geo-location information may be monitored in order to identify clusters of photos and videos and to detect travel. Users may then be presented with automatically generated photo albums in anticipation of future content sorting, archiving, and sharing.

This increasingly pervasive artificial intelligence is today positioned by manufacturers alongside voice interfaces that operate within a master/servant framework of control and command. Here, the companion does not so much anticipate user actions, as awaits user commands and queries, performs the assigned tasks, and presents results and responses using a human voice. Interaction between user and device is modeled on human communication, but the Other is a companion servant who does not act on his own, but simply waits for commands. Thus companionship is constituted using both sides of the parent-child relationship. On the one hand, the device is said to anticipate and adapt to user needs, while on the other, it is presented as a faithful and obedient child that does what it is told.

Control

Movies & TV in the palm of your hand. (BlackBerry, 2013c)

Call a friend, answer the phone, preview emails and control videos without even touching the phone. (Samsung, 2013e)

[Q]uick access to the controls and apps you always seem to need right this second. (Apple, 2013c)

Smartphones are constituted by manufacturers as devices for the exercise of control. This theme spans device features, including control over phone applications, utilities, and settings as well as how the device is configured, aesthetically personalized, and used. These dimensions span both smartphone hardware (components, connectivity, accessories) and software at both the operating system (configuration, functions) and application level (configuration, functions, content).

Although control was limited on early mobile phones by a relatively static user interface and a small selection of applications to extend the functionality of devices, manufacturer development of dynamic multi-touch interfaces and application markets has expanded the range of options available to users. This development continues today in the form of new modalities for how control is exercised and includes the addition of non-touch proximity gestures, voice control, and camera-based eye control. Likewise, control feedback has been expanded and today takes the form of voice and sound, device vibration, and visual notification.

The user is positioned as a local sovereign at the heart of a control centre equipped with monitors and sensors that report on communication activity, device state, and any number of other user-configured reporting tools and mechanisms spanning weather, news, traffic, and economic activity, for example. In addition, the smartphone is constituted as a device of control for other artefacts typically found in domestic settings, including personal computers, television sets, and stereo systems. By way of device interface points, proprietary and open protocols, and increasingly pervasive household wireless connections, the smartphone is located at the centre of media ensembles as a master remote control.

Creativity

> Give it a retro feel. Dial up the contrast. Or go black and white. Artistic license is all yours. (Apple, 2013c)

> Get a sequence of photos in one frame to create a collage that tells the story better than a single photo could. (Samsung, 2013a)

> Display your masterpiece on the big screen for all to see. (BlackBerry, 2013d)

As a highly valued cultural ideal, creativity is widely deployed by manufacturers to signify the smartphone as a modern tool for the creation, distribution, and consumption of user-produced art, which takes the form primarily of digital photography and video. As a cultural value, creativity is translated in terms of the smartphone and transformed into well-defined scripts for its realization. The smartphone, in tandem with select applications and social platforms, provides the material basis for these scripts. Device, application, and platform affordances are foregrounded by website advertising and matched to different roles in the creative process.

The user is constituted as a director who is in charge of the action, selecting, framing, shooting, and recording everyday life which is the raw input of the creative act. Here, the quality of the smartphone camera is of paramount importance, including its capacity for capturing clear and colourful high-resolution photos and videos. Shooting modes and options are also foregrounded as important parameters of the creative process as both artistic variables as well as valuable enhancements of content capture.

In addition to widescreen, panorama, and high-definition video recording, some manufacturers have introduced additional modes that make use of both the front-facing and rear-facing cameras to simultaneously capture the user taking the photo as well as modes that capture multiple frames into a single image to achieve a time-lapse effect. In each case, capture modes are constituted as enhancements to the creative process that provide novelty, fun, and new avenues for expression.

As producer, the user is provided with a plethora of tools, filters, and effects that are to be applied as further refinements and enhancements of the captured input. These include photo and video editing tools that support content modification, cropping, and resizing as well as filters and special effects that can be applied to content as additional variables of creativity; enhancements that are said to reflect the artistic disposition and sensibility of the user. Captured photos and videos may thus be colour enhanced, faded, or amended directly on the phone before they are saved, archived, and distributed for consumption.

As content distributor, the user is constituted as a storyteller in the possession of personal stories that need to be told and shared with others. Now that content has been creatively captured, curated, and produced, it can be uploaded and shared by way of producer-run and third-party distribution platforms integrated by way of smartphone operating systems and content sharing services. Popular third-party platforms such as Flickr and Facebook enable users to upload photos and videos, set access permissions, and enable social interaction around published content. Here, friends and family constitute the primary audience for the consumption of creative output and subsequent online sociality.

Easy

Don't worry, it's easy. (Samsung, 2013g)

Everything you touch is easy, intuitive, and fun. (Apple, 2013f)

[A]ll it takes is a couple of gestures. (BlackBerry, 2013d)

Although smartphones are complex artefacts, manufacturers insist that their purchase, operation, and management are easy. This assurance is extended to both potential users who have never owned a smartphone as well as existing users who may already own an older smartphone or a model produced by another manufacturer. In the case of the former, intimidation and fear of the available options of smartphones relative to basic phones are addressed by way of a reassuring tone that often draws on intuition and fun as incentives for overcoming hesitation. Potential users are assured that although the smartphone is a complex device capable of many functions, its operation is intuitive, simple, and easy. This assurance often co-exists in tension within a framework of promotion that makes heavy use of text, images, and videos that are full of details, explanations, and demonstrations that attest to the complexity of the device.

For both potential and existing users of smartphones, focus is also directed towards common tasks as a means of attesting to the ease and simplicity with which these may be accomplished given a particular model's hardware, user interface, and available applications. Whether this entails accessing personal or public information, managing content on the phone or across devices, communicating with friends and family, or purchasing applications or commercial media content, each task is constituted as effortless, intuitive, and free of frustration. Likewise, the process of transferring personal data and content from existing or competing devices is directly addressed by way of tools and utilities that are said to make transitions easy and hassle-free.

Entertainment

Millions of ways to be entertained. (Apple, 2013j)

Discover games that your friends play ... (BlackBerry, 2013a)

It suggests different programs based on your preferences ... and does the channel surfing for you. (Samsung, 2013e)

Smartphones are also materially and promotionally interwoven by manufacturers with commercial media consumption which in turn is associated with leisure, relaxation, and pleasure. This interweaving spans access and search, purchase, and consumption as well as related activities such as content rating, recommendation, and social

interaction across music and radio, television and movies, magazines and books, and online and offline video games.

Here the smartphone is constituted as a device of popular entertainment, but unlike more traditional mass media, consumption of content via smartphones is signified as both a very personalized experience and a highly device-centric activity. Selection, choice, and individual preferences are foregrounded as means of customization of the entertainment experience alongside secondary activities such as content learning, discovery, and sampling. Social and algorithmic recommendation systems are presented as gateways to the consumption of new content that is likely to satisfy existing tastes and preferences.

Unlike disparate household entertainment technologies, the smartphone is an integrated platform that combines on a small-scale a magazine stand, bookshelf, television set, movie player, stereo system, and video game console. And unlike household devices, the entire platform is mobile such that content may be accessed regardless of physical location. And this content may be consumed alongside other activities, such as listening to music while reading a book, for example, or watching a movie while periodically texting with friends.

The smartphone as entertainment centre is closely bound with claims that attest to device hardware and components, in particular the phone processor, graphics chip, and display. The phone screen is typically foregrounded with respect to its size, resolution, colour reproduction, and pixel density, which are presented as important facts and figures. The display is constituted as a window to experience: a high-quality screen provides a guarantee that entertainment can be consumed to its full potential, resulting in maximal enjoyment, a link that deterministically binds phone components to visual pleasure.

In a similar way, the smartphone processor and graphics chip are signified as important considerations that attest to the capacity of the device to process high-resolution video streams and graphics-intensive games. Processor architecture, speed, and graphics capability are constituted as essential facts that attest to the potential and

quality of experience. Faithful reproduction of video and responsive gameplay provide assurance that entertainment will be enjoyable.

Lastly, the smartphone is signified as a device that is capable of enhancing existing forms of entertainment, particularly in domestic settings. Here, it is constituted as an intelligent artefact capable of improving less intelligent entertainment ensembles that unlike the smartphone are feature-poor, unconnected, or depersonalized. For example, as a source of commercial media content, the smartphone can be connected to an existing television set as a means of displaying shows and movies that have been rented or purchased on the phone, to access television schedules and ratings, or to consume new content based on personalized recommendations that take into account previously consumed content on the phone. In each case, the smartphone lends its intelligent affordances to less intelligent and less connected artefacts.

Exclusive

The Samsung Galaxy S4 is the pinnacle of smartphones. (Samsung, 2013g)

BlackBerry is famous for ensuring your messages, photos, apps and content stay private. (BlackBerry, 2013a)

There's iPhone. Then there's everything else. (Apple, 2013j)

Smartphone manufacturers position their respective devices within a system of difference whereby the advertised model is distinctly superior relative to a mass of undistinguished devices. The model is thus placed at the top of a hierarchy of devices and claims of uniqueness, quality, and exclusivity are used as props of elevation. This distinction operates at multiple dimensions and may include the manufacturer itself, who may be said to produce artefacts of a superior quality, the phone hardware, which may be distinguished in terms of its specifications or design, or device software and applications, which may be presented as that of a higher quality or quantity.

This positioning of smartphone models is generally not about a fit between a user and the device and the extent to which a user's requirements are likely to be met and satisfied. Instead, the reader is offered an opportunity to occupy the top of a social

hierarchy of consumers by way of consumption of an object that is itself positioned at the top of a hierarchy of artefacts. A mirror relation is thus suggested, where device exclusivity is a mirror for social exclusivity and consuming "the best" is equivalent to being "the best."

In contemporary consumer societies, being a good consumer is closely tied-up with cultural skills, knowledges, and competences, such that consuming well is typically equated with living well and being a good person in a general sense. Consuming "the best" that is available in the marketplace across wide categories of goods can thus be interwoven with personal and social identity projects. By positioning their goods as exclusive, manufacturers not only attempt to distinguish their goods from those of the competition, but when their claims become more widely recognized and accepted, they provide resources for personal identity and social distinction. Unlike the incompetent mass, poorly consuming undistinguished goods from the bottom of the hierarchy, the knowledgeable and invested consumer is offered the reward of quality and distinction by selecting the best that the marketplace has to offer.

Fun

Details are the little things that create delight. (Apple, 2013b)

Samsung Galaxy S4 captures all the fun. (Samsung, 2013a)

[S]pread the fun and instantly share your albums with friends and family. (Samsung, 2013a)

Manufacturer website advertising also draws on the highly treasured and popular cultural value of fun. Smartphones are signified as fun to use, a source of fun, part of fun experiences, and enhancements of fun. As something that is itself enjoyable to use, the smartphone is constituted as an artefact that excites and which is delightful to the senses in the way that it looks, the way that it feels in our hands, and the way that we interact with it. As a bridge to content that is fun to consume, the smartphone is positioned as an instrument and medium for channelling fun. As a faithful aide, it purports to present text, image, video, and audio clearly and without distortion, ensuring that enjoyment can be realized in their consumption. And as enhancer of fun, the

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smartphone is constituted as an artefact that is capable of improving existing fun experiences, primarily by way of photo and video capture, subsequent curation, and social distribution of content among friends and family. Here the smartphone is a device that can extend fun in time and space.

As a highly esteemed cultural value, fun today is also interwoven with conceptions of the good life in Western liberal societies, a life that is ideally full of fun and exciting people, things, and experiences. Unlike the good life of the recent past, which was more inward focused and centred around questions of character and morality, a life well lived today is a life that realizes the full potential of time in the pursuit and enjoyment of fun. At this higher level, the smartphone is constituted as a device that belongs to and is an integral part of a fun and enjoyable life, alongside friends and family with whom we have fun and as part of engaging, exciting, and fun experiences.

Here the smartphone is signified as an artefact that helps us live a good life in several different ways. As an instrument of utility, it is said to assist in information seeking, communication, and the planning of fun activities. As a complement to existing experiences, it is positioned as contributing to and extending the fun of sociability, enhancing reality, and prolonging our engagements with others. And as a source of new experiences, such as video communication, screen sharing, or group music and game play, it is situated as the origin of new forms of fun.

Magic

The latest music – all at your fingertips. (BlackBerry, 2013a)

By simply waving your finger overtop of a folder, Air View allows you to preview the files inside. (Samsung, 2013g)

Photo Stream. Snap. And it's everywhere. (Apple, 2013e)

There is a measure of enchantment, wizardry, and the supernatural associated with smartphones in website advertising across multiple senses of these words. The smartphone is constituted as a device that can achieve the impossible and unexpected, at times defying natural laws and logics. At other times, the user is constituted as a

magician, capable of inducing the artefact to perform tasks and execute commands by way of spells that are cast with the wave of a hand or a few simple words (gesture and voice interfaces). Sometimes the phone itself is made to defy expectations of reality, such as when it is figured as a library of books, music, and movies capable of holding, cataloguing, and retrieving thousands of titles despite its compact size and miniature shape.

In a similar way, the promotion of cloud-based services draws on these themes as digital objects are increasingly being separated from specific devices and places. Photos, videos, and music as well as documents, emails, and calendars can today exist wherever there is a networked access point and smartphones are integral to this shift as mobile, always-on, always-connected devices. In contrast to digital objects of the past, which typically were tied to particular devices and places, and at times shuttled over networks by users to other devices and places, cloud-based services defy intuitions and common understandings of time and space. A photograph taken outside with a smartphone can appear immediately on a laptop and tablet at home. A document created on a desktop at the office that is then edited at home can retain its edits the following day at the office. Digital objects can now exist simultaneously everywhere and to the extent that this still defies our expectations of how the world around us works, it can be signified as the magic of an age where technology can defy natural laws.

More

Do more. Manage less. (BlackBerry, 2013d)

More to see. More to love. (Apple, 2013g)

Live in a world of infinite possibilities. (Samsung, 2013g)

Abundance, quantity, and possibility are drawn upon by manufacturers as highly-prized cultural themes across many dimensions of signification that span smartphone capabilities, content consumption, experience, and modern life more generally. Not only are smartphones constituted as artefacts that enable us to do more in less time and independently of place, but readers are told that they can also perform a greater diversity of things given the appropriate selection of artefacts, applications, and

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platforms. With respect to media content, consumers are promised the experience of more visual and acoustic detail which is equated with more sensory enjoyment. Smartphones are also situated as devices that enable one to get more out of everyday experiences and events, primarily by way of always-ready photography, video recording, and content distribution and sharing. Likewise, readers are promised more sociality via a multiplicity of asynchronous and synchronous communication tools that make use of text, audio, video, and data networking.

At a higher level, manufacturers draw upon and speak to the character of life in contemporary liberal societies characterized by detraditionalization, individualization, and consumerism. Here life is primarily about individuals expressing their personal tastes and preferences and getting more of what they enjoy. In turn, the smartphone is signified as an artefact that enables one to get more of what one loves and as a result enables one to get more out of life. In addition, the very possibility and promise of abundance is associated with devices which are constituted as potent instruments for the realization of opportunity. More doing, seeing, hearing, socializing, and enjoying is always just around the corner, as promise and hope, awaiting its realization.

Natural

> [T]he experience is lively and spirited in so many unexpected yet perfectly natural ways. (Apple, 2013b)

> The images and words are amazingly vivid and crisp. Everything just looks so real. (Apple, 2013j)

> Voice Control recognizes natural speech patterns, so you can talk naturally ... (BlackBerry, 2013d)

Manufacturers also draw on nature in their signification of smartphones and user interaction. Although smartphones are ultimately inanimate objects, they are constituted as active, vital, and dynamic artefacts that respond naturally to our natural actions. Like other objects in one's physical environment, smartphones are hand-held and are designed to be manipulated by way of pointing, pressing, tapping, squeezing, and swiping, actions that are signified as both intuitive and natural.

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Similarly, voice-based interfaces are constituted as natural ways of interacting with the phone. As one of the most basic human actions, speech is positioned as an intuitive means of both controlling the phone and receiving feedback from the device. Introductory vocabularies of phrases, recognizable speech patterns, and common usage scenarios serve to both demonstrate the reality of the technology as well as to educate readers about its use. And rather than display phone responses via only text and image, a human-sounding voice is provided to simulate communication between the user and the human-like, speech-capable device.

As mediators of content, smartphones are also signified as transparent windows onto reality that is said to appear vivid and life-like on the device. Landscapes, greenery, and earth elements are drawn upon as imagery to signify nature, which is clearly and colourfully displayed on the phone screen to foreground the phone's ability to faithfully represent reality without distortion. Here nature is a source of vibrancy, vitality, and purity that manufacturers draw upon to signify smartphones as both like nature and as faithful representatives of its reality and beauty.

Power and Speed

Powerful, responsive, fast. (BlackBerry, 2013d)

Powerful A6 chip. (Apple, 2013h)

[T]he Galaxy S4 has the strength you need and the speed you want. (Samsung, 2013g)

Even though smartphones are relatively small and compact devices, manufacturers insist that they are powerful and strong artefacts that are capable of not only lightweight small tasks, but can also do the heavy lifting that may sometimes be required by larger and more demanding applications. Here the smartphone processor and graphics chip are signified as essential considerations that are intended to assure readers that the device is capable of handling a wide spectrum of functions efficiently and responsively. These tasks may include independent but processor-intensive applications such as video editing and game playing as well as concurrent activities that involve multiple applications running simultaneously. Strength is also sometimes

extended to the rendering of complex documents and webpages that may include a mixture of text, images, and videos.

Power is closely linked to speed, since more capable processors are able to more efficiently handle the many computations required by applications. The processor is thus associated with device responsiveness, smooth operation, and efficient completion of complex tasks. Although user interface responsiveness is dependent on many factors, including the processor, operating system, and application, this complexity is typically concealed and simplified to a simple consideration of processor power as determinant of the quality of user experience.

Speed is also often extended as an important consideration with respect to data networking and the capacity of the phone to handle large amounts of network traffic and data quickly and efficiently. Considered as a whole, smartphones are constituted as artefacts that will not frustrate or delay users. They are devices for getting things done quickly and without delay, an essential prerequisite for being able to do more in less time.

Progress

Technology should never get in the way of humanity. (Apple, 2013b)

[T]he world's most advanced mobile OS. In its most advanced form. (Apple, 2013a)

Taking photos and videos will never be the same ... (Samsung, 2013i)

Technology has historically drawn on and has been used to signify progress and this modern theme is embraced and extended to smartphones by manufacturers who translate it in multiple senses of the term. At a more abstract and societal level, the smartphone is constituted as an artefact that represents the advancement of science and technology. In this general sense, the smartphone is signified as a pinnacle of modernity, a high water mark of innovation, and the best that society has historically been able to produce. Here the smartphone is positioned as the most advanced technology that has ever existed that is available to anyone and everyone. The

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manufacturer is thus vanguard on the one hand, leading the advance of progress, and benevolent donor on the other, sharing the benefits of this progress with as many people as possible. The consumer, in turn, is constituted as the primary beneficiary of progress and advancement.

In a more specific and relative sense, smartphones are also signified by way of progress in relation to past models, past component parts, and past features. With each release, current models are often compared to past models and their respective shortcomings and deficiencies. Although at the time of their release these older models were themselves constituted as high water marks of progress, their attributes and characteristics are now re-appropriated as shortcomings and points of reference relative to current models and their advancements. This may include aspects of phone design, external and internal components, user interface, or functions and applications. In each case, a deficient past is superseded by an improved present, which over time is itself transformed into a deficient past in a cycle of progressive signification.

Re-Living Everyday

Life is full of special moments. (Apple, 2013c)

Capture every moment. (BlackBerry, 2013a)

Capture the "I was there" moments of your life … (Samsung, 2013a)

Smartphone advertising constitutes time as a sequence of moments, an orientation that is ideally suited to phone functions centred around photo and video. This moment-centric conception of life as a sequence of events lends itself well to their capture, curation, archiving, distribution, and re-living. In some respects, smartphone advertising draws on an existing culture and popular discourse that is focused on time, its preservation, and its repeat experience by way of photography, an orientation that has been historically cultivated since at least the late 19th century by generations of manufacturers, enthusiasts, and consumers. At the same time, smartphone manufacturers build upon and extend this cultural understanding by foregrounding affordances that are unique to smartphones, such as the ability to instantly review, edit, and distribute digital content. Moreover, to the extent that users typically have their

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camera-equipped phones with them at all times, manufacturers draw on the aestheticization of everyday life to constitute smartphones as artefacts that are essential to capturing and sharing with others the significance and beauty of the micro-events of the everyday.

Manufacturers attempt to amplify and channel this cultural dynamic by signifying the everyday as a source of meaning and occasion that deserves attention, appreciation, and preservation by way of an always-ready capture, editing, and distribution device. Like its artistic and commercial predecessors, popular photography is thus no longer limited to circumscribed special events or universally recognized cultural occasions, but includes the full spectrum of everyday life, which may be drawn upon as a source for aestheticization. Consumers are not simply directed towards the appreciation of everyday life as it is or alone in isolation, however, but are presented with both the tools for its transformation as well as encouraged to share their creations with friends and family, who are constituted as receptive audiences.

The emphasis on preservation, transformation, and social re-experience is extended to recognizable everyday "life moments" that supplement previously established life stage and special events as valuable occasions. To the extent that this orientation becomes naturalized by repeat signification as well as actual cultural practice, the smartphone becomes interwoven with the emergence of a popular culture based on a set of loosely shared values and forms of appreciation that provide a basis for the curation of memory and networked sociality. Here, recognizable everyday moments function as a sort of cultural common denominator and glue that enables the social production and consumption of particular forms of digital content.

Revolutionary

Introducing a completely new way to use your smartphone. (BlackBerry, 2013a)

All-new design. All-new features. (Apple, 2013a)

It shows your comfort level based on temperature and humidity. (Samsung, 2013b)

Alongside progress, manufacturers tend to signify small changes and enhancements as revolutionary innovations. This strategy operates by way of a heightened focus on minor details that are amplified and marshalled as evidence of major changes and developments. In turn, these simulated innovations are used as distinguishing attributes to position devices within a system of difference that includes competing products as well as past models produced by a manufacturer. Even though smartphone products are largely indistinguishable across generations in terms of core functions, small alterations are signified as large breakthroughs in design, manufacture, or operation.

There are several design and signification strategies that manufacturers use to constitute change as revolutionary. For example, existing phone functions may be relocated or regrouped within the user interface and constituted as new, such as when Apple extended and rebranded "Phone Settings" as "Control Center" in the iOS 7 operating system. Settings such as phone volume, brightness, and wireless connectivity were simply grouped into a pull-down menu and presented as a revolutionary feature of the updated operating system, even though they have always existed and continue to be available under the phone's system settings.

Manufacturers also make aesthetic changes across fonts, style, or layout and signify these changes as major breakthroughs across phone functions, since core applications make use of the underlying operating system and its user interface elements. For example, even though email continued to function as email did in the past and even though web browsing continued to entail the same activity, both were constituted as "all-new" by way of aesthetic changes introduced in Apple's iOS 7.

Another strategy used by manufacturers to signify models as revolutionary entails the introduction of new considerations or new functions that are constituted as deeply innovative. Here reader attention is focused by way of education about new features or new distinctions that consumers may not have previously considered. For example, Samsung introduced temperature and humidity sensors into its Galaxy S4 phone and signified these as valuable insights into the user's "comfort level," even though weather information is already easily and readily available on every smartphone

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by way of localized weather services. Similarly, Samsung introduced a new camera mode that captures audio alongside a photo and signified it as an innovative enhancement of photography, even though users could already record short videos that include both image and audio.

This strategy may also be applied to aspects of the smartphone that are otherwise not perceptible or which do not directly pertain to user accessible functions, such as considerations of production and manufacturing. For example, Apple's advertising of the iPhone 5 included detailed descriptions of materials and processes employed in the construction of the phone's outer shell as a means of foregrounding production advancements and signifying both manufacturer and device as innovative. In each case, new considerations that add relatively little or no new functionality are constituted as major innovations and together are marshalled as a testament to the revolutionary character of the artefact.

Scientific Wonder

> The design of the Samsung GALAXY S4 defies what's possible. (Samsung, 2013d)

> It's nearly impossible to make a device so thin and light without sacrificing features or performance. Yet iPhone 5 achieves that goal. It's an accomplishment of engineering as much as one of design. (Apple, 2013j)

> Apple's Industrial Design team tested 124 different prototypes of the EarPods on over 600 people. (Apple, 2013d)

Closely linked to revolution and progress, smartphones are constituted in website advertising as feats of science and engineering that deserve awe and should inspire wonder. Here smartphones are signified as accomplishments where the impossible was made possible by way of scientific application and the overcoming of obstacles of nature across materials, chemicals, and processes. As the hero responsible for these supernatural feats, the manufacturer is decomposed into scientists, engineers, and designers who struggled and eventually forced nature to contort to human needs.

Apple in particular drew heavily on these cultural themes in its advertising of the iPhone 5, which was constituted in terms of binary oppositions that defy expectations with respect to size and volume: it has a long battery life, even though the battery is small; it is powerful and strong, even though it is thin and light; and it is capable of big things, even though it is compact. In a similar way, the iPhone 5 earphones were signified as a feat of engineering whereby the opposition between individual and mass had been resolved: even though the earphones are mass produced, they have been scientifically tested and engineered to fit the diversity of many individual ears, an accessory that is generic yet perfectly fits everyone's unique ear.

In these narratives, experts in laboratories, study sites, and manufacturing facilities have been actively striving to transform an unhelpful natural and material world in the service of the consumer and his sometimes impossible demands. By devoted application, these experts eventually manage to contort and associate nonhumans in ways that were only thought to be impossible, a story that ends well for both the manufacturer and the consumer.

Secure

Stay secure. (BlackBerry, 2013d)

Safety and security by design. (Apple, 2013f)

Protect your personal information and recover a lost phone. (Samsung, 2013l)

Manufacturers identify and draw upon a number of dangers to situate smartphones as artefacts that are safe, protected, and capable of defending against various threats. The user, for example, is a threat to himself and his belongings, which may be lost or misplaced. Likewise, others are a threat as potential thieves motivated to steal the device. In addition, software developers present a possible danger, since they may maliciously craft an application to hijack or compromise the phone. And even applications developed by well-intentioned developers may misbehave and carelessly access or transmit the user's personal data. In each case, either the physical device

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itself along with the user's personal information may fall into the wrong hands or device software may act against the user by compromising the user's privacy.

The manufacturer, in turn, is constituted as a helpful aide who is interested in assisting users protect themselves against these possible threats and who offers a number of technical and social mechanisms to prevent and mitigate harm. In the case of a lost or stolen phone, for example, users are educated about using a passcode to lock their device, enabling location identification tools, and being prepared to erase their phone remotely. As gatekeepers, some manufacturers also provide reassurance by way of screening systems for device applications to filter out and prohibit the circulation of malicious software in their application marketplaces. Similarly, third-party applications are required by manufacturers to inform users of how their personal information will be used as a prerequisite for installation.

Even though manufacturers increasingly make available to users various cloud-based services for storing and syncing their personal data, photos, and videos across multiple devices, and even though these services are typically run and managed by the manufacturer or affiliated third-parties, neither is constituted as a threat to users with respect to data privacy. Instead, network services are primarily signified in terms of ease and convenience. Information and details that pertain to policy, protection, and privacy are notably absent.

Sentiment

Absolutely Love My S4. (Samsung, 2013k)

love my new samsung galaxy s 4! :) altho it does have the plasticky feel to it. its still a flippin fantastic phone!! the camera is amazing!! (Samsung, 2013k)

Apparently love can be measured. And it keeps adding up to iPhone. In nine straight studies by J.D. Power and Associates ... iPhone has been ranked "Highest in Customer Satisfaction with Consumer Smartphones." (Apple, 2013j)

Manufacturers draw on consumer sentiment as a promotional resource in website advertising by selectively using consumer enthusiasm, satisfaction, and

endorsement to support and amplify their claims and to enable existing consumers to market products to potential consumers. In the more direct form, this typically entails selecting and prominently displaying positive user reviews that were submitted by existing consumers via the manufacturer's website, a method of volunteer enrolment by consumers themselves to speak promotionally on behalf of the manufacturer and its products. As a genre and mode of communication between consumers, it is characterized by truth and authenticity and is differentiated from the interested and motivated speech of manufacturers. Consisting of the words of actual people, the positive user review delivers a testament to readers: "This is a great product. I enjoy consuming it, you will as well."

Although reviewers may stand alongside manufacturers and speak positively on their behalf, the direct inclusion of user reviews is a risky strategy, since reviews may also include negative expressions that contradict or undermine promotional efforts and advertising claims. To address this risk, manufacturers also use more indirect forms of sentiment that reference consumers as a group and selectively employ their collective voice as a promotional resource by way of statistics, facts, or awards. For example, third-party customer survey and marketing organizations may be referenced as a means of gauging and expressing customer satisfaction, especially if these are also tied to particular distinctions or awards. In this way, positive consumer sentiment may be selectively included while at the same time concealing negative consumer experiences and expressions.

The deployment of consumer sentiment may thus be understood in terms of a spectrum that includes direct and indirect forms and their associated benefits and risks. For example, Apple did not include any direct consumer expressions in its advertising of the iPhone 5, but instead made use of indirect customer satisfaction awards for past models as a means to draw on positive collective sentiment without exposing itself to the potential contradictions of actual user expressions and experiences. And even though Apple's online store includes user reviews for third-party accessories, there are no published user reviews for the iPhone or other Apple products, and consequently no direct consumer sentiments or negative expressions on Apple's website.

In contrast, Samsung draws directly on consumer sentiment and user reviews in its website promotion by foregrounding positive customer reviews and expressions. Beyond this selective publishing, readers can access all submitted user reviews, including negative reviews and expressions. To the extent that the majority of user-submitted reviews are positive, however, the negative reviews may function as a source of legitimacy for the review system as a whole, since exclusively positive expressions and the complete absence of critique are more likely to engender skepticism from readers. This may be particularly relevant when the review system is published by the manufacturer (as opposed to a third-party) and when there exists public awareness of review fraud, such as when producers manufacture reviews intended to simulate positive consumer sentiment. Unlike Apple and Samsung, BlackBerry did not include any consumer expressions as part of its smartphone advertising.

In general, the closer that readers stay within the confines of the manufacturer's website, the less likely they are to encounter negative consumer expressions about either the producer or the advertised product. When consumer sentiment is included as a promotional resource, direct forms speak candidly to readers in ways that may both amplify and undermine the manufacturer's advertising efforts. While indirect forms lack the candidness of more direct expressions, they also minimize the risks of contradiction from consumer sentiments that may run counter to a manufacturer's advertising strategies.

Social

> The Samsung GALAXY S4 is all about "togetherness." (Samsung, 2013f)

> Share just the photos you want, with just the people you choose. (Apple, 2013e)

> Now you and all of your friends can share a single experience with the help of the Group Play feature. (Samsung, 2013h)

Manufacturer website advertising foregrounds the social affordances of smartphones, which support both well-established communication modalities as well as emerging and new forms prescribed by manufacturers. Since they are already widely

adopted and likely to be used by friends and family, third-party social platforms such as Facebook and Twitter are deployed promotionally as incentives for device adoption. In addition, although there already exist third-party platforms for text, audio, video, and group communication, manufacturers also manage their own communication platforms and applications which are promoted alongside third-party options. For example, communication services such as Apple's iMessage and FaceTime, BlackBerry's BBM, and Samsung's ChatON co-exist alongside similar third-party services. Not only do these platforms give manufacturers full control over user data, interface, and device integration, but to the extent that they are also used by friends and family, they function as promotional and sociotechnical incentives for device loyalty and adoption, since unlike third-party platforms they are not available on competing devices.

Manufacturers also prescribe new forms of sociability centred around their devices and proprietary platforms. As educators of new forms of communication and social experience, manufacturers offer examples and usage scenarios that revolve around digital objects, smartphones, and supporting protocols and infrastructures that facilitate new and enhanced modes of social interaction. For example, even though third-party, networked photo sharing applications already exist, Apple promotes an integrated, in-person mode of photo sharing that entails the direct exchange of data across two or more proximate iPhones as an enhanced form of in-person interaction facilitated by the device. In a similar way, Samsung promotes new forms of social experience enabled by their Galaxy S4 smartphone that allows users to transform proximate devices into a unified stereo system whereby all devices are wirelessly connected together as a means of amplifying and listening to music with others. And BlackBerry promotes a proprietary screen sharing application that enables BlackBerry owners to share their phone displays with each other as an enhanced form of real-time sociability that makes possible activities such as viewing a photo album or browsing the web with a friend.

In each case, existing and new modes of sociability generally operate within an implicit frame of networked individualism that locates the individual at the center of a social network of friends and family as a basis for communication. Sociability is primarily constituted in terms of spending time together, sharing experiences, and consuming content. It is not an open or public form of communication, not concerned with

citizenship or politics, and not centred around rational discourse or deliberation. In general, manufacturers draw on existing cultural practices centred around traditional media and popular culture, such as listening to music or watching television with others, for example, and attempt to translate and extend these practices to smartphones.

Utility

> For all the things you do. And all the things you can't do without. (Apple, 2013i)

> The BlackBerry Z10 has the tools you need to get things done on the move. (BlackBerry, 2013d)

> Multi-task like never before. (Samsung, 2013i)

Smartphones are constituted in website advertising as multi-tool pocket knives, useful artefacts that increase the user's capacity for action in the world, regardless of location or context. As mobile devices that are designed to be easily carried by users at all times, smartphones are signified as always-there, always-ready, always-connected artefacts that may be integrated into everyday activities as supplements or enhancements to everyday life. This utility is manifested by way of both pre-installed device applications as well as user-installed applications that extend the device's base functionality. Manufacturers foreground both specific uses, such as communication, content management, maps and travel, and entertainment, for example, as well as the open-ended aspect of devices that draws attention to the malleable and dynamic character of smartphones and the ways in which they may be adapted to each individual's needs, preferences, and requirements.

In this latter respect, manufacturer-managed application marketplaces are signified as valuable adjuncts to the device itself, since they define the opportunities and limitations of these functional extensions. Here popular application categories and widely-recognizable software brands are foregrounded to promote both the applications as well as the device's compatibility and interoperability with existing and well-established platforms and applications. Consumers are offered not only the choice of which applications to install, but also how each application will be configured and interwoven with both other applications as well as the user's personal needs and data.

For example, a user's contacts, calendar, and files may be grouped together under a single account that multiple applications may access, update, and modify. In each case, the user is presented with an abundance of choice and the opportunity to select functional extensions from software marketplaces that include hundreds of thousands of applications.

Work

> One device for work and play. (BlackBerry, 2013d)
>
> Ready for business. (Apple, 2013f)
>
> Samsung makes doing business easier and simpler than before. (Samsung, 2013m)

Although there are some references to work, productivity, and education in smartphone website advertising, relative to other themes and narratives, these references are infrequent and de-prioritized. There is a distancing from offices and schools and the connotations of seriousness, work, and effort, which have the potential to contradict more prominent significations centred around the smartphone as an artefact of pleasure, fun, and enjoyment.

BlackBerry's website advertising of the Z10 was a partial exception to this rule in the sense that there were more prominent references relative to Apple and Samsung with respect to work. BlackBerry drew to a greater extent on a language of efficiency, productivity, and task completion to constitute the Z10 as a smartphone well-suited to "getting things done." Although part of this signification was within the context of the office and enterprise, it was also extended to everyday life more generally which was constituted as a space with responsibilities and demands that requires planning, efficiency, and task completion.

In general, however, references to work and education were relatively limited and de-emphasized relative to other themes. When references were present, they were less likely to be prominently positioned and more likely to be published at the bottom of pages and at the end of content sequences. Content blocks were also generally smaller

and fewer, smaller images accompanied text descriptions. Apple in particular de-prioritized work and the enterprise to a great extent. In the website advertising of the iPhone 5, one reference to work appears below and after the promotion of the phone's accessibility features, a consideration that is relevant to a very small proportion of the population with special access needs, a consumer segment that is much smaller relative to potential business users.

You-Centred

Today is all about you. (Apple, 2013c)

Optimized display settings that fit you. (Samsung, 2013b)

Personalize, protect and enhance your BlackBerry Z10. (BlackBerry, 2013b)

Drawing on themes of amplification, companionship, and entertainment as well as control, sociability, and utility, manufacturers constitute smartphones as artefacts that are centred around the user. As devices that are well-adapted to individualization and the enactment of diverse life biographies, smartphones are signified as highly flexible and accommodating to different individuals with unique preferences, goals, and social networks. In addition to the customization and extension of device functions via user-installed applications, users are presented with a diversity of communication options that may be adapted in selective ways as well as the ability to choose and consume a wide spectrum of content that spans text, image, audio, and video based on individual tastes. In this respect, consumers are offered an amalgam of choice that spans functionality options resembling that of personal computers, communication options that mirror and extend the telephone and the internet, and content options that include print, music, and television as well as movies, video games, and user-generated material.

In addition to this spectrum of choice, smartphones are signified as artefacts that mould and adapt to the unique actions and behaviours of each user, as programmed nonhumans that are compelled to adjust themselves to their human possessors. By monitoring and analyzing user activities, smartphones are said to be capable of learning and anticipating future actions as a means for realizing user-centred personalizations

and efficiencies. In each case, the smartphone is constituted as an artefact that revolves around its user and distinct behaviours, preferences, and ways of living.

Translations, Associations, and Actor-Networks

Facts: Creating Performance and Progress

Manufacturers also constructed and deployed facts as part of their promotional strategies in an effort to objectivize and strengthen their claims about their artefacts and themselves. Relative to Samsung and BlackBerry, Apple made much heavier use of facts in its website advertising, which were made to speak on behalf of smartphone design, research, and manufacturing as well as applications, media content, and consumer sentiment. In so doing, Apple constituted the iPhone 5 to a much greater extent as a product of intensive and far-reaching scientific application with measurable results that objectively demonstrate progress and innovation. Details and considerations spanning materials, construction, and design alongside research studies and prototypes were seamlessly integrated as objective supports for more generalized claims and signification strategies.

Although the majority of these facts were self-constructed, Apple also drew on third-party facts in its website promotion, including third-party research and awards that enabled it to precisely draw on existing, positive consumer sentiments and to establish a pre-emptive defence against potential criticisms against itself or its promotion. By associating its smartphones with industry awards, Apple signified its smartphone as an established, award-winning technology and itself as an award-winning company, lending credibility to its current claims based on objective assessments of its past achievements.

All manufacturers published a variety of simple artefact performance facts constructed from component specifications and laboratory tests that subjected devices to small experiments, such as measuring battery life duration for common tasks such as communication, video playback, and idle use, for example. These facts also often included processor characteristics and network performance to support claims that attested to the device's speed and power. This fact-based signification of devices as

capable artefacts also at times served a double-purpose: to establish the current model as superior to past models by way of direct comparison of components, enacted performances, or available capacities.

In addition, a number of size-based facts were constructed and deployed to lend objective support to manufacturer claims about device characteristics and capabilities. These facts included device attributes such as weight and depth, the size of associated systems such as application and music marketplaces, as well as facts that were intended to attest to a device's popularity by way of usage or market size. Through a rhetoric of objectivity, manufacturers attempted to strengthen promotional claims by associating them with facts and figures that were made to speak for themselves. For example, not only did Apple signify its iPhone 5 as "thin and light," but it was also constituted as "18 percent thinner" and "20 percent lighter" relative to past models, based on depth and weight differences of 7.6mm versus 9.3mm and 112g versus 140g, respectively. An objective difference of 1.7mm was thus translated into an objective difference of 18% that was then foregrounded as support for a progressive, revolutionary, thinner design that was otherwise likely imperceptible to users.

There was also a spectrum of objectivity across deployed facts, since some were more resistant to critique and trials of strength than others. Awards based on research conducted by third-parties are generally more difficult to question and are more likely to be accepted by readers relative to producer-created distinctions and less reliable statistics. For example, in its website advertising of the iPhone 5, Apple signified the phone camera as the "world's most popular," a claim that was based on publicly available usage statistics provided by Flickr, a popular photo sharing website. Although it may be the case that iPhone-based cameras are widely used on Flickr, it is less clear whether this usage is actually representative of worldwide camera use. It is equally possible that a disproportionate number of iPhone owners use Flickr relative to other photo sharing sites, a plausible alternative explanation for the reported usage data, especially if Asian consumers and social platforms are taken into account.

Sociogram: Translating Needs and Interests

In order to engage uninterested people and transform them into interested consumers, manufacturers must to some extent successfully translate people's needs and interests into the functions and capabilities of smartphones and their use. Cultural values must be re-calibrated into the terms and frameworks of the artefact if people are to take it up and if it is to circulate in people's hands and lives. To this end, manufacturers employed a number of different enrolment strategies to translate the smartphone as an artefact that can not only help people meet their basic human needs – including autonomy, self-expression, identity, sociability, play, and relaxation – but which is also an accommodating artefact that can be adapted to every individual's distinct needs and be moulded to personal requirements, tastes, and preferences. In addition, manufacturers acknowledged and created new needs that co-emerge with smartphone use and offered to meet them by way of additional artefacts, services, and infrastructures. In so doing, manufacturers extend their reach into new markets and networks that envelop smartphones and their users and provide consumers with a means to mitigate the difficulties and risks of technology ownership.

To begin with and in the most general sense, smartphones are constituted as flexible artefacts that can be custom-tailored in their configuration and use to help people meet their own needs, regardless of what these needs may be. In this respect they are positioned as an ideal fit to the individual life biography and the conditions of detraditionalization and individualization. By way of user-directed customizations and user-selected functional extensions, smartphones are translated as artefacts that help people in the pursuit of their unique life goals and aspirations. Here the manufacturer is a thoughtful helper, engaged in science, engineering, and design in the service of this general, yet highly user-centric, aim and mission.

Closely related to this, smartphones are positioned as devices that enable people to satisfy their need for autonomy and control. Readers are presented with a wide spectrum of opportunities for the realization of this control and the expression of their individual tastes and preferences, spanning the device itself and its external appearance, its mode of operation, applications, communication modalities, media content, and network services and platforms. In this respect, the smartphone offers a

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localized degree of autonomy and freedom of choice that is almost unparalleled relative to other everyday artefacts. Not only are consumers presented with many options to define what the device will be and how it will function, but this autonomy is complemented with a wide choice of content, including user-selected information, commercial media, and communication.

This high degree of autonomy is also addressed by manufacturers as a problem of complexity that requires its own mechanisms of simplification and control. For example, Samsung offers its users the ability to toggle their smartphone into a simplified mode that conceals many of the available settings and configuration options as a means of reducing complexity and the potential for users to be overwhelmed by choice. Thus, autonomy and choice are employed in both their full sense and in their reduced and managed sense as a means of attracting people with different needs and capacities for autonomy and control.

Smartphones are also translated as artefacts that are essential to sociability, a basic human need that may not only be met, but which can also be enhanced by new modes of interaction and shared experience. This human need for social contact is primarily translated in the terms of networked individualism whereby the individual is at the centre of a personalized network of friends and family rather than a participant in social life based on physical proximity, such as a neighbourhood or local community. Given this individual-centred social framework, the smartphone is constituted as an artefact that enables the management of one's social network by way of communication utilities that facilitate diverse modes of interaction that can be tailored to each person or sub-network based on the nature of the relationship. In addition, the smartphone is signified as an artefact that is capable of enhancing social life and extending co-presence with friends and family. By way of always-available photo and video capture in social settings and the extension of sociability in time and space via networked modes of content sharing, an always-connected artefact makes possible an always-connected existence that need not ever disconnect at the completion of social events.

Tightly interwoven with this sociability and localized autonomy, smartphones are positioned as artefacts for the enactment of personal and social identity. This potential

and its realization is translated at both the level of the device itself as well as in terms of its use and configuration. As an increasingly ubiquitous technology, smartphone consumption creates a decisional burden on individuals who must select a device within a complex cultural, economic, and technical context. This decision will to some extent be based upon both personal preferences as well cultural considerations that take into account the artefact as a signifier of values, attitudes, and orientations. Like other commodities that have been imaged as potent signifiers and communicators, smartphones are culturally coded and positioned by manufacturers within a system of difference that is intended to be decoded and adopted by individuals attempting to relate to themselves and to others by way of material culture. To the extent that individuals are invested in and commit themselves to these processes, smartphone selection may entail both an attentiveness to one's needs, values, and preferences as well as a consideration of one's existing or desired position in social and cultural space. In addition and in a similar way, the ways in which a device is customized and personalized in terms of accessories, applications, and social media platforms that are themselves imaged, coded, and used by different social groups provides further opportunities for engagement, investment, and the expression of personal and social identity.

Smartphones are also situated by manufacturers as artefacts that make possible diverse forms of pleasure, play, and relaxation, human needs that may be satisfied by way of the device itself or in relation to others by way of networked forms of sociability. In the case of the former, these needs are primarily translated via traditional entertainment and media forms such as music, television, movies, and video games as well as photos, books, and magazines, all of which may consumed on the smartphone independent of time or place. In addition, the device itself is constituted as fun and pleasurable to use, a source of delight, wonder, and magic in everyday life. In the case of the latter, it includes new forms of networked sociability that make possible novel forms of interaction, play, and entertainment that may be primarily user-directed or which may accompany existing commercial media forms, such as the social supplementation of stand-alone video games, for example.

People's desire for and interest in creativity and self-expression are also translated by manufacturers predominantly by way of smartphone hardware and

software for photo and video capture, editing, and publishing. Relative to other applications that may equally facilitate creative pursuit, photo and video are foregrounded as fundamental aspects of smartphones that not only enhance social experience, but which enable artistic and inspired engagement with the world. This self-expression and creativity is closely linked with communication and the distribution of digital creations within one's social network, which is constituted as the primary audience for self-expression and user-generated content.

In addition to translating cultural values and human needs into smartphone affordances, scripts, and prescriptions, manufacturers also acknowledge and create new needs that co-emerge with smartphones use and offer to meet them by way of additional artefacts, services, and networks. For example, as complex devices that demand maintenance and which sometimes fail, smartphones require a consumer who is capable of performing occasional management and troubleshooting tasks. To this end, manufacturers provide both formal and informal support mechanisms to instruct users as well as paid support services for device maintenance and repair. Manufacturers also provide online social spaces that enable public communication between staff and consumers, who also provide voluntary support to each other. The resulting support infrastructure thus includes free and fee-based services provided by manufacturer staff, affiliated third-party experts, and consumers themselves spanning retail and service locations, knowledge databases, and official and unofficial online support forums that envelop the artefact and its users. Although smartphones are constituted as intuitive, easy, and fun to use, additional assurances in the form of diverse support networks are provided to users for managing artefact complexity and failure.

Like device maintenance and breakdown, which surface with smartphone use and reliance, privacy and data security emerge as new concerns that manufacturers address by way of education, device technologies, and new network security mechanisms. As with smartphone operation, which is lauded as easy but which may require support, users are encouraged to deeply integrate devices into their personal lives even though this integration entails new risks and threats that are unique to smartphone ownership. Like all personal belongings, and especially highly mobile and compact objects, smartphones are likely to be lost or stolen. To the extent that they may

contain personal, financial, or sensitive information, manufacturers offer a number of assurances to consumers by way of built-in security technologies, device registration systems, and network tracking and control mechanisms that enable users to remotely erase their data. These solutions entail the establishment of new security and control infrastructures alongside devices for the management of smartphone ownership that function to support deep device and personal integration.

Lastly, Apple has begun to offer data syncing and integration tools to address the emergent needs associated with multiple device ownership. To the extent that consumers are increasingly using multiple networked devices that may include laptops, tablets, and smartphones, each of which may be accessed at different times and which may include similar applications and data, Apple has begun to offer its consumers data integration and synchronization tools that promise to keep applications, files, and data up-to-date across multiple devices. In this respect, Apple is committing itself to data service provision and increasingly competing with third-party service providers such as Google who make available integrated data and communication services via web-based and cross-platform applications that are widely available on most devices today, including Apple and Samsung smartphones, tablets, and personal computers.

Technogram: Keeping Consumers in Place

The promotion of application, content, and support services that supplement smartphone functionality represent additional and emerging revenue streams for manufacturers alongside the sale of actual devices. More importantly for the purposes of this discussion, these new interconnections bind the smartphone to manufacturer-controlled and third-party networks that have the potential to keep consumers loyal to particular brands and product families. Stated in another way, platforms and services may be understood as emergent associations that are designed to entangle consumers within proprietary systems of investment that are intended to be difficult to leave.

To begin with, proprietary application and media marketplaces are built into smartphones by manufacturers to encourage functional extensions, content consumption, and platform investment. To the extent that users purchase applications,

movies, books, and games by way of these built-in services, over time they become economically invested in the provided systems and are likely to be reluctant to forego their investment by switching to a competing manufacturer or marketplace. Apple and BlackBerry each maintain their own digital ecosystems which function as islands of applications and content. Although users may install applications and consume content on multiple devices, each device must be from the same manufacturer. Samsung, in contrast, relies on Google's third-party application and content marketplace which is compatible across all Android-based devices. At the same time, Samsung promotes its own proprietary media and game ecosystem alongside Google's generic system. Even though third-party media platforms are available (e.g. Amazon) that enable users to more easily transfer and consume content across competing devices, manufacturers continue to widely promote their own proprietary systems which are tightly integrated with their products.

In a similar way, although there are third-party communication applications that are readily available for most smartphones, producers continue to develop and manage their own proprietary communication tools and protocols. For example, even though there already exist popular third-party text, audio, and video communication applications, manufacturers continue to promote their own services, which today include Apple's iMessage and FaceTime, Samsung's ChatON, and BlackBerry's BBM service. Recently there has been some cross-platform availability of these proprietary communication applications, but the cross-platform versions often only include a limited set of features relative to their native counterparts. As with manufacturer-controlled application and media marketplaces, these proprietary communication systems become interwoven over time with user investments across contacts, discussions, and content that are typically not transferable across competing devices. Equally importantly, these communication services may function as prerequisites of social inclusion that are subject to network effects. That is, proprietary applications that are already used to some extent within social groups and networks bias new and existing members towards their adoption which requires a compatible and supported device.

And as was already discussed to some extent in the previous section, manufacturers are increasing system integration among their networked products and

technologies. In one respect, this integration may be intended to satisfy emergent needs inherent to multiple device ownership (i.e. data synchronization), but at another level system interdependence may be understood as a strategy intended to keep consumers invested in and committed to particular brands and product lines. For example, both Apple and Samsung provide enhanced services and integration between their networked television products and smartphone models that provide incentives for ongoing brand loyalty as a means to preserve this integration and to continue to benefit from past investments.

Likewise, device accessories are subject to a similar two-sided logic. On the one hand, accessories provide a means of personalization and extend smartphone functions by way of additional artefacts such as speaker systems, docking stations, and exercise monitors. On the other hand, investments in accessories that make use of proprietary interface protocols create incentives for consumers to remain committed to an existing brand or product line to maintain this proprietary compatibility. Otherwise, economic investments as well as investments of time, configuration, and familiarity will need to be relinquished.

In sum, in addition to translating people's needs and interests into the terms and frameworks of smartphone use and consumption, and offering to meet emergent needs and risks associated with technology ownership, manufacturers also make use of other artefacts and systems in an effort to bind consumers to their products and to increase the likelihood of their commitment and fidelity. These additional ensembles include proprietary application and media marketplaces, proprietary communication services, and proprietary accessories and modes of system integration. In each case, consumer investments of money, time, and familiarity and possibly personal data function as incentives for loyalty and commitment to existing brands and product lines.

Promotional Design for Everyday Promotion

Manufacturers make use of a number of design strategies to image their smartphones as distinct objects to facilitate their recognition in public space and to make possible their promotion through use in everyday life. As objects that are mobile, widely

used, and may appear in many diverse social settings, smartphones are well suited to promoting themselves by way of everyday use and visibility. The promotional design of smartphones includes strategies to differentiate devices from competing devices, to maintain relation with past models within product lines, and to associate smartphones with other technologies produced by the same manufacturer; that is, to maintain brand identity across manufacturer, product line, and product family. In this way, a single smartphone visible in public space is capable of promoting itself, its own past models, and the manufacturer more generally as a producer of other similar artefacts. This potential for promotion is achieved primarily by way of general imaging of the brand and product as well as via design and aesthetics that span both hardware and software.

As the content analysis at the beginning of this chapter has illustrated, the smartphone image is central to manufacturer promotional strategy. For example, a single model such as the iPhone 5 was imaged 177 times by Apple as part of its website advertising. Likewise, Samsung and BlackBerry included 79 images and 66 images of the Galaxy S4 and Z10, respectively, in their website advertising, a total of 322 images across all three manufacturers and only three actual devices. Moreover, images were not diagrams, renderings, or small graphics, but high-resolution, detailed, large images that often scaled devices beyond their actual size relative to surroundings, people, and other objects when these were also present. Much of the time, however, the device image was the centre of focus on the page and not accompanied by any other imagery. In addition, the device image was at times dynamic and interactive, intended to encourage further engagement by way of short animations framed by the phone screen itself to simulate the actual operation and workings of the device.

This emphasis on showing the artefact, up close, from different perspectives, and with static and dynamic phone content enables manufacturers to simultaneously signify the smartphone as a work of art and craftsmanship as well as to draw reader attention to constructed promotional differences that would otherwise be difficult to see, let alone be amenable to amplification or repetition. In addition to the prominent visibility of the manufacturer name and/or logo on the device, the device name is also at times materially inscribed as a marker of identity, although this was only the case with the iPhone 5, and even here the reference was to the iPhone product family as a whole as

opposed to the specific model. All smartphones included the manufacturer name and/or logo on the back of the device, however, facilitating brand promotion during photo and video recording when the phone is facing others.

Each manufacturer also made use of design and aesthetic elements that were amplified through imagery and repetition in an effort to distinguish smartphones from each other. If we focus on just the two largest manufacturers, Apple and Samsung, we can see these promotional design strategies in detail. With respect to device shape, for example, the iPhone 5 is tall and narrow, whereas the Galaxy S4 is large and wide. In terms of outer material, the iPhone 5 is constructed from aluminium, whereas the Galaxy S4 is manufactured from plastic. The iPhone 5 has a smooth outer surface, whereas the S4 has a textured backing. The only visible, front-facing button on the iPhone 5 is round, whereas on the Galaxy S4 it is rectangular. And the iPhone 5 is only available in black and white, whereas the S4 is available in both black and white as well as an assortment of other colours that have themselves been branded as "blue arctic," "brown autumn," and "red aurora," for example. Taken together, these elements serve to create a visual and textural identity for each device by way of shape, size, form, material, and colour that operates primarily by way of difference relative to absent but implied other products. Alongside repetitive imaging and inscribed branding, these promotional design elements work in the service of an artefact identity that makes possible its recognition, interpretation, and further promotion in public space.

In addition, manufacturers employ language as a promotional resource through the introduction and circulation of branded vocabularies to identify devices, applications, and services. This identity work provides an additional means of relating together different types of artefacts as part of a common ancestry and family headed by the manufacturer. Apple is perhaps the most prolific in this regard, prefixing many of its products with its signature "i" that today includes not only the iPhone, but also the iPod, iPad and iMac, applications such as iPhoto and iMessage, and services such as iTunes and iCloud. Samsung has also introduced a number of its own identifiers, prefixed and suffixed with the letter "S," such as the Galaxy S family of smartphones as well as applications such as S Health and S Translator, for example. Likewise, BlackBerry prefixes its phones, applications, and services with the BlackBerry brand name, as in the

case of the BlackBerry Z10 and BlackBerry Q10 phones and BlackBerry Hub, BlackBerry Remember, and BlackBerry Balance applications, for example. In each case, and alongside other trademarked names that are clustered with devices, applications, and services, manufacturers relate heterogeneous artefacts together by way of patterned identities and images that promote both the technologies and their manufacturer.

Promotional intertextuality thus operates at multiple levels. Firstly, phone image, design, and naming are used to construct an identity for each device and to distinguish it by way of difference from competing devices. Secondly, patterned branding and aesthetics are used to bind different artefacts produced by the same manufacturer to product families and to a common ancestry and manufacturer identity. And thirdly, language, iconography, and co-presence are used to associate a device with a manufacturer's applications and services to promote the smartphone as an integrated ensemble of hardware and software technologies. The identity and difference that is established at the first level, which is the most publicly visible and recognizable thus serves as a link to the intertextuality established at the second and third levels. More generally, the identity established at the first level is necessary to the entire promotional circuit that envelops the device and makes possible its signification, recognition, and interpretation.

Consumption Modes and Logics

Having examined in detail some of the more prominent manufacturer strategies of promotional design, system interdependence, and cultural signification, we can now turn to consider the capacity of these strategies in relation to different consumption modes and the ways in which manufacturer promotion constructs incentives for engaging diverse consumption logics. As the following discussion will illustrate, with the exception of postmodern modes of consumption, manufacturers attempt to engage with users at multiple levels that span different ethos of consumption. In this respect, manufacturers position the smartphone as an artefact of near universal appeal that has something to offer to almost everyone, regardless of application or mode of consumption.

To begin with, manufacturers constitute smartphones as useful devices that increase the user's capacity for action and in so doing appeal to consumers who approach technology with an ethos of utility and the instrumental satisfaction of their needs. Here the smartphone is a tool that may be applied to many everyday activities by way of applications that extend its functionality and make possible enhanced means for the management of time, space, and individualized information and communication flows. Users are promised the ability to do more in less time, on the move, and across a greater diversity of tasks. In addition, the smartphone is positioned as a device that will learn from each user's activities and intelligently adapt itself over time to realize efficiencies that are custom-tailored to each individual. In the most general sense, smartphones are constituted as artefacts for the realization of opportunities and possibilities, an open-ended promise that may be filled-in and given shape by each user by way of device customizations, functional extensions, and the selection of content and communication modalities that are adapted to unique needs and preferences.

Manufacturers also constitute smartphones as sensual artefacts that make possible diverse forms of pleasure. This appeal to a hedonistic ethos via tactile, visual, and auditory enjoyment interweaves smartphone design and components, application and media marketplaces, and content with leisure, play, and pleasure that may be personalized to individual tastes and gratifications. The smartphone itself is signified as an artefact that is pleasing to the senses in the way that it looks and feels, a device that is said to be a delight to use and a source of pleasure that also facilitates diverse forms of play and entertainment. The consumption of media content spanning music, television, and movies as well as magazines, books, and video games locates the smartphone within the spheres of leisure and relaxation as a gateway to always-available commercial entertainment that may be enjoyed at any time and in any place. Smartphone processors, graphics capabilities, and display technologies are enlisted in the service of ensuring maximal sensual engagement despite the device's otherwise compact design. Consumers are assured that there is more to see, more to hear, and more pleasure to experience in ever greater and finer detail that is pleasing to the senses. Moreover, by way of algorithmic and social recommendation systems, consumers are promised content that is tailored to their existing tastes facilitating repeat consumption and enjoyment with little risk of hedonistic disappointment.

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To the extent that smartphones are also signified as novel objects that make possible improved and new experiences, their promotion is amenable to imaginative hedonism, fantasy play, and emotional stimulation centred around potential joys and possibilities that may be realized by way of future possession and consumption. Even though smartphone models are relatively similar to their predecessors, they are constituted as artefacts of revolutionary innovation through a focus on minor details, aesthetic changes, function rebranding, and the introduction of new features. This aggregate strategy, which spans hardware, software, and its signification positions devices as substantially different from predecessors, with new attributes and affordances that are said to make possible novel and improved experiences. There is an element of awe and magic that is intended to inspire wonder and which positions the user as a magician capable of casting new spells and performing novel tricks.

Shifting attention to outward-directed consumption modes and the symbolic affordances of artefacts with respect to self-expression, communication, and social identity, we can also see the ways in which smartphones are promoted to appeal to consumers operating with reproductive and pretentious ethos of consumption. Within a social and cultural context characterized by mass ownership of mobile phones, smartphone consumption creates a decisional burden for individuals who must select an artefact from an array of possible options with symbolic attributes that may be taken up as resources for personal and social identity work via device selection, personalization, and everyday use. At a basic level, this will entail a reflection on one's values and preferences and will require the selection of a device that meets one's needs. But to the extent that smartphones are perpetually positioned and re-positioned by manufacturers within dynamic systems of difference and made to function as signs, they may also be taken up by users for the expression of identity and used as resources for social displays. Premier smartphone models in particular, which were considered in detail for this study, are positioned by manufacturers as objects that occupy the uppermost positions in artefact hierarchies in terms of quality, craftsmanship, and character and as such may be used by consumers to express an existing social status or to attempt to elevate social standing through the consumption of publicly-visible, socially-recognizable, luxury goods.

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In addition, the smartphone is situated as a gateway to and mediator of other forms of cultural consumption that may be tied to personal and social identity work. As an artefact that is always-available, always-connected, and closely linked with networked social platforms, it is constituted as an adjunct to everyday life that makes possible ongoing sociability and communication centred around one's activities and consumption practices. Stated in another way, the social dimension of consumption may be extended beyond traditional social settings, opportunities, and displays tied to physical co-presence to also include activities and otherwise isolated consumption contexts that can be made social by way of networked applications that support social interaction around consumption. This may include the social announcement, rating, or recommendation of consumed media such as music, movies, or books as well as the mediation of everyday consumption centred around food, health, or daily living via shared photos, videos, or commentary, for example. As an artefact that makes possible ongoing sociality, the smartphone facilitates everyday self-presentations and reflections that may be shared with others in the service of identity work centred around consumption.

Lastly, manufacturers to a limited extent constitute smartphones as artefacts that are produced and which may be consumed in environmentally responsible ways. In so doing, they strive to appeal to consumers who orient themselves to consumption by way of a progressive ethos that includes a desire to minimize environmental harm and the negative consequences of consumption. However, only Apple included explicit references to manufacturing processes, harmful effects, and existing plans to reduce the company's environmental impact. In so doing, it acknowledged the interrelation between production and environmental harm and constituted itself as an environmentally conscious actor with strategies in place to reduce its carbon-dioxide emissions across manufacturing and transportation. In addition, Apple foregrounded the nature of some of the materials that were used in the construction of its smartphone to draw attention to their non-toxic and recyclable characteristics. Both Apple and Samsung signified smartphone consumption as a practice that could be environmentally sound provided that consumers recycled their old devices. To this end, both manufacturers included information about available programs that positioned recycling as an important aspect of responsible consumption. Although this appeal may provide incentive to some consumers, there was a lack of consideration given to issues of durability, long-term use,

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and obsolescence and the concomitant intensification of production and environmental harm that is associated with rapid production and replacement. By focusing on the reduction of toxicity, product energy efficiency, and recycling, manufacturers attempted to draw attention away from production as the largest and most significant contributor of carbon-dioxide emissions and environmental harm.

Obsolescence: Design, Promotion, and Consumption

By way of design, system interdependence, and promotion, manufacturers employ a number of strategies to encourage obsolescence and increase the likelihood that consumers will replace their existing devices. To begin with, smartphone disk storage is increasingly being set to a fixed size by manufacturers so that it cannot be increased manually by the user via low-cost disk accessories. Instead, fixed storage capacities are used to differentiate models by price and consumers are required to pay a premium to obtain a smartphone with additional storage. Users who opt for lower cost and lower storage models thus cannot upgrade their smartphones in the future via widely available disk expansion accessories, but instead must either reduce their disk use or replace their phone with another model that includes additional storage.

In a similar way, some producers limit the ability of users to access or replace the smartphone battery and require consumers to either send their devices to the manufacturer for service or to seek third-party support for battery replacement. This requires that users not only pay for a service that would be unnecessary if the battery compartment was easily accessible, as is the case with some smartphone models, but users must also give up their device and phone data during the replacement period. For example, Apple's battery replacement service enables iPhone owners to ship their device for battery replacement at a cost of (USD) $79 plus shipping. In addition to the time required to ship and subsequently return the phone, the replacement itself requires approximately one week to complete and all of the data on the phone is deleted in the course of the service. Users are also informed that their phone may be returned to them with a newer version of the operating system installed which may require them to upgrade their applications. There are thus economic costs that are compounded by delay and the potential inconvenience of restoring phone settings and data that users

will weigh against other available options, including equal or lower cost device replacement options bundled with short-term carrier contracts that will include both a new battery and a new phone.

Manufacturers also make use of non-durable materials in the construction of smartphones that degrade poorly over time contributing to aesthetic decline and wear. For example, Apple today relies almost exclusively on aluminium for its external phone enclosure which is easy to scratch and damage, especially for a portable device that will be in contact with other objects in pockets and purses. And although it was not explicitly included in the research analysis, LG recently produced a smartphone that included a glass-coated backing in addition to a front-facing glass display. Although the device was promoted as an achievement of design, user ownership and everyday use quickly demonstrated the fragility of the material and design. To mitigate against these manufacturer strategies and built-in mechanisms of aesthetic decline, consumers will typically use accessories such as screen protectors and cases for their devices in an effort to improve durability.

Lastly, manufacturer and carrier software support cycles contribute to obsolescence by way of abandonment of older devices, which cease to be provided with security updates and fixes. Although this lack of continued software support does not prohibit consumers from continuing to use their devices, it does make them more vulnerable to security risks that may compromise their devices and personal data, a concern that is particularly relevant to smartphones, which are permanently powered-on and network-connected. For users who store sensitive personal or work data on their devices, this lack of security provides an incentive to replace an existing device with a newer model that includes up-to-date software support. In addition, for consumers who do continue to use their unsupported devices, system and application interdependencies will gradually degrade the utility of phone. For example, communication applications at times require upgrades in order to maintain compatibility with updated protocols and systems, however, these upgrades may only be available for newer operating systems that are not made available by manufacturers for older devices.

If we now turn from design and system interdependencies and consider the relationship between promotion, consumption, and obsolescence we can see the outlines of an aggregate and heterogeneous incentive structure that is constructed by way of smartphone promotion to both stimulate desire and suggest possible dissatisfactions with existing devices. As an aggregate whole, this incentive structure intermeshes to varying degrees with different modes of consumption by which consumers orient themselves to smartphones.

For consumers who approach technology by way of an instrumental ethos, smartphones represent tools that are efficient means to ends. This orientation is engaged by promotional strategies that foreground the utility of devices and emphasize the functional characteristics of smartphones, which may be tailored by each user to satisfy distinct needs and requirements. Desire and dissatisfaction primarily centre around progress, innovation, and speed and power, each of which speaks to some extent on behalf of available utilities, improved efficiencies, and the ability to accomplish more in less time. Past models are constituted as less advanced and lacking in innovative features in addition to being less efficient, less powerful, and slower. Considered as a whole, consumers are promised new affordances, additional utilities, and greater efficiencies intended to both encourage possession and give concrete form to possibly incipient and inchoate dissatisfactions with existing devices.

If we consider hedonistic orientations to technology consumption, smartphones represent artefacts with potentials for the realization of pleasures that may be tailored according to each individual's tastes. Manufacturer promotion interweaves with this consumption ethos by way of a focus on the sensual, enjoyable, and pleasurable aspects of smartphones that span the device itself as an object that is beautiful, fun to use, and pleasing to the senses as well as a device that is a gateway to enjoyable activities that include the consumption of media and entertainment. Desire and dissatisfaction centre primarily around phone design and components that are linked by promotion to experience and the realization of pleasure. The smartphone display, processor, and graphics chip are constituted in terms of quantitative and qualitative attributes that are bound to sensual experiences: more vivid colours, finer details, and smoother flowing interfaces are offered as guarantees of enjoyment that will supersedes

past experiences. Not only will the device be more enjoyable to possess and use, but the consumption of content tailored to one's tastes will be enjoyed to its full potential and not compromised by past shortcomings.

Manufacturer promotion also signifies the smartphone as a novel object that is different from past devices and which makes possible new experiences that were previously not possible. In so doing, manufacturers attempt to engage with consumers at an imaginative hedonistic level by providing symbolic resources for day-dreaming, fantasy play, and the imaginative exploration of novel possibilities that may be realized by way of future possession. This novelty is manifested by way of new device components, new built-in applications, and new services that are constituted as magical and transformative in their enhancement of experience. Novelties may include the introduction of new device sensors or materials, new camera modes or capabilities, or new communication affordances such as screen sharing, for example. Manufacturers thus attempt to integrate desire and dissatisfaction with novelty via unfamiliar aspects and attributes that make possible new experiences previously unimagined.

Lastly, for consumers who approach smartphones by way of a reproductive or pretentious ethos of consumption, manufacturer promotion introduces new symbolic resources that alter and destabilize existing schemes of signification and which may require the abandonment of past device commitments that are no longer well-aligned with the requirements of personal or social identity. In addition, to the extent that manufacturers situate their respective products in terms of progress, advancement, and exclusivity, they construct a continually moving terrain of idealized artefacts, idealized forms of consumption, and idealized consumer identities. The positioning of smartphones in relation to past models and other devices as markers of progress, excellence, and distinction provides cultural resources for identity-focused consumers who need to stay in step with shifting artefact hierarchies that are linked to shifting social hierarchies of consumption. Stated in another way, consumers who are guided by a reproductive or pretentious ethos and invested in idealized consumer identities must at all times orient themselves to the activities of manufacturers and the availability of new devices as a means of expressing their consumption competencies and staying in step with social reference groups.

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Conclusion

As the analysis in this chapter has illustrated, smartphone advertising and promotion draws on well-established Western values, including beauty, creativity, and pleasure as well as autonomy, play, and sociability. These ideals are translated by way of devices that in some cases are positioned as prerequisites for their realization while in others are said to amplify existing experiences or generate new possibilities for their enactment. As a composite of hardware, software, and services, the smartphone is constituted as an essential "prop" and mediator of modern social practices that are delimited in the terms of networked individualism. Social life is constituted primarily via the social network of existing friends and family as opposed to the communal life of the neighbourhood or community. Smartphones are not signified by way of public participation, citizenship, or education, but rather as technologies that facilitate private spheres of sociability and play.

Manufacturer advertising encourages both active and passive media roles for smartphone consumers. On the one hand, users are constituted as active creators of photo and video content that may not only be instantly captured and edited but also quickly distributed across social networks. This technology-centric social practice is positioned as a valuable supplement to existing practices which may be extended in time and space as a means of expanding and prolonging the pleasures of sociability. On the other hand, users are positioned in more traditional media roles as consumers of existing commercial media. Unlike mass media of the past, however, this consumption is highly personalized to individual tastes. Emphasis on choice and personalization via large media libraries that combine artificial intelligence with social recommendation systems position users at the centre of a private media universe that promises to continually deliver entertainment based on existing preferences and past choices.

At a more general level, manufacturer advertising draws on and contributes to discourses of the good life in a modern society. As powerful mediators of experiences and social practices, smartphones are signified in terms of enhancement and enrichment made possible by the adoption of technology in everyday life. Science and progress are mobilized to constitute smartphones as innovative artefacts that incorporate the latest

technological advances in the service of basic human needs. As active contributions to these processes, smartphones in turn are positioned as revolutionary artefacts that advance science and technology by way of new designs and manufacturing processes that eclipse past limitations and boundaries. In this narrative, manufacturers constitute themselves as key contributors to progress through the advancement of science and technology in the service of humanity.

This discourse of progress is buttressed by the inclusion of promotional material that anticipates environmental concern and attempts to address possible critique. Through a focus on available recycling programs, manufacturers translate ecological harm primarily by way of responsible waste management and effectively conceal the contribution of production to overall environmental harm. Although life cycle research has identified the manufacturing process as the most significant contributor of carbon-dioxide emissions and ecological harm, attention is directed away from intensified forms of production towards disposal and responsible consumer behaviour at the end of the product life cycle. As a notable exception, Apple explicitly identifies its manufacturing activities as the most significant source of carbon-dioxide emissions, but promotional materials shift focus towards the removal of toxic substances from products and the inclusion of recyclable materials.

As the discussion in this chapter has demonstrated, these discursive practices of responsibility co-exist alongside more prominent and opposing design and promotional strategies that construct an aggregate incentive structure in the service of voluntary replacement and short product life spans. Although individual designs vary across manufacturers, smartphones are generally difficult to repair, make use of low wear materials, and increasingly include fixed batteries and disk capacities that discourage user adaptations that could prolong device ownership. These design practices are augmented by a promotional complex that addresses diverse user consumption modes, including instrumental, hedonistic, and expressive consumption logics, and which speaks in the service of dissatisfaction and desire. The net result is a contradictory field of practice that includes select contributions and reductions of ecological harm that correspond to capitalist system dynamics, on the one hand, and limited forms of institutional reflexivity, on the other.

Chapter 5.

The Circuits of Promotion:
Technology Media and Consumer Tribalism

Introduction

Having examined manufacturer advertising and promotion in the previous chapter, this chapter turns to technology media publishers and consumers to consider the ways in which smartphones are interwoven with forms of expertise and sociability in popular online media spaces. The chapter begins with a description of the selection criteria adopted for the undertaken content analysis and includes a summary of selected technology media articles and corresponding online reader discussions. The chapter then moves to detail the findings of the content analysis by way of a discussion of identified article formats and their respective publication frequencies.

This initial exploration of published content is followed by a detailed assessment of technology media narratives and reader discussions across popular article formats. This in-depth discourse analysis is organized by way of identified themes and includes an examination of the ways in which technology media authors and readers relate to smartphone manufacturers, forms of promotion, and devices. The chapter concludes with an expanded discussion of these practices that considers the cultural contributions of publishers and consumers in relation to smartphone consumption and obsolescence.

Technology Media Publication Formats

The content analysis undertaken for this dissertation examined three popular technology media publishers – *Engadget*, *The Verge*, and *Ars Technica* – spanning the publication period of January 1, 2013 to March 31, 2013. Using each publisher's online

content categories (e.g. "Mobile," "Cellphones," etc.), the set of articles during this period was limited to include only smartphone-related content. Given this requirement, 2022 articles were identified and included in the content analysis.

The selected articles included coverage of major industry events, including the annual Consumer Electronics Show (CES 2013), an international technology trade show held in Las Vegas devoted to product announcements. It also included coverage of the Mobile World Congress (MWC 2013), the world's largest annual exhibition devoted to the mobile industry. In addition, the publication period spanned major manufacturer product events, including Samsung's launch of the Galaxy S4 as well as BlackBerry's launch of the BlackBerry Z10. Both of these smartphones were analyzed from the perspective of manufacturer advertising in the previous chapter.

Of the 2022 articles, 1133 (56%) were published by *Engadget*, 659 (33%) were published by *The Verge*, and 230 (11%) were published by *Ars Technica*. Across all articles, there were a total of 187,849 discussion comments, of which 98,021 (52%) corresponded to *Engadget* articles, 74,914 (40%) corresponded to *The Verge* articles, and 14,941 (8%) corresponded to *Ars Technica* articles. Across all publishers, there were an average of 93 reader comments per article. *The Verge* included the most comments per individual article (114), whereas *Ars Technica* included the fewest (65). *Engadget* included an average of 87 discussion comments per article. Thus while *Engadget* published the greatest number of articles, *The Verge* had more reader comments during the examined publication period. *Ars Technica* had both the fewest articles and the fewest number of comments per article. Although audience figures are not made publicly available by publishers, social media readership statistics suggest that each publisher has a large audience following. Differences across publishers with respect to reader comments may thus reflect lower levels of engagement with content or suggest differences in the cultures of commenting specific to each audience. For example, while some discussion spaces may include a higher frequency of posts, other spaces may include fewer, but longer contributions from readers. This variability was not examined as part of the undertaken content analysis.

Table 5.1 provides a summary of the article types that were identified via the content analysis, including a description of each article type and the proportion of articles that corresponded to each type.

Table 5.1   **Technology Media Article Types by Publication Frequency**

Article Type	Articles (n=2022)	Description
Smartphones	641 (32%)	Smartphone rumours, announcements, and availability as well as photographs, evaluations, and adoption data.
Applications	356 (18%)	Application rumours, announcements, evaluations.
Industry	160 (8%)	Corporate ownership, management, regulation, and lawsuits.
Operating Systems	150 (7%)	Operating system rumours, announcements, and evaluations.
Events	116 (6%)	Previews, media coverage, and summaries of industry events, including trade shows and product launches.
Accessories	110 (5%)	Accessory rumours, announcements, evaluations.
Manufacturers	101 (5%)	Manufacturer promotion, production, and financial performance.
Carriers	94 (5%)	Mobile carrier service rumours, announcements, promotion, and financial performance.
Media	90 (5%)	Availability of audio podcasts, digital magazines, video shows, interviews, and weekly news summaries.
Commentary	61 (3%)	Editorial and commentary.
Components	47 (2%)	Smartphone component announcements and evaluations.
Ask a Question	15 (1%)	Answers by authors and readers to submitted questions.
Hacking	8 (<1%)	Operating system modification that is prohibited by manufacturers.
Retail	7 (<1%)	Information about new or existing retail channels.
System Integration	7 (<1%)	Integration with other technologies, including home appliances and cars, for example.
Security	6 (<1%)	Smartphone data and privacy vulnerabilities.
Contest	3 (<1%)	Contest with product award.
Other	50 (3%)	Other low frequency article types.

As Table 5.1 illustrates, the large majority of published content was focused on smartphones, spanning rumours, announcements, and availability news as well as device reviews and research on smartphone adoption. Applications, operating systems, and accessories were also prominently featured in articles. In addition to smartphone hardware and software, the actors responsible for their development and promotion

were also the focus of published content. This included smartphone and component manufacturers, mobile carriers, and operating system developers.

In general, published articles were US-focused but did include news and information relevant to Canadian, European, and Asian contexts. For example, mobile carrier service and smartphone announcements were not limited to American carriers and devices, but also included Asian manufacturers and mobile carriers. Likewise, coverage of international industry trade shows included European and Asian products in addition to smartphones and accessories aimed at North American markets. This expanded global coverage may reflect an expanding global readership for North American publishers or an effort to attract English-speaking global audiences. Established Asian manufacturers, including ZTE and Huawei, for example, also have in recent years began to introduce smartphones into the North American market and publisher coverage reflects to some extent these global market strategies.

Publication was predominantly event-based and driven by information recency and novelty. With some exceptions (e.g. reviews and commentary), articles were generally short summaries of events as opposed to longer form, in-depth analyses. Much of the published content corresponded to public relations events, such as product announcements, corporate partnership announcements, and research publication announcements, for example. To a lesser extent, published content was also based on consumer-initiated events, such as reported service disruptions and user-contributed reports of problems with devices, operating systems, and applications.

News summaries were typically complemented by author commentary that included either brief observations and remarks or longer form, in-depth analysis. This editorial content was wide ranging and included evaluations of market strategies and industry trends as well as analyses devoted to specific products and events. In this respect, media publishers stepped outside of the event-based news cycle and provided expert interpretations of the mobile technology industry.

Although technology media articles were distributed primarily via each publisher's website, they were also promoted via social media channels, including Facebook and Twitter, where posts invited readers to the publisher's website. Articles were also

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referenced by other online publishers who provided links to articles as part of their publishing activities. In addition, online news aggregators, such as Google News and Techmeme, for example, provided readers with summaries and links to technology media texts. Lastly, technology media articles were indexed by search engines, which associated published texts with manufacturers and artefacts in search results for smartphones, operating systems, applications, and accessories.

Given the primacy of search to online activities, technology media articles circulated beyond their respective publisher websites where they were consumed by enthusiasts closely following the technology industry. In addition to this devoted audience, lay audiences can expect to find technology media articles circulating at the top of search results in the course of ad-hoc and goal-focused search activities. Search results thus direct everyday technology consumers to publisher websites that offer not only an up-to-date account of technology news, but also provide resources for making sense of a complex field of actors, artefacts, and practices.

To understand the nature of these online resources, we can examine more closely technology media publishing by way of a detailed analysis of identified article types. To begin with, smartphone articles may be further divided into the sub-categories listed in Table 5.2.

Table 5.2   Smartphone Article Types by Publication Frequency

Article Type	Articles (n=641)	Example
Rumour	174 (27%)	"Purported Galaxy S IV pictures leak on a Chinese forum"
Announcement	107 (17%)	"Galaxy S4 intros even more 'natural interactions' with eye tracking, gestures, and hover previews"
Carrier Availability	91 (14%)	"Samsung Galaxy S4 launching on T-Mobile on May 1st"
Hands-On	81 (13%)	"The keyboard we've been wishing for: Hands-on with the BlackBerry Z10"
Data and Research	60 (9%)	"Strategy Analytics: Apple's iPhone 5 tops world smartphone sales for Q4 2012"
Country Availability	51 (8%)	"HTC One to arrive in the US by late April, just as the Galaxy S4 launches"
Eyes-On	23 (4%)	"Gallery: The BlackBerry Z10 and Q10 are actual things you can touch"

Article Type	Articles (n=641)	Example
Review	22 (3%)	"BlackBerry Z10 review"
Comparison	9 (1%)	"BlackBerry 10 against the competition: how the Z10 fares against iPhone, Samsung, and others"
Official Gallery	9 (1%)	"Sony Xperia SP press pictures"
Retail Availability	5 (<1%)	"Droid RAZR M 'blue steel edition' now available at Best Buy"
Teardown	5 (<1%)	"Samsung's Galaxy S4 gets torn asunder, reveals its innards"
How-To	4 (<1%)	"Back to stock: Get the Nexus look on any Android phone"

As Table 5.2 illustrates, rumours were published more frequently than all other article formats. These articles included information and speculation about anticipated smartphone models. In contrast, smartphone announcements, which were also widely published, included official manufacturer confirmations of new smartphones, which were typically described in terms of internal components (e.g. screen display, processor, storage, etc.) and promoted features. Smartphone announcements were often paired with availability dates and retail, country, and carrier-specific pricing details.

Once released, smartphone models became the subject of diverse forms of assessment by technology media authors, including first-person visual impressions ("Eyes-On") and brief assessments ("Hands-On") as well as extended evaluations ("Review") and comparisons ("Comparison"). These assessments were complemented by smartphone adoption analyses that drew on market data published by third-party research organizations. Taken together, smartphone articles covered the entire artefact life cycle, from pre-release rumours to product announcements to post-release evaluations and market analyses.

With respect to smartphone software applications, the following article types were identified.

Table 5.3   Application Article Types by Publication Frequency

Article Type	Articles (n=356)	Example
Announcement	300 (84%)	"Gmail for Android update lets you reply and archive straight from notifications"

Article Type	Articles (n=356)	Example
Development	18 (5%)	"Developers can update their apps to Windows Phone 7.8 with Microsoft's new SDK"
Hands-On	17 (5%)	"Vine hands-on: Twitter's game-changing take on social video"
Guide	10 (3%)	"Home row heroes: alternative keyboard apps for Android"
Eyes-On	6 (2%)	"Pandora for Windows Phone screenshots"
Rumour	5 (1%)	"Alleged Google Now for iOS video leaks on YouTube, is promptly pulled"

In contrast to smartphone rumours, the publication of application rumours was relatively infrequent. Application announcements, on the other hand, were frequently published. These articles were based primarily on public announcements circulated by application developers to accompany software updates and included brief descriptions of new features and fixed bugs. There were also relatively few application assessments published by technology media authors. When these were published, they included brief evaluations of apps ("Hands-On"), application guides ("Guide"), and screenshot galleries that visually illustrate application user interfaces and functions ("Eyes-On"). Although not directed at consumers, application development announcements ("Development") were also published and included developer-specific news and information based on public announcements by operating system providers. Thus, as the above publication frequencies illustrate, application articles were much less diverse when compared to smartphone articles and were almost exclusively limited to software update announcements.

Technology media publishers circulated the following types of operating system articles.

Table 5.4   Operating System Article Types by Publication Frequency

Article Type	Articles (n=150)	Example
Announcement	105 (70%)	"iOS 6.1 released to all with Siri movie ticket support and iTunes Match improvements"
Security	16 (11%)	"iPhone lockscreen can be bypassed with new iOS 6.1 trick"
Rumour	16 (11%)	"BlackBerry 10 exposed in full detail thanks to batch of leaked screenshots"

Article Type	Articles (n=150)	Example
Hands-On	10 (7%)	"Hands-on with Ubuntu's brand-new, gesture-based phone OS"
Promotion	3 (2%)	"Why Mark Shuttleworth thinks Ubuntu on phones will outclass Android"

As with software applications, announcements were by far the most prominent operating system article format. These articles typically corresponded to public announcements by operating system vendors regarding the availability of updated software with a summary of new functions. Related but distinct from these brief summaries, security articles entailed public disclosure of operating system vulnerabilities and the availability of software updates that addressed identified security problems. Although operating system evaluations ("Hands-On") and rumours were also published, including speculations about upcoming operating system revisions, these were very infrequent when compared to announcements. Likewise, targeted forms of operating system promotion by vendors ("Promotion") appeared with very low frequency relative to other article types.

If we move to consider smartphone accessories, the following article types were identified.

Table 5.5   Accessory Article Types by Publication Frequency

Article Type	Articles (n=110)	Example
Announcement	67 (61%)	"Google wireless charging orb finally available for Nexus 4"
Hands-On	25 (23%)	"Samsung Galaxy S4 wireless charging pad and S Health scale hands-on"
Rumour	8 (7%)	"What the rumoured Apple iWatch might look like, inside and out"
Eyes-On	7 (6%)	"Snapgrip iPhone camera controller hands-on photos"
Review	3 (3%)	"Mophie Outride review: action-cam case for iPhone can't replace dedicated shooters"

As Table 5.5 illustrates, the distribution of articles mirrors to a large extent the relative frequencies of operating system and application article types, with announcements of new accessories appearing more frequently than all other article

formats. These announcements included trade show and retail product launches by accessory manufacturers accompanied by brief descriptions of accessory functions, specifications, and product availability details. Relative to operating system and application articles, there were a greater proportion of articles devoted to first-person assessments of accessories ("Hands-On"). Rumours about new accessories, extended reviews, and photo galleries were also published but these article formats were infrequent relative to product announcements and first-person assessments.

In a similar way, internal smartphone components, including graphics processors and screen displays, for example, were the focus of many technology media articles. Although the majority of articles provided short summaries of promotional announcements ("Announcements"), there were also some first-person assessments by authors who provided evaluations of new components via prototype devices ("Hands-On"). Thus in addition to their indirect promotion by way of smartphone articles, branded hardware components were also promoted directly by their manufacturers and this promotion in turn was covered in the course of technology media reporting. Table 5.6 provides publication frequencies for smartphone component article types.

Table 5.6   Component Article Types by Publication Frequency

Article Type	Articles (n=47)	Example
Announcement	40 (85%)	"Corning Gorilla Glass 3 to be three times more scratch resistant than previous generation"
Hands-On	7 (15%)	"EyeVerify lets you secure your smartphone with your eyes (hands-on)"

In sum, when compared to accessory, operating system, and application articles, smartphone content was not only the most frequently published but also the most diverse, with a relatively wider distribution of article types. Smartphones were also the focus of many more rumours relative to other artefacts. Across all categories, however, product announcements were by far the most frequently published article format. And even though smartphones were the focus of both shorter form and in-depth evaluations to a greater extent than operating systems, applications, and accessories, technology media publishers provided assessments of all artefacts to some degree. Lastly, research

that examined smartphone and operating system adoption was also prominently reported by technology media publishers.

Shifting focus from artefacts to industry actors, the following article types were identified for smartphone manufacturers.

Table 5.7   Manufacturer Article Types by Publication Frequency

Article Type	Articles (n=101)	Example
Promotion	64 (63%)	"New ad campaign will change your mobile handset into a BlackBerry one"
Financial Performance	25 (25%)	"Nokia finally reports profit after six quarters of losses"
Production	12 (12%)	"HTC One delayed by manufacturing snafus"

Manufacturer promotional strategies, including advertising campaigns and executive statements, were widely covered by technology media publishers. This coverage was mainly descriptive and typically outlined upcoming and recent promotional efforts as well as executive remarks that were promotional in nature, such as critiques of competitors or their devices. In addition, ongoing public financial reporting by manufacturers was a regular focus of articles as a means of tracking each manufacturer's market performance. Although production processes were not the focus of many articles, they tended to surface when labour cuts or manufacturing delays were publicly acknowledged. During these brief periods, production details that were typically hidden from view, including sales estimates, supply chains, and workforce allocations, surfaced as topics of public coverage and analysis.

At a broader level, industry-wide events such as trade shows – attended by smartphone manufacturers, hardware component suppliers, and accessory producers – were the focus of sustained coverage by technology media publishers. As Table 5.8 illustrates, this coverage included pre-event speculation ("Preview"), live coverage of events ("Media Coverage"), interviews with executives attending events ("Interview"), and commentary during ("Podcast") and following the event ("Summary"). In addition to product launch events at other times of the year, industry trade shows were a primary venue for launching new products by smartphone manufacturers, component suppliers, and accessory producers. Events were thus a primary source of news for technology

media publishers as both a focus of coverage and as a basis for other publication formats, most notably the smartphone, accessory, and component product announcements noted in the preceding discussion.

Table 5.8   Event Article Types by Publication Frequency

Article Type	Articles (n=116)	Example
Media Coverage	56 (48%)	"Liveblog: Samsung's Galaxy S4 launch event"
Interview	30 (26%)	"The Engadget Interview: Nokia CEO Stephen Elop at MWC 2013"
Preview	12 (10%)	"Phones? Apps? Tablets? What we expect from tomorrow's BlackBerry event"
Summary	12 (10%)	"CES 2013: Smartphones roundup"
Podcast	6 (5%)	"Ars Technicast, Episode 18 – Tales from the trenches at CES"

Technology media publishers also focused on the mobile industry as a whole and its political and economic dynamics ("Political Economy"). The large majority of these articles were based on public relations announcements by industry actors with respect to strategic partnerships, acquisitions, and management changes. To a lesser extent, technology media publishers also reported on the public statements of state regulators and senior officials working at government agencies overlooking the industry ("Regulation"). These articles, however, were often specific to the Federal Communications Commission (FCC) and the regulation of the US mobile industry. In contrast, technology media coverage of industry legal proceedings was global in scope and was comprised primarily of international patent disputes between smartphone manufacturers. Table 5.9 provides a detailed summary of the relative frequencies of these article formats.

Table 5.9   Industry Article Types by Publication Frequency

Article Type	Articles (n=160)	Example
Political Economy	108 (68%)	"Qualcomm gets some competition as Broadcom enters mobile processor market"
Regulation	34 (21%)	"FCC will investigate cellphone unlocking ban, says chairman"
Lawsuit	18 (11%)	"Judge rules that Samsung did not infringe Apple patents willfully"

Although mobile carriers were also the focus of technology media articles, the majority of this coverage was limited to public announcements regarding the availability of new phone plans.

Table 5.10   Carrier Article Types by Publication Frequency

Article Type	Articles (n=94)	Example
Announcement	73 (78%)	"T-Mobile launches GoSmart prepaid service nationwide"
Rumour	9 (10%)	"T-Mobile could abolish phone contracts later this month"
Financial Performance	7 (7%)	"Verizon posts $4.23 billion Q4 loss despite record subscriber growth and smartphone penetration"
Promotion	5 (5%)	"'Stop the bullshit' in wireless pricing says T-Mobile CEO John Legere"

In addition to the promotion of new mobile services, technology media publishers circulated speculation about unconfirmed mobile plans that were rumoured to become available at some point in the future. As with smartphone manufacturers, public financial statements were covered by technology media publishers as a means of both tracking carrier market performance over time and assessing the success of each carrier's respective market strategies. When compared to phone plan announcements, however, rumour and financial performance articles were published relatively infrequently.

To summarize, in addition to its focus on diverse artefacts, technology media publishers also concerned themselves in great detail with the actors responsible for these artefacts and their respective strategies, promotional efforts, and performance in highly competitive global markets. At an even broader level, technology media publishers situated manufacturers and carriers in relation to state regulation, international legal disputes, and industry dynamics and in so doing presented readers with a multiplicity of dimensions beyond considerations specific to particular products and services.

News, Promotion, and Expertise

To examine the nature of technology media narratives and forms of expertise, a sample of articles was selected for an in-depth discourse analysis. This selection was

based on both reader engagement with articles, as reflected by the number of discussion comments contributed by readers, and the topical relevance of articles in relation to smartphones. Using this criteria, it was possible to identify article types that were more engaging with readers relative to other formats. As a starting point, 20 of the most popular article types were identified based on high reader participation. This list was then reduced to 10 article types based on their relevance to smartphones. Table 5.11 provides a summary of the initial and final list of article types, including the average number of discussion comments for each article type.

Table 5.11   Article Types by Average Number of Discussion Comments

Article Type	Comments (average)	Articles (total)
Smartphone Review	311	22
Commentary	227	61
Manufacturer Promotion	219	64
Carrier Promotion	202	5
Smartphone Comparison	191	9
Smartphone Data and Research	186	60
Industry Lawsuit	178	18
Smartphone How-To	155	4
Event Preview	145	12
Manufacturer Production	133	12
Smartphone Rumour	123	174
Operating System Hands-On	120	10
Operating System Rumour	118	16
Ask the Experts	113	7
Manufacturer Financial Performance	112	25
Hacking	110	8
Carrier Service Announcement	109	73
Operating System Security	106	16
Operating System Announcement	105	105
Retail Announcement	105	7

Note.   Article types included in sample are in bold.

To further reduce the sample for analysis, 12 of the most popular articles, based on number of discussion comments, were selected from each of the selected article

formats. Whenever possible, these articles were evenly selected across all three publishers (4 articles per publisher). In a few cases, where there were fewer than 12 articles for a given article type, all of the available articles were included in the sample, regardless of publisher distribution. Article types with fewer than 6 articles were not included in the sample. Using this criteria, a total of 104 articles were selected for the discourse analysis.

To examine reader engagement with this content, discussion comments corresponding to these articles were also included in the analysis. Since some articles had upwards of 500 reader comments, only the first 100 published comments were examined for each article. For articles that had fewer than 100 discussion comments, all of the available comments were analyzed. Based on this selection criteria, 8960 reader comments were included in the discourse analysis across the examined 104 articles.

As the preceding content analysis has illustrated, technology media publishers do not approach smartphones as isolated artefacts, but instead tightly interweave them with manufacturers, carriers, and diverse artefacts. As a whole, technology media publishers circulate diverse narratives about technology use and what it means to live in a modern society. Through the wide dissemination of product announcements, data on technology adoption, and assessments of markets and artefacts, publishers signify smartphones as an integral aspect of modern living that requires careful consideration.

Although publishers rely heavily on public relations announcements by industry actors and may appear as passive transmitters of information that is already published elsewhere, the act of aggregating this content in a single place not only frees readers from following manufacturers on a case-by-case basis, but exposes readers to forms of promotion that would otherwise be missed or avoided through self-directed information seeking. In this sense, technology media publishers play an active promotional role, even though aggregation of existing content appears relatively passive. In addition, market data that is typically published by specialized research organizations reaches a much wider audience via technology media publishers who include summaries of research reports in their news coverage. Likewise, rumours that may be otherwise confined to specialized online spaces or non-English websites are disseminated to much

larger audiences. In each case, technology media publishers play an active role as amplifiers of information that is already often published and dispersed online.

In addition to extending the reach of third-party sources, technology media publishers act as a primary source of information and expertise in several distinct ways. To begin with, technology media authors circulate subjective impressions of smartphones, accessories, and software. Secondly, smartphones are subjected by publishers to standardized test methodologies that form the basis of facts that become associated with devices. And lastly, authors publish diverse forms of commentary that examine the industry, manufacturers, and consumers in relation to specific historical and geographical contexts.

Taken together, these activities may be understood as both information dissemination and productive sense-making of a complex field of social practices and technologies. Technology media publishers not only circulate frameworks of interpretation that provide ways of making sense of this field, but also position artefacts in a heavily populated space of objects along multiple axes of comparison and in so doing contribute to their signification alongside manufacturer promotion. The following sections expand these observations and elaborate in detail the findings of the undertaken discourse analysis.

Markets and Manufacturers

> Samsung retained the top position in the smartphone market, with Q4 2012 sales totaling 64.5 million units, up 85.3 percent from the previous year. Apple, meanwhile, saw its sales reach 43.5 million units last quarter, up 22.6 percent from Q4 2011. (The Verge, 2013a)

> Where does that leave BlackBerry, Windows Phone and the rest of the gang? Pretty far behind ... (Engadget., 2013b)

> The BlackBerry Z10 has allegedly been selling like hotcakes in Canada and the UK since its launch earlier this month ... However, sales might not be as peachy keen as the company wants people to believe. (Ars Technica, 2013b)

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The smartphone market is featured in technology media articles as both a primary focus of analysis and as background context in writing that reports on manufacturer strategy and promotion. As primary focus, the smartphone market is largely constituted through data about devices and operating systems. This data is reported by smartphone manufacturers, operating system developers, and third-party research organizations that publish market research as a means of promoting their own services. Depending on the source, data may be limited to a specific manufacturer or operating system. In other cases, it is comparative in nature and organized by geographical region to foreground each manufacturer's relative market share. Data is also typically reported in relation to time (e.g. fiscal quarters, years) to enable comparison of current market performance to past market share.

Published data often forms the starting point of analyses that attempt to evaluate manufacturer market strategies. Through reference to data on consumer behaviour, as indexed by device shipments or sales, for example, strategies may be evaluated in terms of their relative market success. When strategies are deemed to be ineffective with respect to market growth, commentary often shifts to an analysis of this failure. Thus market data is deployed in several different modalities in technology media narratives: as general index of consumer choice in the marketplace; as gauge for assessing the effectiveness of manufacturer strategies; and as topic of interpretation that requires explanation given available devices, anticipated future technologies, and competing manufacturers.

For example, technology media articles that focused on BlackBerry often compared its low market share to Apple's and Samsung's high market share as a means of objectively describing current consumer preferences. This consumer preference was often also situated in a historical context to illustrate BlackBerry's market decline – as evidence that the manufacturer had been unsuccessful in its attempts to restore market share. In turn, BlackBerry's launch of the Z10 smartphone and BB10 operating system was analyzed in relation to this economic and historical context. Although commentators generally lauded the company's efforts, most authors were skeptical about the company's future based on a reading of current consumer behaviour. Among other factors, authors identified consumer investments in competing application ecosystems,

high expectations established by competing manufacturers, and a lack of quality applications as significant obstacles that would impede BlackBerry's market recovery.

In addition to being a primary focus of analysis, the smartphone market was often featured as a backdrop in articles as a means of framing news and information. For example, news of production delays for a particular smartphone model was often accompanied by reference to a manufacturer's relative market share as a means of qualifying the importance of the product launch. Since consumers may become impatient and purchase products offered by other manufacturers, authors asserted, market share was threatened and needed to be protected. In a similar way, product announcements were often presented as attempts by manufacturers to increase, win back, or maintain market share in relation to competitors.

This reliance on market share data by technology media authors provided an implicit promotional function for manufacturers leading the market. That is, references to market dominance and market growth provided an objectivized testament to consumer acceptance of particular smartphone brands, especially when market data was published by independent third-party research firms. In these cases, the promotional circuit began with market research firms, who published research reports as a means of attracting readership to their own websites. These reports, in turn, were summarized by technology media publishers to attract readers to content and advertising. Lastly, as both primary focus and background context, market share references provided support to market leaders as objective indexes of collective consumer sentiment towards particular manufacturers and brands.

To the extent that market gains for some manufacturers imply losses for others, the inclusion of market data also undermined less popular manufacturers and brands, since low market share functioned as an index of low consumer acceptance of existing products. Not surprisingly, manufacturers attempted to minimize these negative effects by releasing their own data and positive readings of consumer behaviour. This manufacturer-supplied research was widely covered by technology media publishers, but it was often subjected to critical analysis by authors who deconstructed published data and its presentation. For example, manufacturers at times presented data based on

purchase orders as opposed to actual device sales or limited sales data to particular countries where products had been well received. Although manufacturers were able to distribute this promotional data to a wide audience via technology media publishers, the promotion underwent a transformation in the hands of authors who deconstructed research and contextualized it in relation to other sources.

The Tribe Weighs In: Market Analysis and Conflict

> I fail to see how Samsung is winning when Apple is still gobbling up 70% of the profits worldwide. (thegeneral, 2013)

> What's missing is that while iOS beat Android in the US and Japanese markets, the reverse is true for pretty much the rest of the entire world. (TheWerewolf, 2013)

> Look at last quarter's financial results for Samsung and Apple and subtract out PC sales and tell me with a straight face that Apple is making 75% of the profits. (etwashoo, 2013)

Readers actively engaged with articles that focused on market research and manufacturer strategy. To begin with, discussion participants provided additional support for reported data through references to other market metrics that corroborated published research. For example, in the case of market share based on smartphone ownership, readers cited additional metrics such as recent device shipments by manufacturers to reinforce identified ownership trends. In so doing, readers drew on their knowledge of the smartphone market and associated published data with previously circulated market facts.

Readers also contributed additional analysis and attempted to explain reported data beyond the brief commentary supplied by article authors. This contest of attribution, which entailed diverse rationales purporting to explain market success and failure drew on many sources of support. Discussion participants not only cited market metrics, but also reflected on their own experiences with technology and at times mobilized observations of friends and family to support their arguments. For example, in their analysis of operating system market share, readers drew on their own experiences and attributed a bias in available data to withheld operating system updates by mobile

carriers. In a similar way, based on their observations of family members, readers questioned whether users were even aware of available operating system updates for their smartphones. Thus, readers argued, operating system data did not accurately reflect consumer choice but instead could be explained by other factors.

When market data was assumed to be representative of consumer preferences, readers provided their own evaluations of manufacturer strategies and considered the likelihood of their success in a competitive marketplace. The resulting discussions interlinked published research with collective understandings of market dynamics and offered predictions about future market success for particular manufacturers and product lines. Although positive evaluations implicitly promoted some manufacturers and devices, this support was fragile and often contested by other readers.

Despite the supplementation of articles via this additional research and analysis, discussions were generally characterized by conflict regarding the very definition of market leadership. Moreover, these arguments spilled across diverse article formats and were not limited to articles that focused on market research. At the heart of this conflict was the type of data used to construct the very concept of the "market." For example, depending on the research source, data spanned device sales, device shipments, device ownership, and operating system use. Moreover, some of this data was based on reports from manufacturers, whereas other data was based on analyst estimates. Complicating this further, estimates varied across research sources and reports. Depending on which metric was selected and for which time period and geographical region, it was possible for readers to continually define and redefine market leadership as they saw fit, referencing available statistics to support their arguments. Thus, even though articles tended to focus on a particular metric, readers quickly expanded this focus through the inclusion of other data that often undermined or contradicted reported research. What appeared in the article as clear evidence in support of a particular view of the market was subsequently complicated by readers who contested both the article research and each others' use of available data sources.

Although market leadership was a repeat point of contention, readers generally agreed on the value of market competition and were critical of a market duopoly

between Apple and Samsung. According to discussion participants, competitive dynamics force manufacturers to innovate in order to survive in the marketplace. The net effect is positive for consumers, it was argued, who not only have more options but are able to choose from more innovative products. Conversely, it was suggested, lack of competition results in a stagnant industry where manufacturers are comfortable and can ignore consumer needs.

Rumours, Announcements, and Manufacturer Promotion

> Some fairly convincing images of a previously-unseen Samsung smartphone have surfaced, possibly revealing a Chinese variant of the yet-to-be-announced Galaxy S 4. (The Verge, 2013d)
>
> What is purported to be a dual-SIM equipped engineering sample of Samsung's Galaxy S 4 popped up a few days ago in pictures and video on a Chinese forum, and now it's back for a better look. (Engadget, 2013d)
>
> Update: Leaked videos show Galaxy S 4 SmartPause, eye tracking, and new lock screen. (The Verge, 2013c)

As the content analysis at the beginning of this chapter has demonstrated, smartphone rumours were both frequently published and a source of high reader engagement. In general, these articles circulated information about anticipated smartphone models not yet released by manufacturers. For established manufacturers, speculation was often focused on an upgrade to an existing product line. Periodically, however, speculation centred around the introduction of new brands and form factors that were not yet available on the market.

Published rumours at times only included general information that hinted at the possibility of a new device while at other times they were rich with specific design and product details. In the case of the latter, individual components, such as screen display or processor, were of primary focus and speculation. As new information became available it was aggregated with past rumours and official manufacturer statements to establish converging lines of support or to identify contradictions within the existing body of available information. Speculation often also turned to the anticipated release date of

the rumoured device, which represented the expected wait period for consumers evaluating current and future market options.

Technology media authors drew on multiple sources for leaked information. Anonymous sources included engineers and factory employees with access to design plans and early prototypes, retail vendors who received early promotional materials, and company insiders affiliated with either the manufacturer or its suppliers with access to product timelines and strategies. To stimulate anticipation, manufacturers themselves selectively released details about upcoming products. In addition to these third-party sources, technology media publishers also monitored publicly available trademark and patent applications in search of information about possible new devices. For example, select smartphone functions are at times branded by manufacturers and protected via trademarks prior to their release. The corresponding trademark applications include both the trademark name as well as a brief description of its application. In a similar way, patent applications include detailed descriptions of phone designs, features, and services that may possibly be included in future devices. Depending on the source, published rumours may include high-level descriptions from patent applications, low-level device references and model numbers, or supposed photographs of prototype devices. In some cases, videos were leaked of rumoured devices that demonstrated their user interfaces and software applications.

The rumour cycle was typically culminated by an industry trade show or manufacturer promotional event where a smartphone was officially unveiled. The preceding speculation and build-up of anticipation provided a form of cumulative promotion for the event which acted as final arbiter of rumours and theories, which were finally verified via the unveiled product. Technology media publishers thus not only provided implicit promotion to manufacturers through the circulation of rumours regarding upcoming products but also used this anticipation to promote product launch events and their corresponding media coverage of these events. The resulting promotional circuit linked what were initially dispersed sources of rumour with official manufacturer and technology media promotion centred around product launch events.

In addition to their coverage of these events, publishers also distributed information about other promotional content that had been made available by manufacturers. For example, prior to and following a product launch, manufacturers distributed video ads via their website and social media channels to promote their new products. In turn, technology media publishers reported on the online availability of these ads and provided links and embedded versions of videos for their readers to consume. Often ads were part of larger promotional campaigns that included other commercials, print ads, and executive statements, which were also included as part of technology media coverage. Thus in addition to reaching their own audiences via their website and social media channels, manufacturers were able to easily extend the reach of their promotion via technology media publishers who drew attention to these campaigns as part of their news reporting.

In the days preceding and following a product launch, senior executives scheduled interviews with the press to promote their new products. Typically conducted by chief executive officers (CEOs) and chief marketing officers (CMOs), interviews dovetailed with manufacturer promotion efforts by both drawing attention to the product launch and by providing rationale for key product features at the heart of the promotion. In the case of a competitor's product launch, interviews were also scheduled to disparage the competition and undermine competing products. Executives at times drew on selective market research to support their claims and position their companies as uniquely capable of satisfying consumer needs. Although these interviews were typically granted to a select number of publishers, they were referenced, summarized, and redistributed by other publishers as part of their news coverage. In so doing, technology media publishers extended the promotional reach of these interviews beyond their original venues and audiences.

As the above discussion suggests, technology media publishers amplified manufacturer promotion through their coverage of product launch events, manufacturer advertising, and executive interviews. This promotion of manufacturer promotion often also included details about the smartphone at the heart of this publicity, such as its specifications and public availability. Considered alongside the rumour cycle, publishers thus extended smartphone promotion in both time and space beyond the capacities and

marketing budgets of individual manufacturers. In particular, rumours long preceded official promotional campaigns yet contributed cultural resources that supported collective speculation and anticipation of future products. This initial inertia preceded and interconnected with official manufacturer advertising and the launch of new products. Moreover, publishers extended this entire promotional circuit in space beyond the audience reach of individual manufacturers.

Although manufacturer promotion was extended by publishers in time and space, it was also occasionally the focus of critical analysis by technology media authors. Even though this assessment was often brief, it included, for example, the verification of executive statements to examine their validity. For example, in their promotion of the BlackBerry Z10 smartphone, senior executives often foregrounded a wide selection of applications for the new device. Technology media authors quoted and repeated these claims, but they also questioned the quality of these applications given the manufacturer's rushed development schedule preceding the product release.

At times, manufacturer promotion was the focus of in-depth analysis by technology media authors and examined in relation to the smartphone market, consumer trends, and popular culture. For example, one publisher included commentary that analyzed Samsung's Galaxy S4 launch event from a gender perspective. Pointing to Samsung's heavy reliance on gender stereotypes and the absence of female executives during the event, the article criticized the manufacturer's promotional campaign and argued that gender underrepresentation was a problem in the technology industry. In another case, a recently launched smartphone was analyzed in terms of its promotional function for the manufacturer. Rather than dismiss the product, the author argued that the device was not intended for mass consumption but instead provided promotional value for the manufacturer and its other smartphone products. In both cases, technology media authors drew on their knowledge of the mobile industry and transcended the otherwise rapid and shallow news cycle to provide readers with in-depth analyses of manufacturer promotion.

Tribal Enthusiasm, Speculation, and Undermining of Promotion

Oh my God… This is delicious. (koreandude, 2013)

Still, I am waiting anxiously for its release…..cos that phone is darn good-looking! Will I put a case on it? Yes! But I will be happy knowing that I got what I feel most satisfied holding, pocketing and walking around with! (Knyght, 2013)

A new phone that looks exactly the same as the old one just with a processor bump and a bigger screen? So much for innovation! (dekuNukem, 2013)

Published rumours were welcome by some readers with enthusiasm for anticipated smartphones. These expressions were often unqualified, positive statements about the device and its future possession (e.g. "Looks great," "Getting one of these"). Leaked photographs were occasionally edited by discussion participants to enhance details and enable closer inspection. Readers asked each other questions, speculated about internal components, and extrapolated details from previous rumours and official statements from manufacturers. This collective intelligence was also extended to speculation about smartphone availability based on existing relationships between manufacturers and mobile carriers.

Readers at times questioned the validity of rumours and shed doubt on the credibility of the source or the quality of leaked information. Since rumours were likely to be false, these readers argued, judgment needed to be withheld about unreleased products. Instead, it was suggested, consumers needed to wait for the official release by the manufacturer when details would be confirmed and the device could be fully evaluated. This position was often expressed in response to negative expressions about a rumoured device. For example, rumours of the Galaxy S4 eye scrolling feature were poorly received by readers who criticized it as a marketing gimmick that would be difficult to use in practice. Other readers, however, defended the manufacturer and advocated patience until the phone was released and could be adequately evaluated.

More generally, lack of enthusiasm for a rumoured device included both rational assessments of particular aspects as well as collective mockery of manufacturers and

their design decisions. This lack of enthusiasm was often linked to negative expressions regarding future device possession. Readers actively renounced unreleased smartphones based on their initial impressions and at times referenced competing devices as likely future possessions. This wait-and-see orientation directed attention to the future when competing manufacturers had released their new products and a decision could be made based on a consideration of all available options.

Rumours were also the starting point of much argumentation regarding manufacturer innovation, especially in relation to upcoming models in existing product lines. Readers were critical of manufacturers who were accused of continually adding incremental improvements to past models rather than introducing meaningful innovations that significantly improved existing devices. Despite manufacturer promotion that purported technological advance, readers argued, new features were merely gimmicks that did not qualitatively enhance available devices. In contrast, some readers normalized this state of affairs by arguing that manufacturers could not significantly alter a technology that already worked well. Instead, it was suggested, all innovation in the industry would continue to be minor across product revisions. In addition, readers suggested, one simply needed to look closer to appreciate manufacturer innovation across external materials, internal components, and software. Despite this lack of consensus regarding the quality of innovation in the industry, discussion participants repeatedly argued about innovation leadership in an effort to determine which manufacturers were trendsetters and which were followers. Readers drew on diverse references to particular smartphone models and features to support their arguments and at times cited patent lawsuit judgments in an effort to settle disputes.

Discussion participants also contributed their readings of manufacturer advertising and at times expanded these personal interpretations into generalized claims about audience reception. Reader focus thus shifted from devices to their promotion and included assessments of past marketing campaigns, audience receptivity to ad formats, and the role of promotion in the industry. Based on these assessments, some readers offered suggestions to manufacturers for improving the effectiveness of their promotion. For example, given its low market share, one reader advised BlackBerry to develop a TV commercial that could be aired to a wide audience, since most people were unfamiliar

with BlackBerry's new operating system. Moreover, the reader suggested, the commercial should clearly demonstrate the operating system's unique features, since consumers required a strong incentive to abandon their existing smartphone platforms.

In spite of this active engagement by some discussion participants, readers were generally cynical of advertising and believed that it introduced a bias to the marketplace. Rather than engineering and design superiority, marketing budgets were believed to dictate industry winners and losers. An inferior device, readers argued, could nonetheless become successful if it was sufficiently advertised. Negative assessments of advertising were at times also extended to manufacturers themselves as an index of executive leadership. For example, in response to a planned marketing campaign that included an online simulation of their new operating system, readers criticized BlackBerry for using intrusive advertising that would impose itself on online users. Moreover, readers argued, advertising of this sort indicated that BlackBerry executives failed to understand that consumers value their freedom to both select ads and devices. In a similar way, readers criticized Samsung's promotion of its "floating touch" user interface, arguing that company executives were more interested in gimmickry than actual improvements in smartphone utility.

In a similar way, although some readers supported public executive statements that disparaged the competition, discussion participants tended to view these promotional strategies negatively and actively undermined them. When support was expressed, it often took the form of personal experiences that attested to otherwise general executive claims. Much of the time, however, participants revelled in subverting this promotion by way of specific counterexamples and references to market research that contradicted executive statements. More generally, readers interpreted these promotional efforts as lowly attempts by manufacturers to gain customer approval. Rather than focusing on innovation, readers argued, manufacturers resorted to desperate ploys to undermine the competition.

Facts About Artefacts

> [I]t lacks the premium look and feel of the tapered carbon-fiber back on the 9900, and even the faux leather on the 9700. This is not a phone that says "prestige" in any way. (Engadget, 2013a)

> [A]s of this writing, the Snapdragon 600 is the strongest processor on the market, and the benchmarks – as you'll see in the chart below – indicate a solid improvement over the S4 Pro chip. (The Verge, 2013b)

> What concerned us more, though, was that the Xperia Z didn't go beyond six hours on our battery rundown test. Looping video at 50 percent brightness, with WiFi on (but not connected), the phone managed a little over five and a half hours on our first test. (Engadget, 2013c)

Technology media publishers used multiple article formats to provide readers with assessments of newly released smartphones. These formats included brief first-person impressions and photo galleries as well as detailed long-form reviews. For example, industry trade shows provided technology media authors with opportunities to take photographs of new devices that were then published with brief descriptions and retail availability details. This photo-centric publication format provided readers with a visual impression of new devices. At times, devices were photographed alongside other models to construct visual comparison frameworks that foregrounded differences across device size, design, and overall appearance. At other times, competing models were signified in terms of their internal components, which were presented to readers via multi-column tables to facilitate comparison. Taken together, publishers circulated new images and texts that constituted devices beyond their official promotion and advertising. Although these texts drew on publicly available information that was already published online, information was selectively transformed in the service of device comparison and consumer assessment.

First-person impressions, photo galleries, and component comparisons were the most frequently published article types. But as can be seen from the preceding content analysis, long-form reviews were the source of much more reader engagement relative to these shorter article formats. These extended reviews closely situated the smartphone under evaluation in relation to its manufacturer, who, in turn, was then situated in relation to competing manufacturers by way of market share. In so doing, reviewers established

a comparative market framework for evaluation: How does this device compare to other available options? Will it help its manufacturer gain market share given competing manufacturers and models?

This market context was often supplemented with details regarding the manufacturer's strategy as a means of providing readers with insight into the manufacturer's intentions and for identifying manufacturer-specific areas for evaluation. For example, BlackBerry's promotion of its Z10 smartphone and BB10 operating system included a prominent "Keep Moving" slogan to signify an efficient interface for users. Reviews often drew attention to this promotion and included in-depth assessments of the user interface and default applications. In a similar way, HTC's promotion of the HTC One smartphone included a strong emphasis on its "UltraPixel" camera. Reviews, in turn, provided a description of this branding strategy and its underlying technology, which was then evaluated in relation to competing cameras and smartphones.

By including manufacturer promotion in reviews, technology media authors extended the reach of this promotion. At times, positive reviews provided additional support for this promotion, whereas in other instances it was undermined via negative assessments. In both cases, however, reviewers introduced readers unaware of the promotion to new products and brands. These brands were then either strengthened by positive evaluations or undermined by low assessments. In this respect, technology media publishers provided readers with a form of expertise that purported to "cut through" the hype of manufacturers. At the same time, positive reviews strengthened promotional claims and elevated devices that were determined to "live up" to the hype.

Across the examined reviews, authors typically relied on a mix of subjective impressions and objective tests in their evaluation of smartphones. First-person impressions included considerations such as comfort (i.e. holding the phone), screen display, call quality, responsiveness, and keyboard use. Here the reviewer took on the role of a potential owner trying out a new device. These first-person impressions were based on extended use by the reviewer across diverse "real world" use-case scenarios (e.g. outdoor use in direct sunlight).

These subjective impressions, however, were rarely isolated to the smartphone under review. Instead, they were often comparative in nature and based on the reviewer's experiences with other devices. For example, a screen display may be deemed to exhibit sharp text and rich colours, but then compared unfavourably to other devices and diminished via this comparative framework. As technology enthusiasts, reviewers have access to and experience with many smartphones that together set expectations for future experiences that are judged in relation to these standards. Thus, initial subjective impressions were commonly qualified by way of comparisons to past experiences and other devices.

In addition to these first-person impressions, reviewers subjected devices to various trials of strength by way of standardized tests and inscription tools (Latour, 1988) that transformed the internal operation of smartphones into quantifiable measures. Here benchmarking tools played a central role and were used to quantify the performance of internal components, including processors, graphics chips, and batteries, which were subjected to synthetic tests intended to mimic real-world use. The resulting benchmark scores were then assembled together to construct a composite, objectivized portrait of the reviewed smartphone. Although the number and type of benchmarks varied from publisher to publisher, benchmark scores were typically presented graphically in relation to previously tested devices to facilitate reader comparison.

This reliance on benchmarks tended to magnify minor differences between devices that are unlikely to be perceptible in everyday use. For example, although it may seem significant at first glance, it is unlikely that users will perceive a difference between web pages that load in 1200 ms versus those that load in 900 ms. This disconnect between objective quantification and actual use was at times noted by reviewers who supplemented benchmark scores with subjective impressions as a means of qualifying test results. For example, a low processor performance score may be qualified by first-person observations that attest to the phone's responsiveness in the completion of common tasks. These qualifications aside, benchmarks were widely used in reviews to construct quantifiable facts and comparison that were then used to order the space of competing devices.

Smartphones were reviewed in terms of relatively standard areas of focus that included external construction, internal components, and smartphone software. In the case of external appearance, devices were considered in terms of their size and shape as well as their overall design and build quality. Although all of these details were published online by manufacturers and were already available to consumers, reviewers qualified available information through embellishments and comparisons that positioned reviewed devices in relation to the manufacturer's past models and competing devices. Reviewers often drew attention to small differences between manufacturers and models that were constituted as meaningful distinctions. For example, reviews noted size differences (e.g. 9.7 mm versus 11 mm) and weight differences (135 g versus 148 g) that were small and unlikely to be perceptible by users. In a similar way, minor differences across materials and design were often used by reviewers as a basis for distinguishing connotations. For example, polycarbonate plastic phones were more likely to be described as "cheap" or "cheap-looking" relative to aluminium-based phones which were more often described as "handsome," "beautiful," and "prestigious."

In a similar way, even though all manufacturers widely advertised the internal components of their devices, technology media authors tended to republish these specifications as an essential aspect of the review. Most internal components were given some mention by authors, typically as a means of introducing the smartphone under review. These components included the phone's processors, memory, and disk capacity; screen size, resolution, and pixel density; number and types of cameras; network interfaces and protocols; battery capacity; and available ports and sensors. This component introduction often foreshadowed the narrative arc of the review: newer and more expensive components typically resulted in higher benchmark scores and more positive reviews relative to phones with older or less expensive parts.

At times these introductory remarks included detailed discussions focused on components and their manufacturers. For example, if a smartphone was the first to include a newly available system-on-a-chip (SoC), the review would include an extended discussion of this SoC and its performance characteristics. In these cases, reviewers drew on their technical expertise to both explain the underlying technologies behind new components and to situate these components in relation to past innovations and current

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alternatives. This educational function was also implicitly promotional. By moving beyond a mere listing of internal components, technology media reviewers selectively marked certain components as not only noteworthy but as representative of progress in the industry. The smartphones of which they were a part, in turn, were transformed from ordinary into industry-leading.

Reviewers typically devoted some attention to the entertainment capacities of smartphones by way of an examination of games, movies, and integration with home entertainment systems. These tests included first-person impressions as well as standardized benchmarks designed to measure graphics processing performance. For smartphones with extended system integration capabilities, reviewers configured phones as TV remotes and content guides and tested their compatibility across different television sets, digital video recorders, and online media providers (e.g. Hulu, Sky, etc.).

As this discussion has illustrated, comparison played a central role in the assessment process. This comparison was typically limited to a small set of competing devices but at times also included past revisions within existing product lines. Moreover, comparisons were not uniform throughout reviews. Some devices acted as points of reference for some aspects (e.g. design and build) while others appeared as reference points in other parts of the review (e.g. battery testing). To facilitate comparison across areas as diverse as external design, internal operation, and media capabilities, reviews employed a number of visual and textual devices that facilitated the presentation of difference. In addition to staged photographs of competing devices to foreground variation in size and shape, these devices also included sample photo and video galleries to illustrate differences between phone cameras as well as specialized forms of imagery intended to show details that would otherwise be imperceptible to the human eye (e.g. magnification of screen displays to compare pixel arrangements). These genre-specific images were often supplemented with charts and figures which were employed to facilitate visual comparisons of benchmark results. This reliance on specialized imagery also served a rhetorical function for reviews: by drawing on textual and visual conventions common to scientific publishing, reviews signified themselves as both authoritative and objective.

Tribal Assessments: Questioning Facts About Artefacts

> Performance really isn't a key criteria for anyone except reviewers and hardcore gamers … I'm amazed at how reviews spend pages on perfs, and nothing on sound power and quality. Doesn't *everyone* use their phone to play music, podcasts, and radio? (obarthelemy, 2013)

> The article didn't say "9 hours of regular use". It said "9 hours of constant use". Most phones these days go dead after about 4-5 hours of constant use. The fact that this phone went 6.5 hours playing HD video the entire time is damn near amazing. (wicketr, 2013)

> I think it's quite odd that all other reviews I've seen praised the camera, but The Verge's review said it wasn't that good. (Wandering Fire, 2013)

As in the case of published rumours, readers responded to technology media reviews with a mix of enthusiasm and lack of interest towards new devices. While some readers expressed a keenness to possess reviewed phones, others pointed to specific aspects of reviews that dampened their enthusiasm for either the manufacturer or the evaluated device. Similarly, disappointed readers expressed a willingness to delay their purchase decision until future devices were introduced by competing manufacturers. This lack of enthusiasm towards reviewed devices also provided an opportunity for readers to contribute their own assessments of competing models as a means of exploring current alternatives in the marketplace. At times, readers endorsed particular smartphones based on personal experiences or recommendations from friends and family members. In each case, discussion participants shifted attention away from reviewed devices towards competing smartphones and their respective strengths and shortcomings.

Readers who maintained an interest in reviewed devices engaged directly with articles and often provided additional observations and assessments. For example, readers at times contributed their own interpretations of benchmark results, extended comparisons to other devices, and included references to other online reviews as a means of supplying additional information not included in articles. Other online reviews were also cited in the course of arguments regarding the merits of reviewed devices to both support review claims and to contest particular conclusions.

More generally, when readers were critical of reviews their criticisms tended to be directed at publishers, review authors, and testing methodologies. At times readers accused publishers of exhibiting a bias towards particular manufacturers that was purportedly expressed via a disproportionate focus on specific brands and prejudiced product reviews. Review authors were also targeted by readers and accused of writing rushed reviews to gain readership. Rather than devote adequate time to thoroughly evaluate devices, readers argued, authors published hurried assessments that were a disservice to both manufacturers and consumers.

Lastly, test methodologies were criticized from several perspectives by readers with an understanding of their underlying conventions. For example, synthetic battery tests were criticized on the basis that they focused on a single task and were unrepresentative of actual device use. When particular results were contested, device owners supplemented synthetic benchmark scores with their own estimates based on personal experience and everyday use. More generally, readers questioned existing test conventions and their utility to consumers. For example, even though most reviews included processor benchmarks, readers questioned the scope of their application beyond a smartphone's ability to support graphics-intensive games. In contrast, readers argued, all users rely on their devices to make phone calls and listen to music, yet most reviews lack standardized audio tests.

An Ideal Artefact: Expectations and Sacrifices

It all makes the One an impressively powerful phone across the board. Its benchmark scores are off the charts … and in practice the phone is virtually flawless. (The Verge, 2013b)

The Z10 would have been a high-end smartphone eight or twelve months ago, but these days the specs are what would be considered midrange ... (Ars Technica, 2013a)

That glass-coated backing brings the Xperia Z into such esteemed company as the Nexus 4 and iPhone 4S, although Sony has differentiated its design by extending these glass panels to the sides too. (Engadget, 2013c)

Technology media articles explicitly and indirectly articulated an ideal for smartphones. This ideal device is appealing to the eye, "sexy," and "handsome." It is sleek, clean, and made of aluminium as opposed to plastic. It is the product of quality workmanship and even though it is light and thin, it is also solid, durable, and comfortable to hold. Its internal components are recent, high capacity, and powerful. The screen is bright, offers high contrast, and exhibits rich colours. It is easily viewable in direct sunlight and at all viewing angles. Phone calls are also clear, loud, and free of background noise. The ideal smartphone also maintains a fast and reliable network connection. Its camera produces photos and videos that include sharp details and accurate colours across all light conditions. Graphics-intensive games are rendered smoothly and do not exhibit any perceptible lag. And even though its screen and speakers are small, movies and music can be enjoyed with minimal compromise in video and audio quality. The ideal smartphone is fast: it boots-up quickly, responds instantly to user input, and supports multi-tasking without delays. It is also capable of running all day on a single charge and includes a removable battery that can be swapped-out during extended use or travel. The operating system is easy to use, consistent, and can be customized based on personal preferences. Core applications that span email, messaging, and web browsing as well as photos, videos, and map navigation include the latest industry features and behave predictably. Lastly, the ideal smartphone has a wide selection of high-quality applications to choose from, enabling access to popular gaming, social, and media platforms.

Across the examined articles, no actual smartphone exhibited all of these characteristics, but a few models were determined to be close to the ideal. In general, smartphones were grouped into one of three categories: "high-end"; "mid-range"; or "budget." This classification was based on the cost of the device and the quality of its internal components. High-end phones were the most expensive and included the highest performance components. Classification was thus always relative to the current state of the industry, which served as a moving present that made possible relative standing at a fixed point in time. As a result of perpetual innovation in components markets, components that are industry-leading in one year are quickly eclipsed in the next. Consequently, within the span of two years high-end components become mid-range components. And previously mid-range components become budget components.

By this logic, a two year-old, high-end phone becomes comparable to a recently released mid-range phone. Some manufacturers (e.g. Apple, BlackBerry) focused exclusively on the production of high-end smartphones, whereas others (e.g. Samsung, Sony) included a range of devices across all three categories.

This classification not only provided order within a dense space populated by many products, but also was used by authors to limit comparisons between manufacturers to devices within the same category. At the same time, vertical comparisons across categories were also commonly made, especially in assessments of mid-range and budget smartphones. These comparisons were structured by a frame of sacrifice where current high-end devices served as a de-facto standard against which mid-range and budget smartphones were shown to be lacking. Even though no actual devices embodied the smartphone ideal in its entirety, high-end models were mobilized as current approximations of this ideal and functioned as points of reference for lower category phones. Since by definition mid-range and budget devices included lower quality components, assessments often focused on the nature and scale of sacrifice required by users in relation to the de-facto standard. For example, reviews at times compared sample photos taken with a budget phone to photos taken with a high-end phone. In another case, to demonstrate differences in display quality between budget and high-end phones, screen displays were magnified and photographed to illustrate differences in pixel arrangements. The demonstration was then used as proof of the superiority of high-end phone displays.

These examples suggest that comparisons of this sort are not neutral observations, but are better understood as productive frameworks that guide reader attention to details that may not have been noticed or that are otherwise imperceptible to the human eye. As interpretive frameworks, their bias was towards the accentuation of differences that provided the basis for superior/inferior classifications. From the perspective of the user, seemingly adequate photos may be transformed by these comparisons into pale replicas when viewed alongside reference images produced by higher capacity cameras. Thus, vertical comparisons not only support the maintenance of device categories, but also contribute to the mediation of user experience, expectation, and satisfaction.

Interrogating Ideals: Needs, Suggestions, and Critiques

> No SD card slot and no removable battery makes this NOT the One for me. (bignerdblog, 2013)

> I could care less about the MPixel of the camera; it is more interesting to hear what they are doing with the optics, sensor area and what they are doing in software to improve picture quality from the last iteration. (joos2000Wise, 2013)

> The point though is that there is NO "perfect size" for a smartphone. There is only the size and weight that works for you. (ViewRoyal, 2013)

By definition, since budget and mid-range devices do not include the highest performance components, they cannot embody the smartphone ideal. And even though high-end devices have the potential to realize the ideal, they were typically determined to also be deficient in one respect or other. The space of artefacts was thus transformed by technology media texts into an order differences characterized by sacrifices, shortcomings, and trade-offs. Although occasional devices received unequivocal support by technology media authors, many were determined to be less than ideal and thus in need of thorough contemplation by users considering their adoption.

To this end, readers eagerly shared their personal device preferences with other readers and publicly navigated this system of objects. These brief analyses were often based on personal needs, which were translated in terms of functional attributes and evaluated in relation to specific devices. For example, avid music listeners expected to have access to their entire music collection and tended to express a preference for devices with user-expandable disk storage. Based on this need, smartphones with small and fixed storage capacities were dismissed as inadequate.

These short assessments were at times intermixed with longer form evaluations that considered the merits of multiple devices and their respective strengths and weaknesses. In so doing, readers publicly contributed diverse rationales that were used to further order the space of available devices. At one level, these analyses provided other readers with additional expertise beyond that supplied by technology media authors. At another level, however, readers implicitly suggested – and at times explicitly

argued – that smartphone consumption is a highly personal activity that cannot be circumscribed by generic ideals: the "best" device is one that best meets one's needs.

In addition, although some readers welcomed the most recent and highest performance components, readers were also critical of the "spec wars" between manufacturers and questioned the utility of expensive components on several grounds. To begin with, readers argued that high-performance components were not relevant to everyday device use. For example, even though multi-core processors were available, readers pointed out that they were not supported by most applications and that users could not benefit from their additional computing power. Secondly, readers drew attention to the negative consequences of inflated components. For example, discussion participants complained that increasingly large phone screens consumed increasingly more power and quickly drained batteries, resulting in devices that could only be used for short periods of time in between charging. Lastly, readers berated manufacturers for using component upgrades as a means of concealing a lack of meaningful innovation across generations of products. Rather than improving on existing designs, readers argued, manufacturers simply added newer, higher performance components and continued to ignore identified shortcomings.

On this latter note, readers were very forthcoming with their suggestions to manufacturers for improving smartphone designs based on their personal experiences with devices. Among other recommendations, these suggestions included repeat protests against industry trends towards fixed storage capacities and non-removable batteries. Even though readers were well aware of manufacturer promotion of cloud-based file services as a means of extending device disk capacity, they tended to be critical of these services and expressed concern about the privacy of their data. In addition, users with unreliable network service questioned the utility of network-dependent file storage and applications.

Readers thus both questioned and extended the smartphone ideal promoted by manufacturers and articulated across technology media articles. Not only was the concept of an absolute ideal often recast by discussion participants in terms of "fit" between personal needs and device affordances, but the primacy of high performance

components was questioned in terms of its utility and negative consequences. Moreover, readers criticized industry design trends and attempted to define for manufacturers alternate paths of development based on their shared needs and assessments of existing devices.

Consumption Modes

Across the examined technology media articles, smartphones were signified primarily in terms of instrumental, expressive, and hedonistic modes of consumption. The smartphone review in particular drew on all three of these frameworks and was exemplary of the ways in which smartphones were interwoven with modern, technology-focused lifestyles. Although other article formats also drew on these modes of consumption to some extent, smartphone reviews positioned individual devices within a hierarchy of objects by drawing on consumption modes as axes for comparison.

For example, through a focus on call and camera quality, reviews provided readers with an instrumental assessment of smartphones and their internal components. The provision of this utility was typically qualified by reference to device category and price. Comparisons to other smartphones within the category were used to further refine the assessment and position devices in relation to each other. In the case of budget and mid-range phones, a framework of cost/value was often used to structure the review. Devices that provided the highest quality utility for the lowest cost generally received the most favourable ratings.

Similarly, reviews drew on cultural attributes to signify smartphones as expressive artefacts that may confer particular characteristics to their owners. For example, in their assessment of external appearance, authors constituted some models as "sexy" and "prestigious" relative to others. In so doing, reviewers positioned devices along an expressive axis characterized by esteem and prestige. Devices that were deemed "cheap-looking," "boring," and "bland" lacked this prestige and were unlikely to garner esteem from others, whereas "sexy" phones could be used in public as social resources with positive connotations for owners.

Smartphone ratings also signified devices in terms of their overall worth and in so doing provided readers with a means of reading themselves and others. Here the highly-rated smartphone represents a knowledgeable and skillful choice in a complex marketplace characterized by many devices and options. Understood as a system of classification, reviews provide a hierarchical order to a space of objects that functions as an interpretive framework for users familiar with technology. In turn, the informed selection of a particular device represents a form of cultural expertise that may be interwoven with identity projects. It may also be used to classify others who are deemed to be consuming well or poorly in relation to this framework.

Reviews evaluated smartphones as artefacts that had the potential to please the senses and in so doing constituted devices in terms of a realistic hedonistic consumption mode. Relative to other devices, some smartphones were deemed to be more enjoyable to look at, hold, and use. In addition to external construction, internal components such as the screen display were evaluated with respect to colour, contrast, and brightness, which together represented the device's capacity for visual pleasure. In a similar way, the display, processor, and speakers were evaluated using sample games and media to gauge the phone's ability to facilitate play and enjoyable experiences. In each case, smartphones were assessed with respect to their capacity to please the senses and to facilitate pleasures centred around technology use.

The high frequency publication of rumours and pre-release announcements also provided many resources for readers to engage with smartphones via imaginative hedonistic modes of consumption. The inclusion of patent and trademark applications, leaked information, and manufacturer promotion in articles supported speculation about future products and engagement with novel device configurations that were still unavailable on the market. A focus on hardware design (e.g. curved glass), internal components (e.g. camera), and software innovation (e.g. eye control) provided readers with diverse starting points for fantasy play and engagement with imagined artefacts.

Lastly, it should be noted that postmodern logics of consumption were not employed by authors in the examined articles. There was, however, a notable exception where a progressive framework was used in relation to the production of smartphones.

The article in question reported on labour violations by a circuit board manufacturer in China who illegally employed children on its assembly line. Although the labour violation formed the initial basis of the reporting, the remainder of the article was devoted to a description of Apple's supplier audits, including their scope, third-party verification, and consequences for delinquent suppliers. In addition to drawing attention to problems in the industry, the article provided evidence of changes being undertaken by manufacturers to ensure that smartphones were being produced in accordance with local labour laws. As such, it was a notable exception in a sea of articles focused on consumption devoid of labour or environmental considerations.

Shifting focus from publishers to readers, discussions primarily drew on instrumental modes of consumption to signify and interpret devices, although expressive modes were also employed at times in relation to smartphone brands. Whether initiated in response to rumours, announcements, or reviews, discussions often included pragmatic assessments of smartphones based on currently available information and readers' experiences with specific manufacturers and models. These evaluations supplemented the authoritative accounts circulated by technology media publishers and at times challenged expert assessments via first-hand knowledge of devices.

Moreover, occasional reader discussions focused on the expressive dimensions of smartphone ownership and the connotations of specific smartphone brands. For example, some readers argued that Apple device owners were highly invested in style and preoccupied with newness, whereas Samsung owners were more pragmatic and less concerned with external appearances. These interpretations were at times narrowed down to specific smartphone models, such as when readers asserted that Galaxy S3 owners exhibited a superiority complex or that Nexus 4 owners were technology experts, for example. This mapping of social and product space did not go unchallenged, however, and was often a source of contention among discussion participants. Resisting simple classifications, some readers argued that anything that can be deduced about a particular brand or group of owners can just as easily be asserted about other brands and users.

Texts, Temporality, and Obsolescence

As distributors of various texts focused on smartphones, technology media publishers contribute to the signification of devices over the course of their entire life cycle. During their conception, smartphones exist primarily as texts, most of which are private to manufacturers, such as design plans and early specifications, for example. But at this early stage, there are also events that become the source of texts that enter public view by way of technology media, such as executive statements that hint at new devices, trademark applications that suggest future smartphone features, and information leaks that point to possible new device configurations.

During their birth, when actual artefacts start to be produced, technology media publishers begin to circulate additional texts based on leaked images of early prototypes and factory samples. During later stages of development, technology media authors comb public regulatory applications that include references to anonymized devices and deconstruct these documents to identify models and their expected carrier availability. Details about component orders and supplier contracts may also publicly surface and become the focus of coverage and speculation.

As manufacturers prepare for product launch, the smartphone's transition into adulthood is the source of new events and additional texts distributed by technology media publishers. As initial production orders are completed, reporters keep an eye out for devices and at times catch executives using unreleased smartphones in public. Official advertising and teasers intended to fuel anticipation are also widely covered by technology media publishers during this time. Likewise, details about scheduled launch events begin to surface and are widely circulated. In preparation for the product launch, technology media authors provide readers with summaries of rumours and speculation about the likelihood of possible new features for soon-to-be released devices.

A smartphone's official launch event is not only covered by technology media publishers, but is also the source of additional commentary by authors and marks the start of a major phase in the manufacturer's promotional campaign. Additional print ads, television commercials, and online videos are released and at times become the focus of technology media articles. Carrier and retail availability announcements are widely

circulated by publishers and the first in-depth reviews are published. Technology media articles flourish and multiply as these initial assessments are soon accompanied by additional analyses, comparisons, and qualifications.

As excitement wanes and smartphones begin to widely circulate there are fewer promotional events and new sources of information. The publication frequency of articles declines and attention shifts to other devices in earlier stages of the product life cycle. As the smartphone continues to age, there are fewer references to it in newly published articles and it eventually no longer appears as a point of comparison with other devices. Although past texts continue to be available and may be retrieved via online search tools, the smartphone eventually disappears completely from new articles.

Looking at this product and publication life cycle in its entirety, early stages are characterized by relatively few events and technology media texts, whereas product pre-release and release include a high concentration of events and corresponding articles. Some of these events correspond to manufacturer promotion, but technology media publishers are also a primary source of events, such as when they break new rumours or publish commentary and reviews. Mirroring to some extent the beginning of the cycle, later stages are characterized by a declining frequency of events and articles. During this final stage, technology media websites function primarily as digital archives that house texts from the entire life cycle.

This publication cycle provides support for smartphone obsolescence in several distinct ways. Through their focus on rumours, manufacturer promotion, and industry events, technology media publishers give primacy to new products and amplify manufacturer efforts to create demand for novelty. Like traditional news outlets, technology media publishers grant prominence to recent events and new information. But unlike traditional news media, articles are largely confined to new products and oriented towards their future possession. Thus although the starting questions may be similar to traditional news media (What's new? Why is it significant?), these questions are limited to considerations of consumption (When will it be available? Where can it be purchased?).

Smartphone reviews also contribute to the aging of smartphones by actively downgrading the status of devices within a continually shifting hierarchy of objects. Through their reliance on benchmark scores, reviews create and circulate facts about newly released devices and these scores, in turn, then serve as points of comparison for subsequently released devices that include higher performing components. In the process benchmark leaders are continually transformed into benchmark laggards and serve as props that attest to the superiority of newly released products. These methodologies contribute to an ideology of progress where objective measures are made to speak on behalf of improvements that are unlikely to be perceptible in actual use. This is not to say that over longer periods innovation does not occur, but that this innovation will not be reflected by short-term comparisons that tend to accentuate minor differences. In practice, despite variable benchmark scores, devices with similar components manufactured within close proximity of one another are more likely to be similar than different in everyday use. Benchmark scores and comparisons obscure these similarities and instead direct attention to magnified differences and the superiority of newer devices.

Technology media publishers also undermine manufacturers and smartphone obsolescence in several ways. To begin with, to the extent that reviews engage directly with manufacturer promotion and provide assessments of heavily advertised features, they provide readers with a form of expertise that considers the utility of novelty in everyday use. This instrumental assessment, which often includes first-person impressions and testing by reviewers, has the potential to undermine manufacturer created incentives for voluntary replacement of existing devices. At a more general level, negative reviews published immediately after a product launch have the capacity to diminish collective enthusiasm for new devices. Their publication at a critical juncture in the smartphone life cycle, following an extended period of rumours, promotion, and anticipation has the potential to displace new devices from the ideal realm of imagination to the realm of disappointment. It should be noted, however, that this dynamic has a positive correlate: favourable reviews may provide additional support for novelty and have the capacity to nourish enthusiasm for newly released devices.

In addition, authors at times question the "spec war" between manufacturers and in so doing provide readers with critical interpretations of the industry and its products. This structural critique focuses on the questionable value to users of manufacturer one-upmanship across internal components, such as processors and screen displays, for example. This critique of the industry provides readers with an alternative framework for the interpretation of product releases and heavily promoted device components.

Lastly, by including articles that focus on smartphone hacking, publishers introduce readers to new social practices that may be directed to extend device lifetimes. Although technology media articles were generally not primary sources of this expertise, they nonetheless normalized these community practices through their inclusion in the publication cycle and extended their reach to readers who may be unfamiliar with smartphone hacking. In addition to providing references to online resources, technology media authors also contextualized hacking practices in terms of common motivations (e.g. control over software updates), risks and dangers (e.g. inoperable device), and best practices (e.g. backup personal data).

With respect to obsolescence, hacking communities provide users with software that may be used to extend the lifetime of devices beyond the short support window provided by manufacturers and carriers. For example, even though security updates are released by carriers for new smartphones, these are often not extended to older devices that are no longer supported. Hacking communities overcome this market-imposed limitation via the inclusion of security updates in their own unofficial software releases that are offered to users at no cost. Hacking communities also introduce unofficial operating system customizations and applications that enable users to add new functionality to their smartphones without needing to replace them.

Shifting focus from publishers to readers, discussions occasionally focused on rapid product release cycles, which were openly criticized. However this criticism was rooted in frustration towards manufacturers, who were berated for releasing products that eclipsed too quickly recent consumer purchases. The critique was thus based on personal loss within a context of product investment as opposed to being based on ecological grounds. Some readers defended manufacturers and argued that product

obsolescence was a necessary effect of market dynamics. In order to succeed in the marketplace, these readers asserted, manufacturers needed to rapidly release new products and closely match offerings introduced by competitors.

In addition, reader discussions that centred around device replacement often drew on and implicitly reproduced the assumption that a smartphone should be replaced every two years. This norm and practice is commonplace in North America where mobile carriers subsidize device purchases in exchange for annual contract commitments from consumers. These discussions at times included detailed possession histories contributed by readers. In some cases, readers catalogued their recently owned and abandoned smartphones as a means of demonstrating their enthusiasm for new technology or disappointment with past devices. In both cases, recurrent and frequent smartphone replacement was unquestioned by discussion participants, who instead focused on available market options and rationales for future possession.

Lastly, as the preceding discussion has illustrated, published rumours were greeted by readers simultaneously with enthusiasm and disappointment. On the one hand, readers expressed their desire for rumoured devices and contributed to collective forms of anticipation for new products. On the other hand, rumours were the basis for negative expressions towards soon-to-be released devices. Rather than commit to these products, readers expressed a willingness to delay their decision until additional models became available at some point in the future. This collective expression of waiting for the next "best thing" cast doubt on existing devices and countered enthusiasm for soon-to-be released smartphones.

Conclusion

As the content analysis at the start of this chapter has demonstrated, technology media publishing was event-based and prioritized information recency: publishers competed among each other to break news stories that provided readers with brief summaries of mobile industry events. This shallow news reporting cycle was complemented by occasional in-depth analyses of the industry, including commentary

that focused on market dynamics, manufacturer strategy, and the significance of particular products.

Smartphones were the focus of most technology media articles across the entirety of the product life cycle. Pre-release rumours were published with the highest frequency relative to all other article formats. Product announcements were also frequently published and were often followed by the publication of both short-form and long-form device evaluations. In addition, by way of continually updated data on manufacturer and consumer activities, articles were regularly devoted to establishing the current state of the smartphone market and identifying user adoption trends.

Relative to smartphone-focused articles, operating systems, applications, and accessories received less attention from technology media publishers. Articles were mostly limited to brief summaries of official announcements circulated by operating system and application developers. Likewise, product announcements were frequently published to introduce readers to new smartphone accessories. Although software and accessory rumours were published to some extent, these articles appeared infrequently relative to official product announcements.

Alongside texts devoted to diverse artefacts, technology media publishers also circulated articles that focused on smartphone manufacturers and the dynamics of the mobile industry as a whole. These articles included news and commentary devoted to manufacturer strategy, financial performance, and production activity. Industry trade shows and events were also prominently featured by technology media publishers and were a primary source of product news and announcements. At a broader level, technology media authors reported on corporate ownership, partnership, and management changes within the industry and covered legal disputes between manufacturers. This account was complemented by occasional articles that focused on state regulation, although much of this coverage was limited to the U.S. market.

At the level of publication formats and frequencies, technology media publishers functioned primarily as content aggregators of diverse types of information that was often published elsewhere online. Moreover, much of this content was promotional in nature and extended the audience reach of manufacturers, mobile carriers, and software

developers beyond their own respective media channels. At the same time, technology media publishers also provided readers with observations of the mobile industry as a whole via coverage of events that were not focused on specific products. Both this promotional aggregation and industry observation were interwoven with forms of commentary and assessment that provided readers with interpretive resources for making sense of a complex field of actors, artefacts, and social practices.

The smartphone market was widely featured in technology media articles as a contested object and as stable background context in writing about manufacturers and devices. In its varied guises, the "market" served as an index of consumer preferences, a gauge of the success of manufacturer strategies, and as an entity that demanded explanation. As a common reference point in articles, it provided an implicit promotional function to market leaders and, conversely, drew attention to the struggles of market laggards. Although manufacturers at times published their own research data in an effort to favourably position themselves in relation to the market, technology media authors often critically evaluated this research and undermined these promotional efforts. Similarly, readers circulated a plurality of conflicting interpretations of the market that supplemented authoritative analyses. Although there was general agreement about the value of market competition for consumers, discussions were characterized by repeat disagreements regarding market research and what it implied about user preferences in relation to specific manufacturers and devices.

The publication of product rumours and articles devoted to manufacturer promotion extended the promotional reach of manufacturers in both time and space. However, their reception by readers was contradictory. On one hand, articles were the basis for collective expressions of enthusiasm and anticipation for new products. On the other hand, they provided readers with an opportunity to assess new smartphones and publicly express a lack of commitment towards their future possession. In addition, technology media authors occasionally provided extended commentary that assessed manufacturer promotion and critiqued industry design trends. These articles as well as product rumours more generally provided readers with an opportunity to reflect on the state of innovation in the industry, which was a topic of repeat conflict in discussions. Although some readers defended manufacturers and gradual improvements to existing

designs, others were critical of manufacturers and their reliance on marketing gimmicks to conceal a lack of meaningful innovation.

Readers also offered their interpretations of manufacturer ads and at times expanded these personal readings into assessments of marketing campaigns and their likely reception by audiences. When ads were deemed to be ineffective, readers offered suggestions to manufacturers for improving their promotional strategies. These constructive expressions notwithstanding, readers tended to be cynical towards manufacturer promotion. They accused manufacturers with large marketing budgets of introducing bias to the marketplace and creating market success for otherwise inferior devices. Likewise, readers tended to undermine the marketing efforts of company executives by contributing personal experiences, counterexamples, and online resources that contradicted promotional claims.

Manufacturer promotion was also featured in reviews of smartphones, which included assessments of heavily advertised device features. In this respect, technology media publishers offered readers a form of expertise that purported to "cut" through the hype of manufacturers. By evaluating the nature of utility beneath marketing veneer, publishers circulated interpretive resources for consumers trying to navigate a complex space of artefacts and promotion. At the same time, through their reliance on smartphone classifications, comparisons, and synthetic tests, publishers introduced new mediations and expectations that tended to amplify minor differences between devices and, in turn, contributed to the complexity of this space. Active readers engaged with these assessments by providing their own evaluations of reviewed devices, which were supported by references to technical expertise, personal experience, and additional online resources. Readers also at times questioned review authors and their test methodologies. Synthetic benchmarks in particular were criticized as unrepresentative of actual device operation and at times supplemented by readers via impressions based on first-hand use.

Both technology media authors and readers made use of device categories to order the space of available smartphones. This system of classification served as a basis for the enactment of both intra-category and inter-category comparisons that

further structured the space of devices. In general, "high-end" devices served as a de-facto standard for experiences and expectations against which lower class devices were compared via a framework of sacrifice and loss. Although enthusiasm for new technology was widespread, readers at times questioned the utility of high performance components and resisted the smartphone ideal articulated by manufacturers and technology media publishers. As an alternative, readers advocated a model based on "fit" between personal needs and device affordances. Readers also attempted to influence manufacturers by arguing for specific improvements to existing devices. In particular, readers criticized manufacturers for blocking access to device batteries and excluding storage expansion options from existing designs.

In their discussion and assessment of smartphones, technology media authors signified devices primarily via instrumental modes of consumption, although expressive and hedonistic logics were also used at times to structure narratives. Despite some notable exceptions, articles generally did not draw on either progressive or postmodern consumption logics. Reader discussions were also primarily focused on the instrumental dimensions of smartphones, including their cost, availability, and design as well as the performance of internal components. Discussions occasionally shifted to the expressive dimensions of smartphones but were characterized by disagreement regarding the connotations of specific brands and models.

Lastly, technology media publishers were found to both support and undermine smartphone obsolescence. By giving primacy to new products, publishers amplify manufacturer efforts to create demand for novelty. Likewise, by continually comparing previously released devices to new smartphones that outperform these older counterparts, publishers contribute to the active aging of devices that are more likely to be similar than different in everyday use. At the same time, publishers circulated assessments of manufacturer promotion and evaluated the utility of new technologies. These assessments, when they are negative, have the potential to dampen collective enthusiasm for novelty and newly released products. Authors also questioned the benefits to users of manufacturer one-upmanship with respect to smartphone components and in the process provided readers with critical interpretive resources for making sense of the industry and new products. In addition, publishers circulated

references to online resources that enable users to extend the lifespan of their smartphones beyond the short window of support provided by manufacturers.

Active readers were a source of both shared enthusiasm and disinterest towards new smartphones. These contradictory tendencies thus both supported and undermined manufacturer efforts to stimulate demand for new products. Although some readers were critical of rapid product release cycles, this criticism was not based on ecological grounds but instead was framed in terms of personal loss, where a recently acquired product had been eclipsed by a newer model. Equally importantly, readers drew on and reproduced consumption norms that have become commonplace in North America. Recurrent and frequent device replacement was understood to be a natural and normal practice associated with smartphone consumption that was not questioned in the course of reader discussions.

Chapter 6.

Towards Green Media and Democratic Rationalization

Introduction

Having presented the research findings in the previous two chapters, this chapter considers these findings with respect to the core theoretical themes introduced at the outset of the dissertation. The chapter begins by situating smartphone advertising within the history of advertising practice and demonstrates how manufacturers employ established cultural frames for signifying commodities that have become commonplace in consumer society. The discussion then considers the smartphone as a technology, a particular type of commodity that mediates perception, communication, and the enactment of networked individualism. It is argued that manufacturer advertising draws upon the smartphone's capacities of amplification and invitation while simultaneously concealing its modes of reduction and inhibition.

The second part of the chapter examines the role of technology media publishing in relation to status, scarcity, and expertise. While the distribution of interpretive resources by technology media authors may be understood as a form of knowledge democratization, it is argued that technology media publishing simultaneously produces a taste for novelty and prestige that strengthens the legitimacy of manufacturer promotion. Moreover, while this expertise has the potential to encompass the social and environmental conditions of technology production, the available evidence suggests that rather than reducing its effects, technology media publishing contributes to the prevalence of commodity fetishism in consumer society.

In the third part of the chapter, the discussion turns to examine reader engagement and sociability centred around technology media publishing as a form of consumer tribalism. The research findings are analyzed with respect to the types of participation, expertise, and cultural capital that circulate among technology enthusiasts. These communicative practices are considered in relation to smartphone promotion with an emphasis on the ways in which enthusiasts contribute to the propagation of technology and enact diverse consumer roles in the smartphone market.

Lastly, the chapter provides an assessment of the research findings with respect to the theses of reflexive modernity and risk society. The discussion considers the circuit of promotion in relation to technology obsolescence, distinguishes commercial and public inputs that co-determine smartphone design, and explores emergent possibilities for green citizenship and governance that may contribute to change in the smartphone industry. The discussion concludes with a summary of the dissertation's contribution to the field and an assessment of its limitations and implications for future research.

Advertising in Historical Context

From an economic perspective, marketing and advertising are mobilized to address marketplace problems. Whether this entails the introduction of new products or expansion into new markets, producers employ marketing and advertising in their efforts to stimulate demand and consumption. As the second chapter has illustrated, this economic function is tightly interwoven with cultural production, since in order to be successful commodities must be symbolically coded in ways that enable their meaningful integration into people's lives. Thus in addition to its economic function, advertising is a cultural institution that draws upon and contributes to society's systems of meaning. Although marketers can never fully control the process of meaning-making and must contend with other cultural influences and consumers' interpretive autonomy, they hope that their offerings will at least be entertained by consumers and that some of their suggested meanings will resonate and become associated with products.

As Leiss et al. (2005) point out, advertising texts are an integral part of the discourse of consumption that document the strategies of advertisers in their efforts to

negotiate with consumers the meanings of goods. Although cultural symbols are not always easily disciplined, advertisers combine systems of meaning in the service of promotion and attempt to establish symbolic relationships between commodities, people, and settings. Equally importantly, the types of messages that are circulated by advertisers are specific to historical, geographical, and cultural contexts. As such, they are dependant on many factors, including styles and tastes, media technologies, professional practices, and audience literacies.

Despite this contextual variation, Leiss et al. (2005) demonstrate that distinct cultural frames may be identified that correspond to different moments in the history of advertising. As ideal types, these cultural frames represent patterns of integration between historically specific semiological codes and their modes of representation. By way of an examination of Canadian magazine advertising spanning the 20th century, Leiss et al. (2005) argue that new cultural frames do not eliminate older ones but rather supplement them and expand the toolbox available to advertisers. Based on their longitudinal study, they suggest that the history of advertising may be divided into five overlapping phases that correspond to the development of recognizable cultural frames that define patterned relationships between people, products, and well-being.

According to Leiss et al. (2005), during advertising's idolatry/utility phase, spanning 1890 to 1925, goods were the central focus of ads which spoke primarily in terms of product benefits and qualities. Advertising during this time was characterized by a reverence for newly available goods made possible by expanding mass production. This celebration of industrialization entailed a veneration of the object that was expressed through a discourse of pride, achievement, and quality. But to the extent that products were largely associated with traditional modes of consumption and existing patterns of life, this cultural frame provided limited support for the development of a consumer society.

By the late 1920s this limited discourse was expanded by advertisers who increasingly began to make use of abstract associations to suggest a broader significance for goods beyond their immediate utility (Leiss et al., 2005). During this phase of iconology/symbolism, spanning 1925 to 1945, there was a shift from a

denotative to a connotative discourse about goods and a corresponding reliance on metaphor, analogy, and suggestion in ads. Beyond their immediate benefits, for example, cars became expressions of a modern sensibility and soaps were said to represent family care. Although people appeared in greater proportion alongside goods, they were not depicted as autonomous individuals but rather as exemplars of dominant social values who embodied family structure, social differentiation, and hierarchical authority. As such, Leiss et al. (2005) argue, the relationship between people and goods during this time remained relatively rigid and closely tied to reigning social values.

According to Leiss et al. (2005), advertising expanded beyond the limits of symbolism only after the second world war, during which time goods increasingly entered the domain of everyday experience and consumers were invited to consider their power on a personal level. This phase of narcissism/personalization, spanning 1945 to 1965, is marked by a strong emphasis on psychological states and the myriad satisfactions that may be gained via consumption. During this time, people continued to be widely depicted in ads but increasingly as part of emotional social interactions (e.g. romantic, familial) that were mediated by goods endowed with the capacity to enhance relationships and influence others' judgments.

As Leiss et al. (2005) suggest, having drawn attention to their utility, wider significance, and power to satisfy, advertisers gradually began to signify products in relation to distinct activities shared by social groups, a strategy that reflected and contributed to increasing fragmentation in society. Spanning 1965 to 1985, the phase of totemism/lifestyle is characterized by its emphasis on social identity and the totemic function of goods. Alongside distinct forms of dress and behaviour, goods became increasingly signified as emblems of group membership. In this cultural frame, consumption was situated as a public spectacle that both reflected patterns of social differentiation and provided consumers with identifiable pathways of social aspiration.

Based on their analysis of contemporary advertising practice, Leiss et al. (2005) identify a recent shift in reader address that they believe represents advertising's adjustment to rising audience literacy and consumer savviness. This change is characterized by a declining reliance on direct prescriptions which are increasingly

replaced by more complex formats and tropes. Rather than dictate to readers, Leiss et al. (2005) argue, ads increasingly offer resources, ideas, and moments of pleasure as means to stimulate engagement. In addition to this shift in address, since the 1980s advances in digital technology have been central to transformations within the industry (Leiss et al., 2005). Facilitated by innovation in graphic design, animation, and editing, advertisers have developed new modes of representation where everyday settings may be easily supplemented by elaborate visual overlays and goods can be easily linked to hyper-real environments and fantastical myths.

Leiss et al. (2005) argue that these historical changes have been integrated within a fifth cultural frame that at once responds to and contributes to the demassification of society. In the "mise-en-scène" cultural frame, which becomes increasingly visible in the 1980s, goods become increasingly signified as stage props for the enactment of consumer-directed scenes and scripts. In this demassifying strategy, even though the props are mass produced commodities, consumers are positioned as artisans of meaning-creation endowed with the power to transform goods in accordance with their unique sensibilities. As directors in charge of the scene, consumers are invited to appropriate goods and to have their self-created uniqueness recognized and celebrated by others.

By charting these historical developments, Leiss et al. (2005) draw attention to the gradual evolution of advertising practice and provide useful guideposts that mark the direction of change within the industry. Although the model centres around identifiable phases, Leiss et al. (2005) point out that these phases are additive, since new strategies supplement previous techniques and expand the toolset available to advertisers. Adjusted to reflect contemporary sensibilities and styles, today all of the cultural frames are employed and combined by advertisers to signify commodities (Leiss et al. 2005).

The Cultural Frames of Smartphone Advertising

If we compare online product websites to the magazine advertising at the heart of Leiss et al.'s (2005) study, we can note some important differences. To begin with, although general interest magazines continue to be published today, the dominant trend

within the magazine industry has been one of audience segmentation. Today niche magazines target audiences not only by gender and social class, but also by well-defined life stages and lifestyles and their associated modes of consumption. This segmentation enables precise targeting of content and advertising to each audience. In contrast, the product websites analyzed for this study were published online and made available to anyone with access to the internet. Although smartphone manufacturers may tailor their advertising to specific target markets via niche media channels, the primary product website is accessed by diverse audiences that span multiple consumer segments.

With respect to time and space, traditional marketing is also more diffuse, since it includes ads across diverse media that are distributed over an extended period of time. The ads themselves, however, are compressed in terms of time and space. Magazine ads, for example, typically span a single page. Likewise, TV commercials are short and fleeting. Product websites, in contrast, are not limited by these constraints. Since manufacturers have full editorial control over their websites, online space may be allocated freely across text, images, and video of arbitrary size. In a similar way, content may be organized to facilitate diverse forms of audience engagement, including short website visits as well as extended modes of product exploration. Moreover, although the product website may be tightly integrated with traditional marketing strategies, it nonetheless has the capacity to function as an independent vehicle of promotion regardless of audience awareness of other media channels.

As the following discussion will illustrate, these affordances are mobilized by smartphone manufacturers in the service of an aggregate appeal that makes parallel use of all of the cultural frames identified by Leiss et al. (2005). In their historical study of magazine advertising, cars and technology were framed primarily in terms of their utility. Although smartphone manufacturers continue to rely on this frame, product websites make use of the full spectrum of cultural frames to signify smartphones and in so doing provide consumers with diverse pathways for consumption of a mass produced commodity.

As the findings in Chapter 4 demonstrate, with respect to utility smartphones were constituted by manufacturers as artefacts that made possible the achievement of many tasks and which greatly expanded users' capacity for action. Spanning activities such as communication, media production, and entertainment, smartphones were signified as useful devices that could be flexibly adapted by different individuals to diverse contexts of use. And while smartphones provided users with many affordances, users were ultimately the final arbiter in terms of their actual function. Moreover, smartphones were signified as artefacts that altered users' experience of time and space in beneficial ways. Not only were smartphones said to make possible more activity in less time, but this capacity was independent of place and could be realized everywhere.

Manufacturers also made use of symbolism to suggest a wider significance for technology and to expand the possible meanings of smartphones beyond their immediate utility. In this respect, devices were signified as works of art and manufacturers were positioned as artisans whose attention to detail was worthy of appreciation. Smartphones were constituted as feats of science that attested to the persistent efforts of manufacturers, designers, and engineers. As a wonder of the age, the smartphone was signified as an artefact that made possible what was previously thought to be impossible and as such was positioned as a symbol of modernity. As an expression of progress, devices were situated in relation to past models that served as reference points for succession and improvement. More broadly, smartphones were signified as material realizations of the best that a society could achieve.

At the level of personalization/narcissism, affective associations were mobilized by manufacturers to provide a relational template for consumer connection with their devices. Third-party awards and direct consumer expressions spoke in terms of joy, love, and affinity for devices and the satisfactions inherent in their consumption. Aside from their utility and wider significance, smartphones were positioned as sources of pleasure that enabled enjoyable experiences, were fun to use, and were pleasing to the senses. Smartphones were also anthropomorphized as companions who not only reliably carried out user commands but who monitored user activities and adapted their behaviour accordingly. A reliable, responsive, and satisfying human relationship thus

served as a template for the bond that consumers were encouraged to develop with their devices.

Although a totemic relation with respect to distinct social groups was not identified in the findings presented in Chapter 4, a specific lifestyle may be discerned centered around smartphone consumption. To begin with, when people were depicted they tended to be children and young adults. Older adults were at times also present, but this presence was often indirect and implied, such as when children were framed inside smartphone screens as subjects of photo and video capture. Smartphone consumption was thus positioned as part of a youthful lifestyle that could be enacted regardless of one's age (albeit with some limits given the absence of aging adults).

In addition, this lifestyle was permeated by creativity facilitated by photo and video production. As raw input at the heart of the process, everyday life was constituted as a sequence of moments that demanded capture, curation, and distribution. As a minimum, and like much of traditional photography, this ordering and capturing of experience encouraged ongoing media archiving. Beyond this archival function, however, consumers were endowed with distinct aesthetic sensibilities that could be expressed via special effects, editing tools, and other smartphone affordances capable of transforming everyday experiences into extraordinary media productions. Lastly, as the discussion in Chapter 4 has suggested, smartphones were positioned as integral to sociability, play, and relaxation. In each case, manufacturers not only provided suggestions for enhancing existing social practices but also encouraged new modes of social interaction and content consumption centred around new technologies.

Manufacturers thus employed multiple cultural frames in their efforts to meaningfully integrate otherwise lifeless artefacts into the rich fabric of social and cultural life. Understood independently, each cultural frame foregrounds particular relationships between people, devices, and contexts of reference. Taken together, the identified frames contribute to an aggregate totality that may be productively understood in terms of Leiss et al.'s (2005) mise-en-scène cultural framing. In this respect, and in line with the analysis in Chapter 4, smartphones were signified as artefacts for the

enactment of a dynamic individuality within a cultural milieu that encourages individuals to have their self-created uniqueness recognized and celebrated.

Understood in this way, the expandable utility made possible by application marketplaces not only supports device flexibility across users but is also mobilized in manufacturer advertising as a form of potential that can be realized in accordance with each individual's fluid demands and tastes. The smartphone is thus both a utility knife and a chameleon: a shape-shifting artefact that may be continually adapted by the user to the requirements of different scenes and evolving life scripts. In a similar way, artificial intelligence and dynamic device adaptation simultaneously speak on behalf of efficiency of operation and the claim that no two individuals are alike. The smartphone was not signified as a generic companion, but rather as an intelligent assistant who recognizes the uniqueness of every individual and gradually learns each user's distinct manner of speaking, acting, and being in networked space. Lastly, as an integral component of a creative and social lifestyle, the smartphone was constituted as a medium for the expression of a distinct aesthetic sensibility and approach to life. Here the user simultaneously plays the role of scriptwriter, director, and actor as well as photographer and filmmaker tasked with capturing the performance. In turn, the social network is positioned as an always-available audience that welcomes and celebrates each one-of-a-kind production.

The Myths and Mediations of Technology

As meta-themes, individuality and distinctiveness feature prominently in manufacturer advertising of smartphones. As values and norms, however, they are never very far from the networks that make possible their enactment. In this respect, connectedness is employed as a necessary counterpart for the realization of individualism in contemporary society. Within a broader historical context, the growth in recent decades of data networks at the heart of smartphone technologies has once again elevated communication as a dominant symbol of modern living (Wernick, 1991). Although technology myths have always been rooted in conceptions of progress, like technology itself they too need to be upgraded to reflect changes ushered in by science and innovation. The rocket has thus been superseded by the microchip which in turn has

been superseded by the network as a symbol of progress. The meaning of modernity today is thus closely associated with the control and movement of information through space made possible by computers and their interconnection (Wernick, 1991).

Understood within the history of individualization, the promise of connectivity functions as a powerful counterweight to more dystopian visions of modern society centred around anomie and social isolation. In the 20th century the multi-generational household has been replaced by the nuclear family which is being gradually superseded by the shared family residence (Beck and Beck-Gernsheim, 2002). As individuals first and foremost, family members today share a limited common culture while simultaneously living in highly personalized social, cultural, and media spaces. Moreover, this progressive individualization is accompanied by geographical dispersion where family members and friends reside in different cities and countries as a result of increasingly globalized labour markets. Given this social context, networked communication may be readily deployed as a means for the revival of a lost communion and as a promise of social cohesion despite increasing cultural fragmentation.

As the findings in Chapter 4 and the discussion in the preceding section illustrate, smartphone advertising may be understood as a fiction that attempts to interweave the social subjects and practices of individualization with the proliferating artefacts, networks, and flows of capitalist technological development. This fiction includes suggestions for the enhancement of existing social and cultural practices as well as ideas about new modes of living made possible by technology. Unlike carbonated beverages and chewing gum, however, the suggested associations are not entirely arbitrary in the sense that technology has historically been integral to transformations in economic, social, and cultural life. The fiction is thus imbued with a degree of credibility that stems from the recognition that the smartphone is an object that belongs to a distinct class of artefacts. In addition, to the extent that the smartphone represents a fusion of personal computing and telecommunications, both of which have recently been widely adopted and celebrated, its advertising may easily draw on established social practices and popular cultural associations.

At the level of function, the smartphone is analogous to the networked personal computer. Both enable synchronous and asynchronous modes of communication that may be used for personal expression and social interaction. And with the proliferation of diverse online social spaces, both support participation in communities of interest fostered by networked communication. Likewise, both technologies facilitate rapid information retrieval and may be used to access the full spectrum of available online services. Lastly, even though there are significant hardware disparities between personal computers and smartphones, both facilitate the creation, editing, and distribution of digital content.

Given these similarities, smartphones may be said to provide an expanded platform for the enactment of networked individualism. They facilitate personal expression, social interaction, and participation in diverse online communities. This capacity is highly flexible and may be personalized via applications, platforms, and settings that are specific to each individual. It may also be dynamically altered over time to reflect changing roles, interests, and commitments. In a similar way, the smartphone may be understood as a minor advancement in photography that reflects ongoing developments in electronic circuit production and miniaturization. Like the compact camera that preceded it, the smartphone may be used as a tool for the creation of memory archives that document social experiences and life events. In both cases, the smartphone provides a new platform for already established social practices and may be understood as a minor iteration that builds on past technological developments.

Despite their similarities, however, there are important differences between networked personal computing and smartphone technology. Unlike desktop and laptop computers, smartphones are significantly more mobile and may be embedded into virtually any personal or social experience. And unlike personal computers, smartphones are permanently connected to a network independent of location. Given their extreme portability, they can thus be used to access information, communicate, and distribute content from practically any setting. When considered in relation to their mobility and connectivity, smartphones also represent a significant evolution in photography. Not only are they readily available as compact cameras in every setting, but images and videos may be instantly distributed via the network for immediate consumption.

In light of these distinct affordances, smartphones have the potential to alter the mediation of networked individualism in ways suggested by manufacturer advertising and reflected by evolving social practices. To the extent that smartphones may be easily embedded in personal and social experiences, they may be used to communicate and document these experiences via text, image, and video. In turn, this media content may be instantly distributed across social networks. This immediate sharing of experience with physically absent others is different from traditional photography, since the primary focus is on establishing a mediated co-presence in the present, across networked space, rather than creating an archive for consumption in the distant future. Although both modes of media production are supported, the former is most readily facilitated by smartphones and represents a new mode of communion with others.

If we move to consider the subject matter of this expanding media production in relation to the shrinking common culture at the heart of increasingly individualized and dispersed societies, we can see the circulation of content that resonates widely with many people despite ongoing fragmentation of values and modes of living. As subjects for personal media production, children, spouses, friends, and pets feature prominently in network-distributed content. Likewise, widely recognized social events (e.g. birthdays) have been supplemented with everyday experiences as a common focus for personal media production. In this respect, smartphones integrated with social networking services provide a new platform – the fusion of personal electronics, networks, and media – for the mediation of co-presence and the enactment of a common culture that historically has been contracting as a result of individualization and cultural fragmentation.

Amplifications and Invitations:
A Phenomenology of the Smartphone

If we approach the smartphone as a form of mediation of the relation between human beings and the world, we can consider the contours of this mediation by way of Verbeek's (2005) framework of amplification/reduction and invitation/inhibition. In addition to its reliance on established cultural frames, manufacturer advertising attempts

to strengthen its legitimacy by selectively drawing on the smartphone's capacities as a technology while simultaneously concealing its modes of reduction and inhibition.

According to Verbeek, at the hermeneutical level artefacts mediate perception and in so doing promote certain interpretations of reality and discourage others. For example, a microscope, as a form of amplification, makes possible a reality that is very different from everyday reality. More generally, the mediation of perception by technology can be understood via amplification, reduction, and the introduction of new aspects of reality. Technology, according to Verbeek, provides modes of access to reality, some of which would be impossible without mediation.

Like the traditional telephone and more recent networked personal computer, the smartphone expands the user's capacity for maintaining relationships across time and space. However, by way of its portability, permanent connectivity, and personalized ownership, the smartphone transforms the user's experience of himself and others, since all users are now individually addressable and readily available for communication, regardless of time and place. This permanent connectivity is today experienced as a default mode of presence, such that when communication is not reciprocated within a short period of time reflexive concerns regarding the state of others may quickly come to the fore.

In addition, the affordances of the smartphone alter users' relation to information and communication flows, which are no longer tied to physical location. As a result, the binding of access to specific roles, routines, and settings has been loosened and dislocated. Today information and communication flows may be arbitrarily integrated by users within everyday contexts in ways that transform how they are experienced. For example, as the preceding discussion has illustrated, personal media production alters both the user's experience, which now includes forms of documentation and content distribution, as well as the experience of physically absent others who may virtually participate in these experiences.

Although manufacturer advertising emphasizes these amplifications and new modes of experience, it tends to also conceal other forms integral to smartphone ownership. For example, manufacturer advertising is silent regarding the attention that

must be devoted by users to perpetually manage and troubleshoot devices. In a similar way, investment in personalized media production requires ongoing practices of content management, editing, and archiving that create new demands for attention and time. Thus in addition to making possible new modes of reality and introducing new mediations, the smartphone also directs users' attention to itself as an aspect of reality that demands ongoing care. This new aspect, and its associated costs, investments, and frustrations, is largely absent in smartphone advertising.

In addition to perception, Verbeek (2005) argues that technology mediates our interpretive frameworks, or the context in which perception and interpretation take place. For example, new options, medications, and procedures in health care contribute to a transformation of our understanding of medicine and the ways in which we approach the treatment of disease. For Verbeek, technology is interwoven with culture in terms of the definitions that it receives but also in the ways in which it mediates cultural space and interpretive frameworks.

In this respect, smartphones and their associated technologies create a decisional burden for individuals in contemporary society who must navigate a complex space of devices, software applications, and media platforms. More specifically, smartphones introduce new possibilities for the pursuit of personal interests and social interaction. They also make possible new modes of content production and consumption as well as facilitate new forms of integration with networked artefacts in domestic, workplace, and retail settings. By promoting vertical integration within their platforms, smartphone manufacturers not only offer to reduce the complexity of this decisional burden for users, but also expand their economic reach beyond the production of system hardware and software. Thus, even though smartphone advertising includes popular third-party communication services and media platforms, it simultaneously foregrounds manufacturer-supported alternatives that are pre-installed with new devices.

At the existential level, Verbeek (2005) argues that artefacts mediate human activity by means of invitations and inhibitions of actions. Technologies invite particular actions, discourage other actions, and sometimes render some actions impossible. In this way, artefacts make possible particular praxes and give shape to the relations that

human beings have with their world. Mediated actions, according to Verbeek, make human beings encounter their world in a particular way.

As the findings in Chapter 4 demonstrate, manufacturer advertising speaks at great length with respect to particular invitations to action. At a general level, users are invited to communicate with others via diverse modalities that span text, image, audio, and video. Although this communication may be goal-focused, users are encouraged to experience mediated social interaction as an enjoyable experience, an end in itself that is part of modern living. Closely related to this, users are invited to reconsider existing experiences and social practices as potential sites of augmentation that may be enhanced by way of technology. In addition to personalized media production and consumption, users are invited to engage in new activities made possible by the mediation of proximity, including real-time music, web content, and device sharing. Users are also encouraged to consume commercial media content and publicly express their tastes to both personalize their media flows and to contribute to the quality of others' media consumption. Inversely, as always-on and always-connected devices, smartphones discourage disconnection. Although past models required users to periodically check communication services for new content, this paradigm has been superseded by integrated notification systems that alert users of changes in the network that invite immediate response.

At a broader and more indirect level, Verbeek (2005) argues that artefacts give shape to the context in which engagement and self-realization take place. In this view, the "availability" made possible by modern devices – their convenience, ubiquitousness, and ease of use – should not be understood as a loss of engagement with the world, but rather as a dimension of technology, where some forms of engagement are encouraged and other forms are discouraged. In a similar way, technological systems that encompass transportation, communication, and the economy give form to the context of everyday life, according to Verbeek, and affect our engagement with the world and the ways in which we pursue self-realization.

From this perspective, the smartphone is constituted via promotion and design as an eminently flexible artefact that may be personalized by each user to support desired

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forms of engagement and self-realization. To this end, manufacturer advertising foregrounds a framework of user choice that spans applications, communication services, and content, each of which may be selected in accordance with personal needs and preferences. Moreover, as the preceding discussion has suggested, this selection is not permanent, since it may be continually revised by users in light of changing circumstances and goals.

Smartphone promotion is also a form of education about engagement itself and the increased capacity for engagement made possible by upgraded devices, operating systems, and applications. In this respect, users are invited to engage with the question of engagement as an end in itself. This includes practical considerations such as new affordances, but it also entails a more abstract notion of progress that speaks on behalf of improved modes of engagement with content, others, and the world. Through manufacturer advertising, quality of engagement is tightly interwoven with the characteristics of smartphone hardware and software. In everyday use, automated notifications regarding operating system and application upgrades promise new affordances and enhancements to existing functions. And automated reminders sent out by carriers invite users to consider abandoning their existing devices for newer models with greater capacities for engagement. In sum, rather than fading into the background as a medium of engagement with the world, the smartphone continually foregrounds itself as an object that itself demands ongoing engagement.

The capacity for engagement and its translation in terms of device components, operating systems, and applications is not without its limits, however, since users are discouraged from directly accessing the technology itself and from wandering away from the digital "grounds" set up by manufacturers. More specifically, the smartphone is configured by manufacturers as a "black box" with well-defined interface points that support user personalization. In this model, physical modification of devices and hardware repair are discouraged. Likewise, users are limited to manufacturer-supplied application marketplaces and are discouraged from installing applications from other sources. In a similar way, although users may access media content from third-party providers, they are encouraged via manufacturer promotion and system integration to

rely on manufacturer-controlled content libraries that include music, movies, games, and books.

Status, Scarcity, and the Limits of Expertise

The decisional burden that results from a profusion of devices, applications, and services creates a demand for expertise as users attempt to navigate this complex space of artefacts. Technology media publishers offer guidance to meet this demand and in the process contribute to the production of expertise and circulation of discourses about technology. As primary producers of this knowledge, technology media authors draw upon diverse forms of social and cultural capital in their role as intermediaries situated between manufacturers and consumers.

As industry insiders, technology media journalists have privileged access to corporate executives, marketing staff, and promotional events as well as fellow writers and editors. This social network provides a basis for insider information flows, exclusive interviews, and rumours at the heart of much technology media reporting. It also ensures that authors gain early access to new products and receive previews of new technologies that are unavailable to the public.

As technology experts, authors circulate diverse knowledges and skills in the service of technology assessment. In addition to a broad familiarity with different devices, writers exhibit an in-depth understanding of underlying technologies that facilitates comparisons across competing and past products. As the discussion in Chapter 5 has illustrated, by way of specialized tools and methodologies these comparisons are quantified into facts that speak on behalf of artefacts.

Technology media authors also act as everyday technology users who share the enthusiasms and frustrations of readers. This ordinariness is conveyed through informal language, evocative expressions, and common cultural references as well as occasional engagements with readers via online discussions that accompany articles. Through these modes of address and interaction, authors act as accessible guides who

participate in a common culture with readers and share their interests, enthusiasms, and frustrations with technology.

Lastly, as informed commentators technology media authors circulate extended analyses of industry actors, products, and consumer trends. Drawing on market research, insider information, and product knowledge as well as their own observations and experiences, authors provide evaluations of corporate strategies and attempt to identify consumption patterns in the smartphone market. This commentary provides a form of meta-observation of the industry as a whole and the role of technology in society.

As the findings in Chapter 5 demonstrate, technology media authors both extend industry promotion in time and space and at times subvert it through modes of evaluation that assess the validity of promotional claims. With respect to smartphone advertising specifically, technology media authors translate the rich symbolic associations suggested by manufacturers onto an instrumental plane characterized by pragmatic considerations such as price, quality, and performance in relation to common tasks and activities.

More specifically, technology media assessment of smartphones was based upon subjective impressions and objective tests that were then used to perform intra-category and inter-category comparisons. "High-end" devices that included expensive and high-capacity internal components served as standards for experience and expectations against which other models were compared. Less expensive and lower capacity devices predictably failed to match these standards and were evaluated via a framework of sacrifice in relation to an upward-moving ideal established by high-end models. Minor differences between devices were also embellished in subjective evaluations and accentuated via benchmark tests. Thus, despite the many similarities across available devices and the imperceptible character of many differences in everyday use, smartphone assessments tended to amplify manufacturer differentiation strategies for competing products.

Although evaluations and the comparisons on which they were based served to establish an ordering for a complex space of artefacts and provide consumers with resources for managing the decisional burden of technology, they also normalized

differentiation and status-seeking practices that are commonplace in consumer society. As numerous commentators have noted (e.g. Baudrillard, 1968/1996; Douglas & Isherwood, 1978/1996), goods exist as part of a general communication system within society and function both as intermediaries that enable social unification and as markers of difference between individuals and social groups. Within consumer societies, individuals are encouraged to continually engage in judgments about others and the goods that they consume (Baudrillard, 1968/1996; Leiss et al., 2005). This focus on brands, products, and lifestyles facilitates ongoing evaluations of relative standing as well as more stable judgments about others' overall capacity for consumption.

By definition, status must be inherently scarce and unevenly distributed. But unlike traditional societies, where prestige is conferred via family lines and well-established forms of competition, consumer societies continually introduce new scarcities centered around goods and their consumption (Leiss et al., 2005). Although the choice of content is relatively arbitrary, new symbols of success are circulated to destabilize and expand existing hierarchies and introduce new pathways of aspiration. Individual satisfaction is thus understood as relative to myriad social standards of consumption, which themselves change over time as new symbols of success supplement or displace existing norms.

The establishment of device categories by manufacturers and their elaboration by technology media contributes symbolic resources that fuel these social processes. Within this hierarchy of prestige, which includes high-priced devices at its apex and a plethora of budget models at its base, fine-grained comparisons provide structure within each category. Consumers may thus draw on at least three forms of possible symbolic prestige. First, absolute status in relation to the hierarchy as a whole via possession of high-end, highly-esteemed models. Second, relative status in relation to a specific category by way of consumption of best-in-class devices. And lastly, "faded" status that is either absolute or relative via possession of recently esteemed models that have been obsolesced but which are nonetheless still recognizable.

As the discussion in Chapter 5 suggests, technology media authors express a collective taste for newness, distinctiveness, performance, and utility. As cultural

intermediaries situated between manufacturers and consumers, authors for the most part reproduce and elaborate the device hierarchy put forward by manufacturers. Highly priced and heavily promoted devices serve as a de-facto standard against which lower capacity models are compared. Although these comparisons encompass practical considerations centred around utility, they also include a plurality of synthetic and constructed differences that are unlikely to be perceptible to users in the course of everyday use. As the final arbiter of acceptability, consumers are invited to either minimize loss and maximize prestige through possession of highly rated devices or accept the sacrifice of function and status attributed to lower positioned models.

In addition, the expertise provided by technology media authors at the heart of this framework establishes a smartphone ideal that excludes environmental considerations. With respect to durability, for example, smartphone assessments include subjective impressions of build quality but lack evaluations that consider durability in relation to everyday use over extended periods of time. In a similar way, expertise was not extended to design principles that support long-term ownership and minimize environmental impact. For example, user access to device batteries was confined to considerations of convenience rather than an affordable means of prolonging device lifetimes. Likewise, manufacturer software support was typically not included as part of assessments even though longer support cycles have the potential to extend device ownership. Lastly, technology media expertise was characterized by an absence of considerations of repairability. Smartphone reviews did not include disassembly and devices were generally not evaluated based on how easy or expensive they would be to repair. Alongside explicit references to short-term ownership, the absence of these considerations contributes to the reproduction of existing norms of frequent device replacement and rapid modes of consumption.

Commodity Fetishism and the Social Origins of Production

In his detailed examination of the commodity form, Marx (1867/1992) notes that in some ways the world of goods in capitalist societies has remained unchanged from times past. Objects have always performed various material and cultural functions. Yet, Marx argues, there is something unique and distinct about the ways in which goods are

produced and exchanged in capitalist societies. There emerges a vast system of objects whose primary purpose is economic and which is governed by market exchange that is permeated by hidden irrationalities.

To begin with, the values of goods are not determined by either their intrinsic uses or the will of their owners, but rather by the abstract forces of the market. The commodity form also gives rise to another confusion, Marx suggests, that takes the form of commodity fetishism. Even though each commodity is produced by social labour, this work is represented only by its end product and the objective characteristics of things themselves. For Marx, this is an important misrepresentation of reality that structures perception of how capitalist production actually works. Rather than an exchange between producers and consumers, capitalist market exchange appears as an exchange between things, typically objects and money. The consumer's relation to the labour of others becomes concealed as objects become mute with respect to the social conditions of their production.

Advertising plays an important role in this process as a cultural institution that systematically reveals certain aspects of commodities while simultaneously concealing other dimensions (Leiss et al., 2005). This systematic distortion focuses on goods as potential satisfiers of wants and communicators in social life. At the same time, it excludes codes that hinder consumption and conceals the social origins of both its own production as well as that of the commodities on whose behalf it speaks. As Leiss et al. (2005) argue, in consumer societies this systematic distortion is imprinted by advertising on the commodities that circulate in everyday life. Advertising's unique contribution to commodity fetishism, Leiss et al. (2005) suggest, lies in its unequivocal meta-message about the potency of goods as satisfiers of wants and as tools of communication. In addition to masking the social origins of production, advertising works incessantly to establish a fetish between goods and wants that renders non-commodified and enduring sources of contentment invisible.

As the findings in Chapter 4 and the preceding discussion suggest, manufacturer advertising signifies the smartphone as a potent artefact capable of satisfying diverse human needs and mediating social life. Although much of this advertising was focused

directly on the device itself and its attributes and powers, the social origins of production were also selectively used as promotional resources. Apple in particular relied on this strategy through its inclusion of scientists, engineers, and manufacturing processes. By drawing on the symbolic value of these professions and their links to innovation and progress, Apple partially lifted the veil of production in the service of commodity signification. In this respect, the social origins of production were not concealed in their entirety, but rather selectively revealed and mobilized as promotional resources.

Technology media publishers also drew attention to the context of production through a focus on the smartphone industry. As the analysis in Chapter 5 illustrates, unlike manufacturer advertising, which was almost exclusively focused on isolated devices, technology media publishers expanded the context of artefacts to also include the actors responsible for their production, regulation, and consumption. In particular, the smartphone market served as a background framework for the interpretation of manufacturer activities as well as a basis for situating newly released products. Articles also focused on the smartphone market as an index of consumer behaviour, a means of gauging manufacturer performance, and as an object that required explanation. Moreover, occasional commentary examined in detail manufacturer promotion, industry trends, and consumer activities. In sum, when compared to manufacturer advertising, technology media publishing revealed to a much greater extent the social origins of smartphone production.

Despite this expanded scope, however, technology media publishing may nonetheless be understood as a form of spectacle that contributes to commodity fetishism by diverting attention away from the actual sites, conditions, and effects of technology production. In this respect, it may be understood as a form of sports coverage, where the industry serves as the sports league, manufacturers are treated as individual teams, and product releases represent plays within a market field refereed by state regulators and applauded by consumer-fans. Here news reporting is a form of league coverage that includes up-to-the-minute information about teams, plays, and fan reactions. While this coverage includes scorekeeping, analysis of team strategies, and anticipation of future plays, and in this respect broadens the scope of view relative to that offered by manufacturer advertising, it nonetheless functions as a spectacle that

excludes the social conditions of production and the environmental impacts of rapid modes of consumption.

Tribal Masks, Cultural Capital, and Popular Expertise

As technology enthusiasts, readers engage with published media texts and contribute to expert discourses and consumption practices. As Cova et al. (2007) argue, consumer tribes actively produce a range of interpretations and identities that often both absorb and resist pre-packaged roles and meanings. That is, tribes rarely consume brands and products without simultaneously also engaging and adding to them. As market-circulated cultural resources, commodities have the capacity to arouse desires and passions that may form the basis of shared experiences, rituals, and sociability.

As the findings in the previous chapter illustrate, technology media readers exhibited an enthusiasm for technology that provided a foundation for ritualistic media consumption and online sociability. Not only did readers follow technology news and analysis, but they also actively engaged with published content and each other by way of discussion platforms made available by publishers. While this engagement was often passionate, it also included rational discourse about the smartphone industry, manufacturers, and specific products. In these discussions readers expected from each other informed opinions that included sound justifications.

Expressions that failed to meet this criteria were often the basis of negative identity attributions that took one of two forms. Discussion participants were labelled as "trolls" if they made use of antagonistic expressions about manufacturers, brands, or products intended to provoke a reaction from others. This labelling corresponded to the lowest valued position in social space and moved the accused to the periphery of the discussion. In addition, participants were labelled as "fanboys" if they expressed unqualified support for particular brands or products. This position was deemed unacceptable since it failed to engage in informed discussion and to consider the merits and shortcomings of specific artefacts. Instead, fanboys were accused of a persistent bias that interfered with objective assessment and discussion. To defend themselves against this attribution, readers at times made explicit reference to their diverse

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possession histories to illustrate their lack of allegiance to any particular brand. In each case, however, unless the accused was able to refute the attribution, the conferred label implied a loss of credibility that was reflected by a lack of engagement and active downgrading of expressions by other readers.

In order to demonstrate and gain cultural capital, discussion participants needed to provide a convincing interpretation of industry actors, events, or artefacts. This contribution to the tribe's understanding, in turn, was based on both scarce cultural resources, such as insider knowledge or professional education, for example, as well as more readily available expertise based on personal experience or familiarity with technology media. As Cova and Cova (2002) suggest, tribal roles may be understood as "masks" that may be dynamically adopted by different tribe members. That is, in addition to more stable roles and modes of status, tribal roles may be flexibly and dynamically adopted by participants.

Based on the findings presented in Chapter 5, we can identify several distinct roles and corresponding forms of cultural capital encapsulated within what appears to be an otherwise static consumer identity. By adopting these roles, consumers circulate diverse interpretations that contribute to the collective intelligence of the tribe. Table 6.1 provides a summary of identified roles based on the research findings presented in the previous chapter.

Table 6.1   Identified Consumer Roles

Tribal Role	Description
Anthropologist	Observes self and others as users of technology
Market Subject	Responds to advertising and promotion strategies
Media Mixer	Builds intertextuality across media sources
Peacekeeper	Emphasizes fit between needs and affordances
Industry Expert	Analyzes industry market data
Technical Guru	Explains inner workings of technology
Insider	Publicizes insider knowledge

As "anthropologists," discussion participants engage in self-observations and observations of others as users of technology. This monitoring provides a source of insight that may be mobilized in discussions as a form of on-the-ground expertise. In

addition, as "market subjects," readers offer interpretations of manufacturer promotion in their prescribed role as consumers who are the target subject of this promotion. At the same time, they act as market research participants who attempt to influence the nature of this promotion. Personal readings form the starting point of assessments of promotional strategies and provide a basis for suggestions to improve their effectiveness.

Discussion participants also drew on their familiarity with technology media to build intertextuality across online publishers and articles. In their role as "media mixers," participants provide links to online resources that support and extend discussions. When interactions become highly conflictual, however, some readers adopt a "peacekeeper" role in an effort to diffuse tension. By shifting focus from objective claims to questions of subjective fit between individual needs and artefact affordances, "peacekeepers" remind the tribe that personal appropriation is the final arbiter of success and what makes a particular artefact "good" or "bad."

There are also several roles that depend on more scarce forms of cultural capital, such as analytical skills, technical expertise, and insider access. The "industry expert," for example, assembles market data from multiple research sources and advances an analysis of industry trends. At times, these industry experts shift attention to detailed considerations of methodology underlying reported market data and question prevailing conclusions. As "technical gurus," discussion participants draw on their knowledge of technology to offer detailed explanations of the workings of artefacts or their components. This expertise may be based upon a deep familiarity with technology that has been accumulated over time but it also includes references to science and engineering professions that serve as a form of implied credibility in discussions.

Lastly, in their role as "insiders," discussion participants publicize information that is otherwise inaccessible to the general public. For example, as employees who work at retail outlets or who provide customer support on behalf of mobile carriers, readers have access to forms of insider knowledge that are not publicly reported by industry actors or technology media publishers. These insiders thus circulate unofficial accounts and

insights that are exclusive to specialized forms of labour within the industry and which add difficult to obtain information to online discussions.

In sum, although a shared passion for technology provides the basis for ritualistic media consumption and sociability, communication norms channel this enthusiasm into rational modes of discussion that reward informed opinion, sound justification, and demonstrable expertise. In contrast, unwavering or unqualified enthusiasm for particular brands and products is generally dismissed. As informed consumers, technology experts, and insider employees, discussion participants adopt various masks in the course of social interaction and contribute diverse forms of popular expertise that circulate alongside official narratives provided by technology media publishers. This popular expertise broadens and deepens the scope of cultural resources available to technology users beyond the narrow promotional focus of manufacturers and official expertise circulated by technology media authors. In this respect, technology media websites function as platforms for the production and dissemination of popular forms of expertise that are more publicly visible than specialized online spaces devoted to technology consumption (e.g. specialized forums).

Structure/Agency: Tribal Appropriation and Market-Building

As Cova et al. (2007) point out, consumer tribes are multitudes that perpetually contradict themselves. Tribes shift from one form of market interaction to another and individual members move across modalities and identities. To map this movement and fluidity, Cova et al. (2007) introduce four tribe orientations that correspond to a tribe's capacity for appropriation and market-building.

As *double-agents*, tribes engage in minimal appropriation and enjoy being both the target subjects of producers and faithful distributors of objects and meanings. In contrast, as *plunderers*, tribes actively appropriate, resist, and invent meanings. With respect to market-building activities, tribes often act as *activators*, observing and playing within the rules of the market as consumers. At other times, however, tribes may take on more active roles and act as *entrepreneurs* by expanding an existing market. In this role,

tribes strive to achieve a common footing with producers as creators of cultural, social, and economic value.

If we examine the findings presented in Chapter 5, we can see that the tribalism centred around media and technology consumption exhibited to differing degrees aspects of all four orientations identified by Cova et al. (2007). Given the dissertation's emphasis on media consumption, however, the appropriation axis was over-represented relative to the market-building axis. As such, the discussion that follows exhibits this bias, which will be discussed in greater detail in a subsequent section.

The findings in Chapter 5 support a view of the tribe as a double-agent, since readers embraced their roles as both target subjects and ambassadors for smartphone brands and products. In the case of the former, discussion participants acted as engaged consumers, responding to manufacturer promotion with enthusiasm as well as providing suggestions for improvement. As technology users, readers acted within the established norms of the market which bestow upon consumers a right and a responsibility to express needs such that they may be met by producers. Although the limitations of this ideology are beyond the scope of this discussion, discussion participants acted in accordance with its guiding principles by enumerating shortcomings and providing suggestions to manufacturers with respect to smartphone design and functionality. These expressions were often addressed simultaneously both to other readers and otherwise absent but imagined manufacturers: "This is what I'm looking for in a smartphone," participants offered, "You have an opportunity to win me over as a customer."

In a similar way, active readers readily undertook their role as a target audience for manufacturer promotion. By circulating personal readings and responses to this promotion, discussion participants acted as media audiences and took it upon themselves to suggest changes to manufacturers that would improve the effectiveness of their marketing efforts. Although these expressions took place within the flow of online discussions, they were also implicitly addressed to imagined marketers: "This is my response to your promotion," participants offered, "This is how it should best target me."

In both cases, discussion participants behaved as active target subjects that attempted to enhance commodities and their consumption by helping manufacturers improve their promotional efforts and product designs. Even though these activities took place outside of formal market research contexts, the presence of these expressions suggests that participants assume that manufacturers monitor online discussions and take into account consumer insights. Accordingly, active readers operate under the assumption that they may have some influence over the direction of technology development.

As double-agents, participants also acted as product ambassadors by sharing their experiences, answering questions, and offering recommendations in the course of online discussions. That is, in addition to general forms of enthusiasm, readers personalized smartphone ownership through reference to personal modes of use and appropriation. These shared experiences, in turn, provided a basis for word-of-mouth recommendations that circulated alongside official manufacturer and technology media promotion. As mediated, globalized versions of their in-person, local counterparts, these recommendations functioned as micro-promotions that gave a personal dimension to otherwise generic brands and products. To the extent that they are read by others as genuine expressions that are neither a form of commercial speech nor sponsored comments, their promotional value stems from their perceived authenticity.

At the other end of the appropriation axis, discussion participants at times acted as plunderers of meaning by actively undermining promotional messages and circulating new meanings. In addition to occasional derogatory references to manufacturers, such as the use of "M$FT" and "Crapple" to refer to Microsoft and Apple, for example, readers also actively sabotaged manufacturer and technology media promotion by circulating counterexamples that contradicted official messages and promotional claims. As the findings in Chapter 5 illustrate, these counterexamples were based on personal experiences with existing products, in-depth knowledge of technologies, and familiarity with media resources that could be mobilized in support of counterarguments. In each case, consumers tactically resisted promotional strategies by casting doubt on the claims put forth by manufacturers and publishers.

At a broader level, discussion participants were generally cynical towards marketing as a practice and argued that promotion introduced a bias into the marketplace that unfairly rewarded established manufacturers with large marketing budgets. This interpretation of promotion as an undesirable social practice was often closely connected to normative evaluations of manufacturer innovation. Discussion participants thus not only at times dismissed heavily promoted features as marketing gimmickry, but also bemoaned the lack of meaningful innovation in the industry. Taken together, these critical readings and counterarguments introduced obstacles and detours into the promotional circuits established by manufacturers and technology publishers.

Shifting focus to the market-building axis, discussion participants primarily acted as activators that respected market norms and standards. As enthusiastic and expert technology users, participants performed themselves as active, knowledgeable consumers who are responsible for placing demands on manufacturers. Through reference to everyday experiences and observations, consumers identified problems and opportunities for manufacturers that were then further elaborated via public discussions. In a similar way, discussion participants engaged directly with technology media authors, acting as consumer-experts capable of questioning and contributing to official forms of expertise. As the findings in Chapter 5 demonstrate, in addition to supplementing authoritative assessments with their own personal evaluations, readers also at times questioned review methodologies and results through reference to first-hand experiences and alternative online resources.

Moreover, in their role as market activators discussion participants expressed a reluctance towards the smartphone ideal advocated by manufacturers. Citing drawbacks such as cost, energy inefficiency, and lack of practical utility, some readers questioned the primacy granted by manufacturers to high-performance components such as smartphone processors and screen displays. In their place, advocates argued for user-replaceable batteries and storage options as well as meaningful innovations that addressed identified shortcomings, such as rapid battery depletion, for example. In this way, discussion participants put forward an alternative smartphone ideal to that advocated by manufacturers and in so doing challenged manufacturers to both

reconsider established conventions and develop new designs that address unmet market demands.

Although this study did not focus on consumer market-building activity, it is worth noting that references to this activity at times circulated in reader discussions as participants considered the merits and drawbacks of smartphone hacking and the use of unofficial operating system software. Developed by skilled enthusiasts, these alternative software platforms remove manufacturer-imposed system restrictions and provide users with additional control over their devices. For example, users may access additional application marketplaces other than those provided by the manufacturer. Likewise, users can install third-party applications that modify core system functions and hardware components that typically cannot be altered by users running manufacturer-supplied operating systems.

This appropriation and distribution of modified operating system software expands the smartphone market beyond the bounds set by manufacturers and entails the creation of cultural, social, and economic value by users. In addition to user-implemented software features that correspond to user re-imaginings of how a smartphone should function, third-party software marketplaces generate revenue for independent developers who distribute applications that would otherwise not be available via manufacturer-controlled software channels. Although all of this activity takes place in online spaces devoted to smartphone hacking, technology media reader discussions extend the reach of these resources to a wider audience that may be unfamiliar with smartphone hacking. In this respect, technology media articles and reader discussions may be understood as a bridge between the official smartphone market and its unofficial, expanded form as created by user "entrepreneurs."

In sum, smartphone appropriation and market-building by users support Cova et al.'s (2007) argument that consumer tribes are not naive about the commercial world, but instead actively engage with producers and attempt to negotiate compromises that may both accept and challenge dominant market strategies. Rather than being passive subjects of manipulation, Cova et al. (2007) argue, consumers decide the extent to which they will allow themselves to be manipulated and will also at times attempt to

manipulate producers. Given this dynamic interchange, Cova et al. (2007) propose play as a model for the process of consumption, since it is essentially an improvised interaction that no one fully controls. In this model, consumers are active subjects who often play by the rules, but who at times also play with the rules themselves. According to Cova et al. (2007), contemporary consumer resistance is less about animosity and struggles against system ideologies than about values of play and liberation within a space of commercial meanings and identities. The traditional dichotomy between structure and agency, where consumers are either said to be engulfed by total control or completely free, Cova et al. (2007) argue, obscures the dynamic and interactional nature of consumption.

At the level of meaning, consumption as play foregrounds the active roles played by both producers and consumers. Within a context of market competition, manufacturers signify commodities in ways that will encourage their consumption and integration into cultural life. In turn, consumers accept, modify, and resist these cultural strategies as they engage with commodities in the course of their everyday lives. In addition, at a material level the model may also be said to describe a dynamic social process whereby consumers appropriate manufacturer-supplied artefacts. In their role as hackers, for example, smartphone enthusiasts appropriate manufacturer operating system software as a starting point for user-defined modifications and extensions that are then distributed to other smartphone users.

As one moves from software towards hardware, however, the model's limitations become apparent. With respect to smartphone hardware, users have little choice but to adopt a relatively passive consumer role, since control ultimately rests with manufacturers who dictate which models and designs will be made available on the market. Although consumers may express their market preferences, they are ultimately circumscribed by the options made available by manufacturers, who may actively ignore consumer demands and avoid product designs that undermine established replacement and revenue models. Stated in another way, there are multiple "games" between producers and consumers; some of these games have rules that strongly favour manufacturers. While appropriation and play may be highly dynamic at the level of meaning and software, it is greatly limited at the level of hardware. Here manufacturers

are the dominant players within a biased playing field who are relatively free to define smartphones as non-durable and difficult-to-repair devices.

Reflexive Modernity, Environmental Risk, and the Palimpsest of Technology

According to Beck et al. (2003), reflexive modernity may be understood as the modernization of modern society, where modernity is said to enter a distinct "second phase" characterized by institutional transformations stimulated by a loss of legitimacy. The shared premises and foundations at the heart of first modernity institutions, including the exploitation of nature, scientific rationality, and instrumental control, become increasingly undermined by, among other processes, the spread of environmental awareness and a looming global environmental crisis. First modernity institutional answers, including more technology and economic growth, Beck et al. (2003) argue, are less persuasive today than in the past as legitimate answers to systemic problems that cross institutional and national boundaries. Second modernity, Beck et al. (2003) suggest, begins with a questioning of the foundations of first modernity and its institutions.

According to Beck (1994), the self-confrontation of industrial society with itself occurs cumulatively and gradually over time as risks multiply and escape the institutions that have historically managed to contain them. Today the dangers of industrial activity increasingly dominate public debates and conflicts. And even though institutional decision-making and action continue, both are shrouded by possible legitimation crises (Beck, 1994). This public questioning of the promises of industrial and technical systems, Beck (1994) suggests, arises as a result of past experiences, failures, and unintended consequences that have contributed to a collective appreciation of risk. Today these promises are tempered by a public understanding of the dangers inherent to industrial and technological development.

Given these incipient trends, Beck et al. (2003) argue that the theses of reflexive modernization need to be worked out theoretically and mapped empirically via research studies that examine the changes taking place within Western societies. That is, to what

extent and how are fundamental cultural categories changing? What does decision-making look like in conditions of risk? How are reflexive institutions actually developing in a global world?

The research undertaken for this dissertation has attempted to engage with these questions by way of an examination of a specific domain in Western society, namely the production of information and communication technology. Through a focus on smartphone promotion, design, and consumption this dissertation has examined in detail the mutual constitution of this technology by manufacturers, media publishers, and consumers at a time when industrial activity continues to be tightly linked in public discourse with environmental harm and anthropogenic global warming. Although there were some notable exceptions, which will be summarized below, the research findings suggest that first modernity processes continue largely unabated within this domain. Economic growth and technological innovation, supported by an ideology of progress and consumerism largely disconnected from environmental harm, continue to provide legitimacy to first modernity production and consumption. Although general recognition of global environmental risk may be more pronounced today than in the past, there was no evidence to suggest that this awareness has led to significant transformations in the spheres of production and consumption with respect to smartphone technology.

With respect to its signification by manufacturers, smartphone advertising was found to mobilize an aggregate incentive structure that included instrumental, hedonistic, and expressive modes of appeal. Although some manufacturers included references to environmental harm, these references were translated almost exclusively in terms of recycling and waste management, even though life cycle studies indicate that the production phase as opposed to the post-consumption phase is the greatest contributor of carbon-dioxide emissions and environmental harm. By focusing on responsible recycling manufacturers signified themselves as environmental stewards while simultaneously redirecting attention away from production and rapid cycles of product obsolescence. In this respect, the "greenwashing" of the smartphone via advertising may be understood as a form of social therapy (Marchand, 1985) that addresses pervasive anxieties about environmental sustainability and the global ecological crisis. In the place of significant change, consumers are offered the assurance that rapid cycles of

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consumption are sustainable practices provided that devices are disposed of in a responsible manner.

Although the limited scope of view offered by manufacturers was expanded by technology media publishers, who circulated observations and interpretations of mobile industry actors, events, and artefacts, this expanded view did not encompass the relationship between technological development, consumption, and environmental harm. Instead, technology media expertise was mostly limited to instrumental considerations of smartphone consumption. And while authors critically evaluated the promotional claims of manufacturers and at times criticized the state of innovation in the industry, a disproportionate number of articles were devoted to the circulation of product news and rumours intended to stimulate collective anticipation for new technologies. The prominence given to rumours, manufacturer promotion, and industry events thus extended manufacturer efforts in time and space to create demand for novelty and product replacement.

Shifting attention from technology media publishers to readers, even though rapid product release cycles were sometimes criticized in online discussions, these criticisms were based on a perceived loss of investment as opposed to environmental concern. Moreover, readers at times defended manufacturers and justified rapid obsolescence as a necessary aspect of well-functioning market competition. In addition, even though readers infused news and rumours with enthusiasm and skepticism towards new products, the practice of frequent device replacement was not questioned. Instead, this dominant norm was implicitly and explicitly reproduced by discussion participants as a natural and inevitable aspect of technology consumption. As in the case of manufacturer advertising and technology media publishing, there was no evidence to suggest that smartphone consumers considered or were even aware of the environmental aspects of technology production.

We can also consider environmental harm from the perspective of smartphone design. As Feenberg (2012) argues, under the surface of technology multiple "layers" of influence may be discerned that correspond to the inputs of different social actors engaged in technology development. Depending on the meanings attributed to

technology by these social actors and the nature of interaction between them, this layering may in some cases correspond to a zero-sum game where some inputs are accommodated at the expense of others. But it may also include other forms of layering where diverse social inputs are accommodated by way of compromise or the merging of interests such that no compromise is necessary.

Feenberg (1999) introduces the notion of *technical code* to capture this mapping between social inputs and technology design. To the extent that scientific and technical considerations are insufficient in themselves to determine technology, which must also be integrated with its sociocultural context, design necessarily must also embody aspects of this context. To foreground this diverse mapping, Feenberg (2012) suggests that we approach technology as a *palimpsest*, a complex structure of interrelated layers that correspond to different forms of design inputs. As Feenberg (2012) points out, in order to be successful advanced technology must effectively overlay scientific, technical, commercial, and public inputs.

For the purposes of this discussion, commercial and public inputs are particularly relevant. To begin with, smartphone manufacturers operate within a system of advanced capitalist production that rewards innovation, novelty, and its promotion as a means of surpassing competitors. In addition, the requirements of profit and economic growth establish strong incentives for manufacturers to minimize the costs of production, seek out new markets, and encourage replacement buying in saturated markets. At a systemic level this social organization of production rewards commodities that can successfully incorporate these incentive structures into their design.

For example, aesthetically pleasing but non-durable smartphone materials may be used to both stimulate initial purchase and improve the likelihood of rapid product replacement. In recent years, both Apple and LG introduced popular smartphone models that included backpanels constructed from glass that easily cracked in the course of everyday use. In a similar way, even though it is possible to provide users with access to the phone battery and include expandable disk storage, many new designs exclude these features. Instead, manufacturers promote higher profit, fixed storage models and replacement buying in lieu of hardware replacement and repair.

And although core smartphone functions have remained relatively stable in recent years, manufacturers continue to introduce novelty in both hardware and software. New components, including temperature and fingerprint sensors, for example, alongside faster processors and higher resolution screen displays continue to be heavily promoted by producers. In addition, through the development of visually appealing and graphics-intensive user interfaces manufacturers not only introduce novelty into smartphone software, but simultaneously obsolesce their own hardware which over a short period becomes incapable of supporting updated revisions of this software. In each case, software development, access to user consumables, and choice of materials have been mobilized in the service of short-term ownership and obsolescence.

With respect to public inputs, at a minimum all smartphones must reliably work in order to facilitate consumption. Today this requirement spans a wide spectrum of features that includes mobile telephone service and data networking as well as camera, audio, and video functions. As the findings in the previous chapter illustrate, technology enthusiasts expand upon this foundation via the articulation of a smartphone ideal that includes long-term battery use as an alternative to high-performance but power inefficient components. In addition, enthusiasts express preferences for expandable disk storage and access to batteries so that users may easily customize and extend the utility of their devices.

Even though it was not an explicit focus for the undertaken research, at a broader level we can also include the cultural horizon of technology (Feenberg, 1999) as an implicit public input in technological development. More specifically, articulations of environmental and social harm today circulate within public discourses focused on economic development and sustainable living. In the case of food, for example, consumer movements promoting fair trade and organic food have been largely successful in translating public concerns into market mechanisms and production technologies that reflect and address these concerns. At a more general level, even in the absence of direct social movement involvement, producers today increasingly include environmental considerations in their promotional strategies and product designs. Unfortunately, much of this activity corresponds to changes only in public

messaging and packaging, or the "greenwashing" of commodities that remain otherwise unchanged.

Taking both commercial and public inputs into account, smartphone production may thus be understood in terms of artefact *versions* (Feenberg, 2012) that represent different designs that co-exist in the market and embed in variable proportions social inputs. One dominant version, where commercial inputs are most influential, is characterized by a design that includes aesthetically appealing but less durable materials, fixed disk storage capacities, and non-removable batteries. Internal components are inaccessible and devices are difficult and expensive to repair. A variation of this dominant design that incorporates to a greater extent public inputs includes expandable disk storage options and user-replaceable batteries. In both cases, however, hardware is paired with software development that has historically been focused on novelty and increased system requirements that place increasingly heavy burdens on older devices. Environmental considerations, when they are present, appear to be primarily translated in terms of waste management as opposed to long-term ownership and durability. In this respect, manufacturers increasingly include smartphone materials that are less toxic and easier to recycle.

There are some notable alternatives to these dominant designs. By unlocking the system restrictions imposed by manufacturers, smartphone hacking communities establish alternative software paradigms that provide users with greater control over their devices. In addition to the inclusion of new user-defined functions that correspond to a wider diversity of public inputs, this appropriation of manufacturer software has also been used to expand the limited support provided by manufacturers and to extend the lifetime of older hardware. To this end, hacking communities include security and bug fixes for their software that often have ceased to be provided by manufacturers and carriers after a short period of time. Similarly, developers at times remove software features that place a heavy burden on older hardware. In this way, users with older devices may benefit from available software updates without incurring a loss of performance and usability.

Lastly, there are emergent design paradigms that may one day replace the dominant versions currently in place and contribute to a reordering of commercial and public layers. For example, Google has recently initiated a new smartphone design that enables users to construct a personalized device using pre-defined hardware building blocks (Google, 2014). By defining the hardware framework and interface points, Google expects third-party component vendors to produce building blocks that consumers can then use to build a customized smartphone. In principle, such a design has the potential to support long-term ownership and extended device lifetimes, since it will enable users to easily replace select parts if they break down or become obsolesced by software.

In sum, while there are smartphone versions that include to a greater extent public inputs and emergent designs that may shift the balance between commercial and public considerations, these alternatives currently occupy the margins of a space that is dominated by designs that reflect the primacy of commercial priorities. While these designs necessarily accommodate public inputs to some degree, the limits of this accommodation may be traced in terms of capitalist market incentives. Thus while less toxic and more recyclable materials are being increasingly used, devices are designed for short-term consumption and rapid replacement as opposed to long-term ownership and repair. In this respect, while there are some traces of environmental considerations characteristic of reflexive modernity, smartphone production and consumption on the whole resemble first modernity institutions that relate to the environment as a resource without limits or risks.

Green Media: Ethical Consumption, Citizenship, and Governance

This critical assessment supports Maxwell and Miller's (2012) contention that the environment continues to be subordinated to the economy with respect to media technologies and industries. Against environmental harm and unsustainable growth in information and communication technology (ICT) and consumer electronics (CE) industries, Maxwell and Miller (2012) advocate for green citizenship and governance to confront the pervasive eco-crisis. As critique and corrective to liberal-democratic citizenship, green citizenship entails additional rights and responsibilities that have

historically been excluded by state projects focused on economic prosperity and nation building. As public claims to clean air, soil, and water that supersede the private interests of industry, green citizenship includes the right to biophysical health and ecosystem welfare as well as the entitlements of future generations to these rights. At the same time, green citizenship entails a duty to others and ecosystems and a commitment to work towards intergenerational, global sustainability.

Within this expanded notion of citizenship, Maxwell and Miller (2012) argue, ethical consumption provides a means for individuals to nurture ecological ethics and engage with emergent practices that aim to transform dominant norms and modes of consumption. To educate consumers about the ICT/CE industry, non-governmental organizations (NGOs) such as The Story of Stuff Project produce online resources that inform consumers about the nature of technology production, e-waste, and environmental regulation (Leonard, 2011). By way of their website and freely available online videos, The Story of Stuff Project draws attention to manufacturer design strategies, toxic substances used in ICT/CE production, and the limitations of e-waste recycling programs.

In a similar way, the Electronics TakeBack Coalition distributes online resources for consumers that illustrate green design principles, catalogue manufacturer greenwashing strategies, and suggest ways that users may extend the lifespan of their devices (Electronics TakeBack Coalition, 2014a; 2014b; 2014c; 2014d). Linking education to practices of repair, the iFixit online store and foundation provides consumers with repair guides and replacement parts that enable users to fix their smartphones and other common products (iFixit, 2014a; 2014c; 2014d). In addition to disassembling consumer electronics and publishing repair guides, iFixit staff provide device assessments that reflect the ease with which particular products may be repaired (iFixit, 2014c).

By including the environmental harms of technology production and disposal, the online resources circulated by these eco-focused organizations expand the breadth of technology expertise available to consumers. As such, they provide a starting point for ethical modes of technology consumption that attempt to break the cycle of rapid

replacement and disposal. At the same time, when considered in relation to the findings of this dissertation, this expertise appears to exist outside of mainstream expertise circulated by technology experts and enthusiasts that is most readily available to consumers. This disconnect suggests that these organizations have been unsuccessful to date in shifting the dominant discourse that structures the consumption of popular communication technologies such as the smartphone. Despite existing efforts, there is thus a continued need for education and resources that foreground environmental considerations and support progressive modes of consumption.

As Maxwell and Miller (2012) point out, it is also necessary to acknowledge the limits of ethical consumption given the scale and complexity of global ICT/CE production, consumption, and disposal. With respect to the historical meta-process of individualization and the recent ascent of neoliberalism, ethical consumption may be understood as part of an ongoing tendency to displace state regulation with market mechanisms and place collective responsibilities onto the shoulders of individuals. Not only does this arrangement favour affluent and well-educated consumers, but it simultaneously placates government regulators and supports industry self-regulation, which to date has proven inadequate with respect to limiting environmental harm (Maxwell & Miller, 2012). Thus while there may be a role for individuals, Maxwell and Miller (2012) argue, ethical consumption must be part of a larger collective politics that aims to establish sustainability within the ICT/CE industry.

To this end, Maxwell and Miller (2012) distinguish three forms of emergent citizenship that today span green politics at the local, national, and global levels. First, *environmental citizenship* includes collective efforts undertaken in institutional settings (e.g. workplaces, factories) intended to reduce local environmental harms. Second, *sustainability citizenship* encompasses holistic approaches that focus on the structural aspects of sustainability at a global level. Moving beyond isolated local sites, sustainability citizenship attempts to address problems that arise from systemic interconnections between institutions, sectors, and regions. Lastly, *resistance citizenship* may be defined in terms of its commitment to protest and direct action against harmful institutional practices and state policies. Guided by confrontation, resistance citizenship

includes the use of ad-hoc tactics to publicize harmful practices and pressure offenders towards institutional change.

As Maxwell and Miller (2012) point out, Greenpeace has been particularly successful in a resistance capacity through its well-publicized campaigns against the use of toxic substances by ICT/CE manufacturers. Moreover, through its Guide to Greener Electronics, Greenpeace monitors the ICT/CE industry, pressures manufacturers to develop sustainable products, and provides consumers with resources that support ethical modes of consumption (Greenpeace, 2012). From the perspective of sustainability citizenship, Maxwell and Miller (2012) point to the research and policy advocacy of the Basel Action Network (BAN), which aims to prohibit the international trade of toxic waste, which historically has been exported by affluent countries in the Global North to poor and poorly regulated countries in the Global South. Since 1998, the Basel Ban has effectively prohibited e-waste export from industrialized countries of the OECD to all non-OECD countries. With other eco-focused organizations, BAN is a founding partner of the Electronics TakeBack Coalition, which promotes green design and responsible recycling in the ICT/CE industry through the advancement of extended producer responsibility policies (Electronics TakeBack Coalition, 2014a).

Although not included in Maxwell and Miller's (2012) research, we can also include iFixit's broader mandate and political project alongside these efforts. In addition to its online repair store, iFixit is also an advocate for expanded consumer rights that undermine product obsolescence and throwaway culture. Their *Repair Manifesto*, which technology users and repair technicians are invited to publicly circulate, includes the following rights (iFixit, 2014b):

- to devices that can be opened
- to repair documentation for everything
- to repair things in the privacy of our own homes
- to error codes and wiring diagrams
- to choose our own repair technician
- to non-proprietary fasteners
- to remove 'do not remove' stickers

- to replace any and all consumables ourselves
- to troubleshooting instructions and flowcharts
- to available, reasonably-priced service parts

The expanded consumer role elaborated by the *Repair Manifesto*, which includes active and responsible technology ownership, points towards necessary structural changes in the ICT/CE industry that span documentation, design, and manufacturing processes. By advocating for industry-wide reform, iFixit draws attention to the systemic interconnections between producers, consumers, and practices of repair that represent a promising path towards sustainability.

As the preceding discussion illustrates, although some notable undertakings have been successful (e.g. toxic substance bans), to date organizations and states have not managed to eliminate the environmental harms associated with ICT/CE. In order to be successful, Maxwell and Miller (2012) argue, green governance of ICT/CE must match the scale and variation of environmental problems and productively employ diverse regulatory instruments. The interdependence of supra-state, interstate, and state governance requires that national governments harmonize and enforce laws and agreements within their boundaries. In order to regulate global ICT/CE corporations and empower citizen action, diverse instruments spanning international protocols, national legislation, and transnational codes of conduct will need to be matched with local monitoring and enforcement across sites of production, consumption, and disposal (Maxwell & Miller, 2012).

Contribution to the Field

This dissertation has attempted to provide a "snapshot" of the current state of media promotion, expertise, and sociability centred around an increasingly ubiquitous communication technology. To this end, it has examined some of the more prominent online practices of leading smartphone manufacturers, technology lifestyle publishers, and enthusiastic consumers. These practices were considered with respect to new media to investigate the ways in which different actors appropriate networked, participatory media in relation to consumption. Lastly, the undertaken research sought to

investigate how this mediation of consumption is connected to technology design and environmental harm resulting from rapid modes of obsolescence.

With respect to smartphone advertising, the dissertation has illustrated how the world's largest technology manufacturers appropriate the affordances of new media in the service of product promotion. This empirical account included a quantitative analysis of advertising content as well as a qualitative examination of cultural themes employed by manufacturers in their signification of the smartphone. This research was situated in relation to diverse consumption modes, the history of advertising practice, and contemporary technoculture.

Secondly, the dissertation has demonstrated how technology media publishers appropriate new media in the service of rapid news dissemination, product promotion, and the circulation of expertise. Through a focus on popular publishers, the dissertation provided a quantitative account of publication formats and frequencies which was complemented by a qualitative examination of article content. The corresponding analysis identified the ways in which technology media publishers extend, augment, and subvert the promotional efforts of manufacturers. In addition, the dissertation identified prominent modes of expertise and cultural capital circulated by technology media authors with respect to smartphone consumption. These media practices were situated in relation to technology consumption, commodity fetishism, and the role of expertise in contemporary consumer society.

Thirdly, the dissertation has illustrated how the participatory affordances of new media are being appropriated by technology enthusiasts to engage with manufacturer promotion and technology media publishing. This qualitative examination of online reader discussions in response to the publication of technology media content identified the ways in which consumers amplify, contribute to, and resist technology promotion and circulate popular forms of expertise in relation to smartphone consumption. These social and cultural practices were considered with respect to collective modes of consumption, cultural capital, and the social production of technology.

In addition to these specific areas of focus, this dissertation has charted the broader promotional circuit of smartphone consumption and mapped prominent

interconnections between manufacturer advertising, technology media publishing, and online consumer sociability. Although this undertaking was neither exhaustive nor complete given the vast web of promotion that surrounds this popular communication technology, the research attempted to examine dominant network media traces and sought to analyze dominant symbolic flows that structure the signification and interpretation of the smartphone. Particular attention was given to the mutual co-production of this technology by manufacturers, publishers, and consumers in an effort to trace the cultural transformations that take place at the interface of marketing, publishing, and consumer engagement with densely interlinked online promotion. In a similar vein, the dissertation identified some of the ways in which technology media authors and consumer-enthusiasts, acting as cultural intermediaries situated between producers and lay technology users, enrich and undermine the promotional efforts of manufacturers.

Lastly, the undertaken research has sought to investigate the relation between promotion, design, and obsolescence in light of the environmental harms that result from the production of information and communication technologies. To this end, the dissertation has illustrated how manufacturer advertising embeds diverse consumption logics to stimulate device replacement and how specific design strategies are employed by manufacturers to encourage short-term device ownership. Secondly, the research has identified how technology media publishers grant primacy to novelty, recency, and progress. The undertaken study also investigated the extent to which consumers considered the environmental effects of product obsolescence and did not find any evidence to suggest that environmental factors informed smartphone consumption among technology enthusiasts. Taken together, these findings were used to assess some of the core premises at the heart of theories of reflexive modernization and risk society. The findings suggest continuity rather than change with respect to first modernity industrial and technology development.

Limitations of the Research Study

There are several notable limitations of the undertaken research that circumscribe the presented findings and analysis. To begin with, the content and

discourse analyses of smartphone advertising were based on a sample of texts produced by leading manufacturers who supply smartphones for the North American market. Moreover, only contemporary and heavily promoted models were analyzed, even though manufacturers made available to consumers older models and additional product lines.

In addition, the text sample included only product advertising published on each manufacturer's website and excluded advertising in other media, such as magazines, mobile carrier websites, and television. Although the sample was limited to English texts, the examined advertising was published on global product websites with wide audience reach. Text copy on these websites was translated by manufacturers into local languages and content layout, images, and themes were preserved across regional localizations. Taken together, these limitations circumscribe the breadth of the presented findings, which are based on a specific subset of each manufacturer's marketing and advertising activities.

In a similar way, only a subset of the most popular technology media publishers was examined for this research study. Moreover, this measure of popularity was based on a publisher's capacity to frequently publish articles and attract a large social media following. This criteria is thus biased in favour of publishers who rapidly publish content. Other publishers that were not included in the study may contribute fewer articles but these articles may have included in-depth news coverage, commentary, or other forms of content that demand longer editorial cycles. These limitations thus restrict the breadth of the reported findings which exclude news reporting, assessment, and expertise circulated by these other publishers.

In addition, examined articles were limited to technology media publishers based in the United States. Although the existence of content relevant to European and Asian audiences suggested a global reach for these publishers, all of the examined articles were published in English. Publishers based in Europe and Asia were not included in the study, even though both regions include large and well-established smartphone markets. Thus, the presented findings and analysis need to be understood as relative to a North American publishing context. The nature of news coverage, promotion, and expertise

characteristic of foreign publishers may differ across regions to reflect local sociocultural variations in smartphone consumption.

Likewise, the reader discussions examined for this research study were conducted exclusively in English. Although some discussion participants undoubtedly originated from outside of North America, the study did not attempt to identify readers based on geographical region. As a second language, English is today increasingly commonplace in parts of Europe and Asia, although proficiency is likely to be correlated with class and education. In addition, the enthusiasts most likely to participate in online discussions are unlikely to be representative of smartphone users in general. With respect to gender, for example, technology has historically been circumscribed as a male domain and this cultural bias continues to be reflected in disproportional enrolment rates in technical fields of study (e.g. engineering). Thus, even though the research did not attempt to identify discussion participants, they are unlikely to be representative of the general population of smartphone users. Given these considerations, the presented findings must be understood in relation to a specific set of media consumers and should not be extended beyond these parameters.

Future Research

Due to time and resource restrictions, several areas of interest were excluded from the study that would have expanded the scope and depth of analysis. The research findings also point to new avenues of inquiry that build upon the current study. To begin with, given the prominence of social media and its wide adoption by global corporations it would be worthwhile to examine the ways in which manufacturers employ social media to extend their promotion beyond product advertising. Given their interactive character, how are these new platforms being mobilized by manufacturers to encourage consumer sociability around brands and products? And how do social media users actually engage with these emerging promotional strategies? Given this direct contact between producers and consumers, in what ways can smartphone users be said to participate in the construction of new communication technologies? Does social media represent a new platform for democratic rationalization (Feenberg, 1999) whereby a greater diversity

of public inputs enter the design process? Or is social media simply a public relations vehicle through which manufacturers attempt to foster brand loyalty?

Shifting focus to technology media, the undertaken research focused exclusively on the online publishing activities of select publishers. While this focus included an in-depth analysis of textual content, it did not include an examination of other media production activities. In addition to the publication of articles, technology media publishers also distributed via their websites audio podcasts, video talk shows, industry event coverage, as well as digital magazines. These additional content formats suggest that technology media publishing is an expanding form of cultural production that builds upon the affordances of the internet to distribute diverse forms of content independently of traditional media channels. Given this expanding media activity, what is the nature of news coverage, commentary, and expertise circulated via these additional content formats? And in what ways does it draw upon and differ from online article publishing and promotion? Considered within the wider media environment, to what extent is technology media content referenced and included as part of traditional news media coverage? In particular, which content formats and forms of expertise are drawn upon? Given the ongoing funding crisis in news journalism, is technology lifestyle news increasing in prominence as a low-cost content substitute that is attractive to advertisers? Given the general readership of traditional news media, do readers engage with this content in ways that differ from technology media reader discussions?

More broadly, it would be worthwhile to examine online media production by technology users outside of manufacturer-led and publisher-controlled media spaces. The popularity of personal blogs, user-generated videos, and online forums indicates that technology users not only engage with commercial media online but are also active cultural producers themselves. Given this growing media production, what forms of content do users create and distribute in relation to technology consumption? To what extent does this content resemble and differ from commercial media production? And how do these user-created media texts extend and undermine the promotional efforts of manufacturers and technology media publishers? What additional forms of cultural capital and expertise circulate in these popular media spaces? Lastly, through these

emerging media practices, how do users contribute to and resist technology obsolescence?

Concluding Remarks

In North America, mobile carriers have historically obscured the cost of smartphones by requiring customers to only pay a small up-front fee for a new device in exchange for a multi-year contract that recoups the actual cost of the smartphone via monthly plan fees. Only when consumers try to cancel their contract, and are required to pay the outstanding balance on their account, are they often made aware of the total cost of their device. Equally importantly, carriers use this model as an economic incentive to encourage consumers to replace their devices upon contract completion. Since a significant proportion of monthly plan fees are allocated towards offsetting the cost of the smartphone, keeping an existing device beyond the contract period results in a net economic loss for consumers, who continue to pay a subsidy for a device that has already been paid for in its entirety. A framework of investment and entitlement is thus established: contract renewal implies the abandonment of an existing smartphone and the selection of a new device. Given the rapid pace of change in the mobile industry and the continual introduction of new devices, the start of this synthetic cycle provides an impetus for consumers to explore available options and engage in product research.

In recent years, however, new mobile plans have emerged in North America that provide consumers with alternatives to subsidized smartphones and fixed-term contracts. Since device costs are no longer hidden in monthly fees, these plans are typically cheaper on a per-month basis but consumers are required to either use an existing smartphone or purchase a new device outright at the start of the plan. Since there is no binding contract and no established period of renewal, there is no longer an economic incentive for voluntary device replacement. Moreover, since the full cost of the smartphone is apparent and must be covered in its entirety at the outset, these new plans represent a potential disincentive to rapid replacement of functional devices.

Although these plans are relatively new to Canada and the United States, phone subsidies have historically been uncommon outside of North America. As increasingly

more people move from feature phones to smartphones, global adoption is thus unlikely to be subsidized by carriers. Most new global consumers will likely need to purchase their devices before they can be activated on prepaid and low-cost monthly plans. To address the needs of this growing global market, manufacturers have recently focused their attention on inexpensive smartphone designs that include lower capacity components and software that excels on lower performance hardware. Even though the absence of device subsidies may slow voluntary device replacement in the short-term, it is equally possible that in the long-term dropping device costs may render the smartphone, like the feature phone before it, a disposable product that can be easily replaced, a shift that would result in rapid obsolescence on a global scale.

Despite this possibility, we can also ask whether the smartphone, like other (new) communication technologies that came before it, is simply the object of a collective infatuation that will pass with time? As it gradually becomes a stable artefact and communication platform, will it not be increasingly relegated to the background of daily life? If we look to the personal computer as a model, we can see some evidence that supports this possibility. At the same time, we can also reasonably expect that smartphone manufacturers will continue to rely on software to perpetually introduce novelty to their products. Software interfaces and applications can be continually altered to destabilize user experiences and ward off habituation. The continuation and prevalence of this mode of development would support the contention that established first modernity institutions and consumption logics, rather than their reflexive counterparts, continue to structure the production and consumption of communication technology despite the threats posed by a global environmental crisis.

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Appendix A.

Smartphone Advertising and Promotion

This appendix includes a full listing of smartphone manufacturer webpages and sub-pages to provide readers with a complete summary of examined texts. Although some of the webpages will have been modified since July, 2013 the original versions may be accessed via the Internet Archive (https://www.archive.org/).

Table A1   Apple's Smartphone Advertising and Promotion

Title	URL
Apple - Apple and the Environment	http://www.apple.com/environment/
Apple - Environment - Energy Efficiency	http://www.apple.com/environment/energy-efficiency
Apple - Environment - Environmental Progress	http://www.apple.com/environment/progress/
Apple - Environment - FAQ	http://www.apple.com/environment/faq
Apple - Environment - Renewable Energy	http://www.apple.com/environment/renewable-energy/
Apple - Environment - Reports	http://www.apple.com/environment/reports/
Apple - iOS 7	http://www.apple.com/ios/ios7/
Apple - iOS 7 - Design	http://www.apple.com/ios/ios7/design/
Apple - iOS 7 - Features	http://www.apple.com/ios/ios7/features/
Apple - iPhone 5 - Buy	http://store.apple.com/us/iphone
Apple - iPhone 5 - Design	http://www.apple.com/iphone/design/
Apple - iPhone 5 - Features	http://www.apple.com/iphone/features/
Apple - iPhone 5 - iCloud	http://www.apple.com/iphone/icloud/
Apple - iPhone 5 - iOS	http://www.apple.com/iphone/ios/
Apple - iPhone 5 - Learn about apps from the App Store	http://www.apple.com/iphone/from-the-app-store/
Apple - iPhone 5 - Loving it is easy. That's why so many people do	http://www.apple.com/iphone/
Apple - iPhone 5 - Tech Specs	http://www.apple.com/iphone/specs.html
Apple - iPhone 5 - The best of everything. Built right in	http://www.apple.com/iphone/built-in-apps/
Apple - iPhone 5 - Why iPhone	http://www.apple.com/iphone/why-iphone/
Apple - Recycling - Apple Recycles Responsibly	http://www.apple.com/recycling/recycles-responsibly
Apple - Recycling - F.A.Q.	http://www.apple.com/recycling/recycling-faq
Apple - Recycling Program	http://www.apple.com/recycling/

Title	URL
Apple - Recycling Program for iPod and Mobile Phones	http://www.apple.com/recycling/ipod-cell-phone/
Apple - The Story Behind Apple's Environmental Footprint	http://www.apple.com/environment/our-footprint/

Table A2   BlackBerry's Smartphone Advertising and Promotion

Title	URL
BlackBerry Z10 Accessories - Z10 Cases - Smartphone Accessories - US	http://us.blackberry.com/smartphones/blackberry-z10/accessories.html
BlackBerry Z10 - Buy unlocked BlackBerry Z10 phones at Shop BlackBerry or visit Verizon, T-Mobile, AT&T, Best Buy or Radio Shack - US	http://us.blackberry.com/smartphones/blackberry-z10/buy.html
BlackBerry Z10 Smartphone - BlackBerry 10 Touch Phone - US	http://us.blackberry.com/smartphones/blackberry-z10.html
BlackBerry Z10 Smartphone - BlackBerry 10 Touch Phone - US	http://us.blackberry.com/smartphones/blackberry-z10.html
BlackBerry Z10 Smartphone - BlackBerry 10 Touch Phone - US - Apps	http://us.blackberry.com/smartphones/blackberry-z10.html
BlackBerry Z10 Smartphone - BlackBerry 10 Touch Phone - US - BlackBerry Balance	http://us.blackberry.com/smartphones/blackberry-z10.html
BlackBerry Z10 Smartphone - BlackBerry 10 Touch Phone - US - BlackBerry Remember	http://us.blackberry.com/smartphones/blackberry-z10.html
BlackBerry Z10 Smartphone - BlackBerry 10 Touch Phone - US - BlackBerry World	http://us.blackberry.com/smartphones/blackberry-z10.html
BlackBerry Z10 Smartphone - BlackBerry 10 Touch Phone - US - Editing & Sharing Photos	http://us.blackberry.com/smartphones/blackberry-z10.html
BlackBerry Z10 Smartphone - BlackBerry 10 Touch Phone - US - Gallery	http://us.blackberry.com/smartphones/blackberry-z10.html
BlackBerry Z10 Smartphone - BlackBerry 10 Touch Phone - US - Games	http://us.blackberry.com/smartphones/blackberry-z10.html
BlackBerry Z10 Smartphone - BlackBerry 10 Touch Phone - US - Highlights - BBM Video with Screen Share	http://us.blackberry.com/smartphones/blackberry-z10.html
BlackBerry Z10 Smartphone - BlackBerry 10 Touch Phone - US - Highlights - BlackBerry Hub	http://us.blackberry.com/smartphones/blackberry-z10.html
BlackBerry Z10 Smartphone - BlackBerry 10 Touch Phone - US - Highlights - BlackBerry Keyboard	http://us.blackberry.com/smartphones/blackberry-z10.html

Title	URL
BlackBerry Z10 Smartphone - BlackBerry 10 Touch Phone - US - Highlights - Camera with Time-Shift Mode	http://us.blackberry.com/smartphones/blackberry-z10.html
BlackBerry Z10 Smartphone - BlackBerry 10 Touch Phone - US - Intelligent Calendar	http://us.blackberry.com/smartphones/blackberry-z10.html
BlackBerry Z10 Smartphone - BlackBerry 10 Touch Phone - US - Music	http://us.blackberry.com/smartphones/blackberry-z10.html
BlackBerry Z10 Smartphone - BlackBerry 10 Touch Phone - US - Sharing Made Easy With NFC	http://us.blackberry.com/smartphones/blackberry-z10.html
BlackBerry Z10 Smartphone - BlackBerry 10 Touch Phone - US - Smart Responsive Display	http://us.blackberry.com/smartphones/blackberry-z10.html
BlackBerry Z10 Smartphone - BlackBerry 10 Touch Phone - US - Specifications	http://us.blackberry.com/smartphones/blackberry-z10.html
BlackBerry Z10 Smartphone - BlackBerry 10 Touch Phone - US - Super-Fast Browsing	http://us.blackberry.com/smartphones/blackberry-z10.html
BlackBerry Z10 Smartphone - BlackBerry 10 Touch Phone - US - Trusted Security	http://us.blackberry.com/smartphones/blackberry-z10.html
BlackBerry Z10 Smartphone - BlackBerry 10 Touch Phone - US - Video	http://us.blackberry.com/smartphones/blackberry-z10.html
BlackBerry Z10 Smartphone - BlackBerry 10 Touch Phone - US - Voice Control	http://us.blackberry.com/smartphones/blackberry-z10.html
BlackBerry Z10 Specs - BlackBerry Touch Screen Display Specs - US	http://us.blackberry.com/smartphones/blackberry-z10/specifications.html

Table A3   Samsung's Smartphone Advertising and Promotion

Title	URL
Samsung GALAXY S4 - Fun	http://www.samsung.com/global/microsite/galaxys4/fun.html
Samsung GALAXY S4 - Fun - Drama Shot	http://www.samsung.com/global/microsite/galaxys4/fun.html#page=dramashot
Samsung GALAXY S4 - Fun - Dual Shot	http://www.samsung.com/global/microsite/galaxys4/fun.html#page=dualshot
Samsung GALAXY S4 - Fun - Group Play	http://www.samsung.com/global/microsite/galaxys4/fun.html#page=groupplay
Samsung GALAXY S4 - Fun - Samsung Hub	http://www.samsung.com/global/microsite/galaxys4/fun.html#page=samsunghub
Samsung GALAXY S4 - Fun - Sound Shot	http://www.samsung.com/global/microsite/galaxys4/fun.html#page=shoundshot

Title	URL
Samsung GALAXY S4 - Fun - Story Album	http://www.samsung.com/global/microsite/galaxys4/fun.html#page=storyalbum
Samsung GALAXY S4 - Life Care	http://www.samsung.com/global/microsite/galaxys4/lifecare.html
Samsung GALAXY S4 - Life Care - Adapt Display	http://www.samsung.com/global/microsite/galaxys4/lifecare.html#page=adaptdisplay
Samsung GALAXY S4 - Life Care - Adapt Sound	http://www.samsung.com/global/microsite/galaxys4/lifecare.html#page=adaptsound
Samsung GALAXY S4 - Life Care - S Health	http://www.samsung.com/global/microsite/galaxys4/lifecare.html#page=shealth
Samsung GALAXY S4 - Life Companion	http://www.samsung.com/global/microsite/galaxys4/
Samsung GALAXY S4 - Life Companion - Accessories	http://www.samsung.com/global/microsite/galaxys4/
Samsung GALAXY S4 - Life Companion - Design	http://www.samsung.com/global/microsite/galaxys4/
Samsung GALAXY S4 - Life Companion - Gallery	http://www.samsung.com/global/microsite/galaxys4/
Samsung GALAXY S4 - Life Companion - Media	http://www.samsung.com/global/microsite/galaxys4/
Samsung GALAXY S4 - Life Companion - Specifications	http://www.samsung.com/global/microsite/galaxys4/
Samsung GALAXY S4 - Life Task	http://www.samsung.com/global/microsite/galaxys4/lifetask.html
Samsung GALAXY S4 - Life Task - Air View / Air Gesture	http://www.samsung.com/global/microsite/galaxys4/lifetask.html#page=airview
Samsung GALAXY S4 - Life Task - Samsung HomeSync	http://www.samsung.com/global/microsite/galaxys4/lifetask.html#page=homesync
Samsung GALAXY S4 - Life Task - Samsung KNOX	http://www.samsung.com/global/microsite/galaxys4/lifetask.html#page=knox
Samsung GALAXY S4 - Life Task - Samsung WatchON	http://www.samsung.com/global/microsite/galaxys4/lifetask.html#page=watchon
Samsung GALAXY S4 - Life Task - Smart Pause	http://www.samsung.com/global/microsite/galaxys4/lifetask.html#page=smartpause
Samsung GALAXY S4 - Relationship	http://www.samsung.com/global/microsite/galaxys4/relationship.html
Samsung GALAXY S4 - Relationship - ChatON	http://www.samsung.com/global/microsite/galaxys4/relationship.html#page=chaton
Samsung GALAXY S4 - Relationship - S Translator	http://www.samsung.com/global/microsite/galaxys4/relationship.html#page=stranslator
Samsung - Infinite Possibilities - Galaxy S4	http://galaxys4possibilities.com/
Samsung - Infinite Possibilities - Galaxy S4 - Casting Calls	http://galaxys4possibilities.com/view/casting/

Title	URL
Samsung - Infinite Possibilities - Galaxy S4 - Features	http://galaxys4possibilities.com/features/
Samsung - Infinite Possibilities - Galaxy S4 - Online Auditions	http://galaxys4possibilities.com/view/
Samsung - Infinite Possibilities - Galaxy S4 - Rewards	http://galaxys4possibilities.com/rewards/
Samsung - Infinite Possibilities - Galaxy S4 - Rewards - Winner - Blake	http://galaxys4possibilities.com/rewards/meet-blake/
Samsung - Infinite Possibilities - Galaxy S4 - Rewards - Winner - Nick	http://galaxys4possibilities.com/rewards/meet-nick/
Samsung - Mobile	http://www.samsung.com/ca/#mobile-devices-home
Samsung - Mobile - Galaxy S4 - Features	http://www.samsung.com/ca/consumer/mobile/mobile-phones/smartphones/SGH-I337ZKABMC-features
Samsung - Mobile - Galaxy S4 - Gallery	http://www.samsung.com/ca/consumer/mobile/mobile-phones/smartphones/SGH-I337ZKABMC-gallery
Samsung - Mobile - Galaxy S4 - Overview	http://www.samsung.com/ca/consumer/mobile/mobile-phones/smartphones/SGH-I337ZKABMC
Samsung - Mobile - Galaxy S4 - Reviews	http://www.samsung.com/ca/consumer/mobile/mobile-phones/smartphones/SGH-I337ZKABMC-reviews
Samsung - Mobile - Galaxy S4 - Support	http://www.samsung.com/ca/consumer/mobile/mobile-phones/smartphones/SGH-I337ZKABMC-support
Samsung - Mobile - Galaxy S4 - Tech Specs	http://www.samsung.com/ca/consumer/mobile/mobile-phones/smartphones/SGH-I337ZKABMC-spec
Samsung - Mobile - Mobile Phones	http://www.samsung.com/ca/consumer/mobile/mobile-phones/
Samsung - Mobile - Mobile Phones - Smartphones	http://www.samsung.com/ca/consumer/mobile/mobile-phones/smartphones/
Samsung - Recycling Direct	http://pages.samsung.com/ca/green/English/
Samsung - Recycling Direct for Business	http://pages.samsung.com/ca/greenbiz/English/
Samsung - Smart Switch	http://www.samsung.com/ca/support/smartswitch/

Appendix B.

Technology Media Publishing and Reader Discussions

This appendix includes a full listing of technology media articles to provide readers with a complete summary of examined articles and their associated reader discussions. All articles are archived online by each respective publisher.

Table B1   Articles Published by *Ars Technica*

Title	URL
128GB iPhones and iPads may be coming sooner than later	http://arstechnica.com/apple/2013/01/128gb-iphones-and-ipads-may-be-coming-sooner-than-later/
A dark horse looks to conquer the West with "world's fastest smartphone"	http://arstechnica.com/gadgets/2013/02/a-dark-horse-looks-to-conquer-the-west-with-worlds-fastest-smartphone/
An imperfect ten: the BlackBerry Z10 smartphone review.	http://arstechnica.com/gadgets/2013/02/an-imperfect-ten-the-blackberry-z10-smartphone-review/
Apple fires Chinese supplier for using underage workers.	http://arstechnica.com/apple/2013/01/apple-fires-chinese-supplier-for-using-underage-workers/
Apple nabs crown as current top US mobile phone vendor.	http://arstechnica.com/apple/2013/02/apple-nabs-crown-as-current-top-us-mobile-phone-vendor/
Ask Ars: Why will Apple's Do Not Disturb bug fix itself next week?	http://arstechnica.com/apple/2013/01/ask-ars-why-will-apples-do-not-disturb-bug-fix-itself-next-week/
BlackBerry Enterprise Service 10: Your questions answered.	http://arstechnica.com/gadgets/2013/02/blackberry-enterprise-service-10-your-questions-answered/
BlackBerry's high unit sales in UK and Canada may be overestimated.	http://arstechnica.com/gadgets/2013/02/blackberrys-high-units-sales-in-uk-and-canada-may-be-overestimated/
Bring us the features! An Ars staff wish list for iOS 7.	http://arstechnica.com/apple/2013/01/bring-us-the-features-an-ars-staff-wish-list-for-ios-7/
Five features iOS should steal from Android.	http://arstechnica.com/apple/2013/03/five-features-ios-should-steal-from-android/
Five features we wish Android would borrow from iOS.	http://arstechnica.com/gadgets/2013/03/five-features-we-wish-android-would-borrow-from-ios/
Hands-on with Mozilla's Web-based "Firefox OS" for smartphones.	http://arstechnica.com/gadgets/2013/03/firefox-os-hands-on-mozillas-plan-to-build-on-top-of-the-web/
Hours before Galaxy S IV reveal, Apple's Schiller bashes Android.	http://arstechnica.com/apple/2013/03/hours-before-galaxy-s-iv-reveal-apples-schiller-slams-android/

Title	URL
HTC One delayed by manufacturing snafus.	http://arstechnica.com/gadgets/2013/03/htc-one-delayed-by-manufacturing-snafus/
Rumor mill gets rolling on next Nexus handset..	http://arstechnica.com/gadgets/2013/03/rumor-mill-gets-rolling-on-next-nexus-handset/
Ice Cream Sandwich and Jelly Bean get a big bump from the holidays.	http://arstechnica.com/gadgets/2013/01/ice-cream-sandwich-and-jelly-bean-get-a-big-bump-from-the-holidays/
iPhone users watch far more online video than Android users.	http://arstechnica.com/apple/2013/03/iphone-users-watch-far-more-online-video-than-android-users/
Latest iOS jailbreak: Nearly 7 million served.	http://arstechnica.com/apple/2013/02/latest-ios-jailbreak-nearly-7-million-served/
LG speaks out about Nexus 4 supply chain, insists there are no issues.	http://arstechnica.com/gadgets/2013/01/lg-speaks-out-about-nexus-4-supply-chain-insists-there-are-no-issues/
New ad campaign will change your mobile handset into a BlackBerry one.	http://arstechnica.com/gadgets/2013/03/new-ad-campaign-will-change-your-mobile-handset-into-a-blackberry-one/
New untethered jailbreak works for iDevices running iOS 6.x.	http://arstechnica.com/apple/2013/02/new-untethered-jailbreak-works-for-idevices-running-ios-6-x/
Nokia's next-gen Windows Phone may get a 41-megapixel camera.	http://arstechnica.com/gadgets/2013/01/nokias-next-gen-windows-phone-may-get-a-41-megapixel-camera/
Review: Samsung's ATIV Odyssey is Windows Phone 8 on a budget.	http://arstechnica.com/gadgets/2013/02/review-samsungs-ativ-odyssey-is-windows-phone-8-on-a-budget/
RIM's BlackBerry 10 bets on gestures for its saving grace.	http://arstechnica.com/gadgets/2013/01/rims-blackberry-10-bets-on-gestures-for-its-saving-grace/
Samsung sends cryptic invite for Galaxy S IV announcement on March 14.	http://arstechnica.com/gadgets/2013/02/samsung-sends-cryptic-invite-for-galaxy-s-iv-announcement-on-march-14/
Six things we want to see in Samsung's Galaxy S IV.	http://arstechnica.com/gadgets/2013/03/six-things-we-want-to-see-in-samsungs-galaxy-s-iv/
Who needs thumbs? Samsung Galaxy S IV may scroll using eye-tracking.	http://arstechnica.com/gadgets/2013/03/who-needs-thumbs-samsung-galaxy-s-iv-will-scroll-using-eye-tracking/

Table B2   Articles Published by *Engadget*

Title	URL
Ask Engadget: best email phone?	http://www.engadget.com/2013/02/02/ae-email-phone/
Ask Engadget: best language to develop apps for Android and iOS?	http://www.engadget.com/2013/03/02/ae-best-app-development-language/
Ask Engadget: best roaming options for a trip to the UK and ROI?	http://www.engadget.com/2013/02/09/ae-uk-roaming/
Ask Engadget: best smartphone car mount?	http://www.engadget.com/2013/01/05/ae-smartphone-car-gps-mount/
Ask Engadget: how long should I first-charge a battery?	http://www.engadget.com/2013/03/09/ae-battery-overcharging/
ASUS PadFone Infinity vs. PadFone 2... fight!	http://www.engadget.com/2013/02/25/asus-padfone-infinity-vs-padfone-2-fight/
Benchmarking CES 2013's flagship smartphones	http://www.engadget.com/2013/01/11/benchmarking-ces-2013s-flagship-smartphones/
BlackBerry Bold vs BlackBerry Q10: fight!	http://www.engadget.com/2013/01/30/blackberry-bold-q10-fight/
BlackBerry Z10 review	http://www.engadget.com/2013/01/30/blackberry-z10-review/
BlackBerry Z10 vs. the competition: fight!	http://www.engadget.com/2013/01/30/blackberry-z10-iphone-5-nexus-4-lumia-920/
CE-Oh no he didn't!: Apple's Phil Schiller needles Android's fragmentation, user experience	http://www.engadget.com/2013/03/13/ce-oh-no-he-didnt-phil-schiller-fragmentation/
CE-Oh no he didn't!: HTC's CMO Ben Ho says the Galaxy S 4 is just "more of the same."	http://www.engadget.com/2013/03/15/htc-cmo-ben-ho-galaxy-s-4/
ComScore: Apple strengthens lead as top US handset maker in early 2013, Android takes a small hit	http://www.engadget.com/2013/03/06/comscore-apple-top-us-handset-maker-early-2013/
CyanogenMod 10.1 stock camera app now sports HDR shooting	http://www.engadget.com/2013/02/20/cyanogenmod-hdr-camera/
Developer preview of touch-based Ubuntu is called that for a reason (hands-on video)	http://www.engadget.com/2013/02/20/ubuntu-dev-preview-hands-on/
Editorial: Engadget on BlackBerry 10	http://www.engadget.com/2013/01/30/editorial-engadget-blackberry-10/
Evasi0n untethered jailbreak for iOS 6 arrives to free your iPhone 5 and iPad mini	http://www.engadget.com/2013/02/04/evasi0n-untethered-jailbreak-ios-6/
Firefox OS shows up on a mystery phone, we go hands-on	http://www.engadget.com/2013/01/07/firefox-os-mystery-phone/
French LG exec says Nexus 4 shortages due to Google's poor estimates	http://www.engadget.com/2013/01/17/french-lg-exec-says-nexus-4-shortages-due-to-google/

Title	URL
Galaxy S IV dam springs another leak with floating touch and SmartPause videos	http://www.engadget.com/2013/03/14/galaxy-s-iv-dam-springs-another-leak-with-floating-touch-and-sma/
Game Boy repurposed as an Android gamepad, adds retro flair to your mobile gaming	http://www.engadget.com/2013/01/10/game-boy-android-gamepad/
Hackulous closure prompts rise of portals that allow bootleg iOS apps without a jailbreak	http://www.engadget.com/2013/01/02/hackulous-closure-prompts-rise-of-portals-that-allow-bootleg-ios-apps/
Hands-on with Tizen 2.0 on Samsung's developer handset (video)	http://www.engadget.com/2013/02/26/tizen-developer-phone-hands-on/
HTC Droid DNA vs. J Butterfly vs. Butterfly: fight!	http://www.engadget.com/2013/02/07/htc-droid-dna-butterfly/
HTC One review (2013)	http://www.engadget.com/2013/03/12/htc-one-review/
HTC One software hands-on	http://www.engadget.com/gallery/htc-one-software-hands-on/
HTC One vs One X, One X+: what's changed?	http://www.engadget.com/2013/02/19/htc-one-whats-changed/
Jelly Bean now on 13 percent of Android devices, 45 percent still on Gingerbread	http://www.engadget.com/2013/02/05/android-statistics/
Kantar: Apple's smartphone OS still the top selling in US for last quarter of 2012	http://www.engadget.com/2013/01/22/kantar-ios/
LG Optimus G Pro review: a phone that lives up to Note-sized expectations	http://www.engadget.com/2013/03/05/lg-optimus-g-pro-review/
Motorola workforce to drop by 10 percent, cuts being made in US, China and India	http://www.engadget.com/2013/03/08/motorola-workforce-to-drop-by-10-percent/
Nokia Lumia 620 review: precisely what an entry-level smartphone should b	http://www.engadget.com/2013/02/07/nokia-lumia-620-review/
Rough hack converts an Optimus G to a Nexus 4, minus the constant sellouts	http://www.engadget.com/2013/01/14/rough-hack-converts-an-optimus-g-to-a-nexus-4/
Samsung announces SAFE with Knox, details plans to secure the enterprise Galaxy (hands-on)	http://www.engadget.com/2013/02/25/samsung-safe-with-knox/
Samsung Galaxy S 4 vs. Galaxy S III: what's changed?	http://www.engadget.com/2013/03/14/samsung-galaxy-s-4-whats-changed/
Samsung Galaxy S IV gets detailed in extensive early preview, screen examined up close	http://www.engadget.com/2013/03/14/galaxy-s-iv-gets-detailed-in-extensive-early-preview-screen-exa/
Samsung hires "secret messenger" Jeremy to guard the S IV until March 14th	http://www.engadget.com/2013/03/04/samsung-secret-messenger/
Samsung's comically large Galaxy Note 8.0 smartphone: purely a brand play, if nothing else	http://www.engadget.com/2013/02/24/samsung-galaxy-note-8-is-a-brand-play/

Title	URL
Samsung's JK Shin: there's "lackluster demand" for Windows-based phones, tablets	http://www.engadget.com/2013/03/15/jk-shin-no-demand-windows-products/
Samsung's latest Galaxy S IV teaser shows the outline of... a phone	http://www.engadget.com/2013/03/11/samsung-galaxy-s-iv-teaser-pic/
Sony handcrafts its CES products in reverse-teardown (video)	http://www.engadget.com/2013/01/17/sony-handcrafts-its-ces-products-in-reverse-teardown-video/
Sony Xperia Z review	http://www.engadget.com/2013/02/20/sony-xperia-z-review/
Sony Xperia Z rooted before it reaches most buyers	http://www.engadget.com/2013/02/19/sony-xperia-z-rooted-before-it-reaches-most-buyers/
Strategy Analytics: Android claimed 70 percent of world smartphone share in Q4 2012	http://www.engadget.com/2013/01/29/strategy-analytics-android-70-percent-share/
Supposed Galaxy S 4 leak resurfaces in high-res pics, lists more features and specs	http://www.engadget.com/2013/03/13/galaxy-s-iv-chinese-leak-pics-hover-s-pen/
The ever-expanding smartphone screen: how supersized became everyday	http://www.engadget.com/2013/03/01/the-ever-expanding-smartphone-screen/
When being better doesn't equal victory: Samsung's curious overshadowing of HTC	http://www.engadget.com/2013/03/15/samsung-htc-design-marketing-battle/

Table B3   Articles Published by *The Verge*

Title	URL
Alleged Galaxy S 4 video shows a lot more than Samsung's teasers	http://www.theverge.com/2013/3/12/4093048/galaxy-s-4-video-leak-rumor
Apple said to halve orders for iPhone 5 displays, possibly due to "weaker-than-expected" demand	http://www.theverge.com/2013/1/13/3874210/apple-cuts-iphone-5-parts-orders
Apple stays on the defensive with new iPhone promotional campaign	http://www.theverge.com/2013/3/16/4112988/apple-stays-on-the-defensive-with-new-iphone-promotional-campaign
BlackBerry 10 against the competition: how the Z10 fares against iPhone, Samsung, and others	http://www.theverge.com/2013/1/30/3932690/blackberry-10-versus-competition-z10-apple-samsung-htc-nokia
BlackBerry Z10 review: a new life, or life support?	http://www.theverge.com/2013/1/30/3929760/blackberry-z10-review
Gartner smartphone report: battle rages for third place behind Apple and Samsung	http://www.theverge.com/2013/2/13/3983598/gartner-q4-2012-smartphone-report-apple-samsung-huawei
Google's Motorola to lay off a further 10 percent of its workforce	http://www.theverge.com/2013/3/8/4077904/googles-motorola-to-lay-off-a-further-10-percent-of-its-workforce

Title	URL
Hands-on with Ubuntu's brand-new, gesture-based phone OS	http://www.theverge.com/2013/1/2/3828266/ubuntu-phone-os-hands-on
How does the HTC One stack up against the competition?	http://www.theverge.com/2013/2/19/4004704/htc-one-specs-compare-nexus-4-iphone-5-galaxy-s-iii-lumia-920-blackberry-z10
HTC One review	http://www.theverge.com/2013/3/11/4086390/htc-one-review
HTC's One delayed because suppliers think it's "no longer a tier-one customer," says WSJ	http://www.theverge.com/2013/3/19/4122798/htc-one-delayed-because-of-component-shortage
Leaked videos show Galaxy S 4 SmartPause, eye tracking, and new lock screen	http://www.theverge.com/2013/3/14/4102924/galaxy-s4-video-leak
LG deflects blame for Nexus 4 supply issue	http://www.theverge.com/2013/1/14/3877318/lg-deflects-blame-for-nexus-4-supply-issues
LG France says Nexus 4 production ramping up after Google underestimated demand	http://www.theverge.com/2013/1/21/3899550/lg-france-says-nexus-4-production-ramping-up
Meet the tiny, Florida-based phone maker that thinks it can beat Samsung	http://www.theverge.com/2013/3/18/4100006/why-blu-products-can-beat-samsung
Microsoft's claim of outselling the iPhone isn't as impressive as it sounds	http://www.theverge.com/2013/3/27/4154812/microsoft-windows-phone-vs-iphone-sales-claims
Mozilla's Firefox OS demoed, coming to emerging markets later this year (hands-on)	http://www.theverge.com/2013/1/7/3848992/mozillas-firefox-os-pictures-video-demo
Nexus 4 sales estimated at 375,000 by enthusiasts decoding serial numbers	http://www.theverge.com/2013/1/3/3830884/xda-developers-estimates-nexus-4-sales-at-370k
Nokia "exceeded expectations" with an estimated 4.4 million Lumia phones sold in fourth quarter	http://www.theverge.com/2013/1/10/3859490/nokia-estimates-4-4-million-lumia-phones-sold-q4-2012
Nokia's Windows Phone range is complete, now it's up to Microsoft	http://www.theverge.com/2013/2/28/4039466/nokia-lumia-strategy-time-for-windows-phone-2013
Phil Schiller knocks Galaxy S 4 for "year-old software," claims Apple does things better	http://www.theverge.com/2013/3/14/4103034/phil-schiller-samsung-s-4-year-old-software
Samsung Ativ Odyssey review: do we need a third kind of Windows Phone?	http://www.theverge.com/2013/3/4/4014698/samsung-ativ-odyssey-review
Samsung Galaxy S 4 revealed in leaked images	http://www.theverge.com/2013/3/13/4102174/samsung-galaxy-s-iv-revealed-in-detailed-images
Samsung's Galaxy S 4 may have leaked on Chinese forum	http://www.theverge.com/2013/3/11/4088652/samsung-galaxy-s-4-gt-i9502-chinese-forum-leak-pictures
Samsung weird: how a phone launch went from Broadway glitz to sexist mess	http://www.theverge.com/2013/3/18/4119052/samsung-weird-behind-the-scenes-of-the-sexist-galaxy-s4-launch
Smartphone stragglers: Microsoft and BlackBerry battle to secure third place	http://www.theverge.com/2013/1/30/3931966/microsoft-vs-blackberry-third-spot

Title	URL
Sony Xperia Z review	http://www.theverge.com/2013/3/11/4084004/sony-xperia-z-review
The Galaxy S IIIS: how Samsung copies Apple by copying itself	http://www.theverge.com/2013/3/14/4105448/how-samsung-copies-apple-by-copying-itself
Tim Cook reminds employees that working for Apple is better than working for Exxon	http://www.theverge.com/2013/1/27/3921454/tim-cook-holds-employee-town-hall-talks-apple-stock-android-exxon
Tizen 2.0 is three parts Android, one part webOS (hands-on)	http://www.theverge.com/2013/2/27/4035040/tizen-2-0-is-three-parts-android-one-part-webos-hands-on