Openly Embracing Change

How the Rebus Foundation is Building a New Model of Publishing

by

Zoe Wake Hyde
BCS (Hons), Auckland University of Technology, 2012

Project Submitted in Partial Fulfilment of the
Requirements for the Degree of
Master of Publishing

in the
Publishing Program
Faculty of Communication, Art and Technology

Simon Fraser University
Fall 2016

Approval

Name:	Zoe Wake Hyde
Degree:	Master of Publishing
Title of Project:	Openly Embracing Change: How the Rebus Foundation is Building a New Model of Publishing

Supervisory Committee:

Juan Pablo Alperin
Senior Supervisor
Assistant Professor
Publishing Program
Simon Fraser University

John Maxwell
Supervisor
Associate Professor
Publishing Program
Simon Fraser University

Hugh McGuire
Industry Supervisor
Co-Founder, The Rebus Foundation
Montreal, QC

Date Approved: December 16, 2016

To Amy and Amanda, the wonderful, inspiring women who support me through everything. And to my mother, for making this possible in more ways than I can count. I could not have done it without you all and, more importantly, I wouldn't want to.

— Z

Contents

Abstract

This report discusses the challenges posed to the publishing industry by digital disruption and the shift from content scarcity to content abundance. Publishing business models have been based on the ability to sell exclusive access to content, but low barriers to entry for content creators mean that this model will come under increased pressure. The Rebus Foundation has been founded in response to these challenges and is working to create the tools necessary to define a new publishing process that seeks to both enable and benefit from content abundance. The first projects from the Foundation are being launched in the Open Textbook sphere, where traditional publishers have been able to exclusively sell access to content in a way that is increasingly under threat. In response, the Foundation is launching the Rebus Community to scale up the production of Open Textbooks, deploying open communication, open licensing and open tools that form a collaborative approach first seen with the Open Source community. The Foundation's work, if successful, will have significant consequences for the current education and textbook publishing industries, shifting the value from content to innovative teaching and learning. It will also have consequences for the publishing industry at large, potentially redefining what it means to be a publisher, and modelling an approach to publishing that embraces the undeniable shift that comes from a world of content abundance.

[1]

Introduction

Arguably no industry in the world today has been left untouched by the revolution that began with digital technologies and the internet. Each industry has come up against unique challenges, but those in the content industries—publishing among them—whose business models revolve around selling access to content, have been most deeply challenged by a radical shift from a world of content scarcity to a world of content abundance. In the digital age, it has never been cheaper or easier to publish content. Barriers to entry for creators have nearly evaporated, creating immense competition and an unprecedented and unparalleled crowding of the marketplace. The valid fear that arises from this change is that the economic value of content is threatened when it is no longer a scarce resource, and the traditional leaders of the content industries have been trying to grapple with how to minimise the damage of such a change to their business models or, more sensibly, how they can adapt to it. However, a threat can also be viewed as an opportunity, and while the legacy publishers struggle, new players have entered the market, with the advantage of being able to build a business model from scratch that acknowledges and leverages an environment of abundant content. Others again, as part of the Open Web movement, have taken the opportunity to dismiss commercial imperatives and instead embrace different value systems, where community and shared interests prevail[1]. What results is a climate of tension and innovation, where the future of the content industries is yet to be determined.

It must be acknowledged that by enabling the current environment of abundant content, emerging technologies have highlighted an issue that has always existed in content industries; that information and cultural products are not standard economic goods, and as such the traditional markets around them have always been tenuous[2].

1. From *An Open Web,* the concept of the "Open Web" is that "the World Wide Web from its very inception was designed to be a free and open medium through which human knowledge is created, accessed and exchanged." Read more.
2. Benkler, Y. *The Wealth of Networks: How Social Production Transforms Markets and Freedom*. New Haven: Yale University Press, 2006.

This is because content is “non-rival”, meaning that it is infinitely replicable and any one person consuming it, does not deprive any other from also consuming it. It is largely through copyright laws limiting production rights that content creators, or more specifically copyright holders, have been able to profit from the sale of content, but second-hand sales and other methods of sharing content have always posed a challenge. The market around content has also placed the emphasis on the physical product—print books, in the case of publishing—relying on the cost of production and its tangible clues as to the value of the content to justify their monetary value. However, along with being non-rival, informational and creative content is also different from most economic goods in that it has value to both producers and consumers as a non-market resource, and as a contributor to societal welfare[3]. This has placed a tension at the heart of content industries where socially valued material must be joined with traditional market approaches in order to continue to be produced, which often sees the social value of content sacrificed in favour of monetary value. In light of this, content industries’ economic models have arguably always been tenuous, reliant on income from producing and selling a product that differs significantly from most commodities.

As a result, the introduction of digital technologies that have increased the ease of creation, copying and distribution is seen as an opportunity to resolve the tension by many of those who value content as a cultural good, not simply an economic one. It is possible that through these technologies and a new approach to copyright, the content industries can be shifted away from a fragile economic system, to a robust alternative where content itself is abundantly and freely available to everyone, and its production is funded by business models that are not reliant on the sale of content. In order to respond positively to the challenges posed by digital technologies, one promising solution is to move to employing non-traditional business models (e.g. co-operatives, collective membership models) or selling services around content. In order for such a new system to be successful, content must be open and accessible, the emphasis must be on discovery and curation rather than exclusive production, and given the existence of low- and no-cost tools, competition on cost of production must be forgotten[4]. Currently, traditional content providers are finding this transition exceptionally difficult. Whether this is from fear, ignorance, lack of resources or lack of imagination is unclear, but they must face the reality that the business model of simply selling exclusive access to content is under threat.

In light of these developments, two Canadians—one based in Montreal, the other in Berlin—have recognised an opportunity to realise one of their own ambitions; to bring books to the web. With digital disruption causing chaos in book publishing and growing movements actively seeking a new way to publish, Hugh McGuire and Boris Anthony

3. ibid.
4. O'Leary, B. "Context, Not Container." In *Book: A Futurist's Manifesto*, edited by Hugh McGuire and Brian O'Leary. O'Reilly Media, 2012.

believe they have a chance to positively impact the publishing industry by working to define an entirely new way of producing books, feeding an ecosystem of abundant content and innovative services for readers, and ultimately helping to usher in a new era in publishing. With considerable shared experience in digital publishing, software development and user experience design, combined with a deep appreciation for books and their importance to society, McGuire and Anthony are uniquely positioned to make their vision of the future a reality. To do so, they have founded the Rebus Foundation, and designed an ambitious series of projects that together have the potential to create an entirely new kind of publishing, and an entirely new reading experience.

This report will explore the results of the first six months of development of the Rebus Community, the first project undertaken by the Foundation. As an intern during this time, I was involved with the planning, decision making and pilot launch of the platform, particularly related to communications, community development and product design. The report will begin by discussing the context surrounding content industries in an age of content abundance, and how publishing has been affected so far. It will then detail the Rebus Foundation's direct response to the challenges of a changing landscape for book publishing and offer an assessment of the current Open Education and Open Textbook movements, the members of which are actively seeking a new model of publishing. Following the discussion of context, it will explain the Rebus Foundation's first project—the Rebus Community—in detail, and how communication channels, licensing policy and practical tools are being combined to create a community of practice around Open Textbooks that not only produces quality textbooks, but encourages a culture of collaboration and helps to define a new publishing process. Finally, this report will discuss the implications that arise from the Rebus Foundation's approach to publishing, both for textbook publishers and the publishing industry at large. It will conclude by considering how the Community is poised to move forward and what the future may look like for publishers in an environment where value is no longer extracted from content itself, but from what can be done with that content.

[2]

Context

2.1 Publishing & Technology

We now exist in an environment where technology allows anyone with internet access to become a creator and share their creative works with the world. The same conditions that enable creation at scale also mean that content consumers have more options than ever before in terms of where and how they access content. Attempts to adapt to this new environment, to lesser and greater degrees of success, have already been witnessed in music, film and television, journalism, and the magazine industry—those who have not adapted have perished. On the consumer side, Spotify and Netflix can be held up as two of the most successful examples of adaptation to content abundance. Both offer extensive access to content, as well as value-added features like personalised recommendations, content curation and, significantly, the kind of ease of use that has come to be expected by consumers who are immersed in a digital culture. On the production side, YouTube has benefited from the proliferation of video production and editing technology that allow anyone to produce a short film, music video or tutorial. It is inevitable that the same kind of challenge will be posed to publishing, and industry stakeholders must be prepared to adapt and move forward.

When it comes to book publishing specifically, little has been done to address the larger existential challenge posed by digital disruption. The introduction of the ebook format allowed some benefits of digitally mediated content to reach readers—mainly somewhat reduced costs, wide access to titles and the ability to access multiple books on a single device[1]—but the format is complex to produce, often unattractive[2], and essentially just “print on a screen”, with little effort being made to really advance what is possible with a network-connected digital format, which would come from proper integration with the web[3]. Despite the fact that ebook sales have begun to plateau,

1. *Promoting the Uptake of Ebooks in Higher Education*, report commissioned by JIRC.
2. Bjarnason, B. *The End of Ebook Development*. 26 April 2012.
3. In answering the question "What is an ebook?", ebook expert Baldur Bjarnason and other ebook developers cited many ideal ebook features that are currently limited or non-existent in EPUB and Mobi formats, and the ebook ecosystem as a whole, largely due to commercial pressures. Read the full discussion here.

or even decline[4], major changes continue in parallel industries, indicating that it is likely that more is to come. Even though it is unlikely that print will ever be entirely replaced by digital books any time soon, there is still plenty more that can be done with books in a digital, connected world, both in terms of production and consumption.

One area where benefits such as lower barriers to entry have been felt is with self-publishing. Now that anyone can create an ebook or use a print-on-demand service and put their book on Amazon, anyone can publish a book. The result is an explosion of content. Bowker, the ISBN agency for the United States, reported in 2015 that ISBN registrations for self-published works had grown more than 375% since 2010[5]. Looking to publishing's counterparts in film, music, television, journalism and magazine publishing, it is reasonable to predict that this growth in content from sources outside the realms of traditional publishing will accelerate. It is also more than likely that other players in the publishing industry will recognise the success of self-publishers, and consider what opportunities are presented to them by technology, including how they might leverage those opportunities to build new models of publishing. The key for these players is not necessarily that they are naturally forward thinking or innovative, but that the traditional publishing system is not working for them.

Although this climate has created uncertainty for everyone in the publishing industry, an immense opportunity to redefine the system to work for different stakeholders is presented. Digital disruption may be a threat, but from any threat, the opportunity to innovate emerges. Importantly, aside from being well-resourced (although their market share and profits are already decreasing[6]), the "big five" legacy publishers (Penguin Random House, Simon & Schuster, Hachette, MacMillan and HarperCollins) have no natural authority, right or advantage that says they must be the ones to move the industry forward, nor might they see the need to. This leaves the door open for new players to enter the market to encourage the flourishing of abundant content and to start building the value-added services that can elevate content to new heights.

Looking to the parallels between publishing and other content industries, it is rarely the legacy content producers in those other industries who succeeded in adapting most successfully. Instead, it is consistently digital-first approaches that empower anyone to become a creator, prioritise extensive access to content combined with added features, and achieve the most success in addressing the challenges to the industry. Netflix, Spotify, YouTube, Buzzfeed, Amazon, Snapchat and many more major players were created outside the powerful centre of the industry (or industries) they have disrupted, not by major television networks, record labels or other media organisations. With that

4. Bluestone, M. *AAP StatShot: Publisher Net Revenue from Book Sales Declines 4.1% in First Half of 2015*. 8 October, 2015.
5. *Report from Bowker Shows Continuing Growth in Self-Publishing*. Bowker.com, 7 September, 2016.
6. Anderson, P. *Glimpses of the US Market: Charts from Nielsen's Kempton Mooney*. 20 May, 2016.

in mind, the publishing industry can no longer be conceived of as just the "big five" and other players following the same exclusive, commercial model on a smaller scale. Instead, publishing needs to be conceived as a more expansive set that includes those that may have once been said to be on the fringes, such as self-publishers, and others who have previously not held a clear stake in the publishing industry, such as web publishers and technology companies. All industry stakeholders, not just traditional publishers, are implicated in the challenges facing the industry, they should all be prepared to adapt to the new environment in which they find themselves and, where possible, take the chance to lead the way for the good of the industry as a whole.

2.2 The Rebus Foundation

One of the new players to emerge from the current publishing climate is The Rebus Foundation, The Foundation is a non-profit organisation funded by the Hewlett Foundation. It was founded in direct response to the threats and opportunities presented by digital disruption for books, publishing, and reading, as explored in the previous section. Founders Hugh McGuire[7] and Boris Anthony[8] share a belief that books are central to a flourishing society, and that "while they are no longer alone in our media landscape, [they] maintain their critical place in our culture as the documentation of human knowledge and experience"[9]. McGuire and Anthony also share considerable experience in technology, a vision of the Open Web, and they see a bright future for books in a digital world. With a shared vision of the future of publishing and extensive experience with technology, they have joined forces to create the Rebus Foundation as a way to leverage the power and possibility of digital technologies and the web to build a new future for book production and book consumption.

The Foundation has a clear path to achieve its vision. It plans on creating a series of small pieces of technology that work together without being dependent on one another, which span production, format, distribution, deep reading and collection management. Each piece is intended to be used and adapted for multiple purposes. The planned pieces of technology, each its own project, are:

Rebus Community

The Rebus Community is an online community platform that connects people with the skills needed to complete every task in the publishing process, from creating content

7. Hugh McGuire is the founder of Librivox, an online community that produces public domain audiobooks, iambik, who partner with publishers and authors to produce audiobooks for sale, and Pressbooks, an online book production platform (discussed in section 3.6). He is also the co-author of Book: A Futurist's Manifesto and a leader in envisioning the future of books and the publishing industry.
8. Boris Anthony has been designing, architecting, building on the Web since 1995. Applying strategic design and experience architecture, in recent years he's worked with Nokia, HERE, GlobalVoices, Dopplr and many others.
9. Rebus Foundation Website

right through to checking metadata. By shifting expertise from an opaque, "service" model approach to a collaborative one, the Community disconnects the publishing process from the "publisher", as it is traditionally conceived. At the heart of the platform is a project management tool specifically designed for this new model of publishing, allowing the community around the tool to manage projects themselves. The platform is being launched initially to serve the Open Textbook community, but the model is not necessarily limited to textbooks, and future iterations may include other Open academic publishing, self-publishing collectives and publishing co-operatives. This is outlined in more detail in Section 3.

Rebus Community Press

Based on Pressbooks book production software (see Section 3.6.1), Rebus Community Press is a book production platform that allows users to easily, cheaply and quickly create, format and design their books, producing multiple file formats from a central version of the content created in HTML+CSS. While Pressbooks is still currently a separate entity, the Rebus Foundation is investing in its development, and Rebus Press will one day be available to publishers of all sizes to drastically alter their production processes. This is outlined in more detail in Section 4.

Webbook Format

With the webbook format, The Rebus Foundation is engaged in the W3C[10] process to develop a file format standard, which will allow them and others to build web-based reading and distribution infrastructure. The proposed format comprises three major features; a single URL for a collection of resources (together called a "publication"), a table of contents with a suggested structure and reading order, and a mechanism for files to live in an offline environment and sync with online versions. While much of what is expected to feature in the standard is already possible in native web formats, it has yet to be clearly delineated and defined as a standard for books on the web. A standard approach allows for consistency and reliability, so both human and machine readers know what to expect from a file. This format could significantly improve on the current dominant digital book format: EPUB, the standard for which was developed and is maintained by the International Digital Publishing Forum (IDPF). There are significant drawbacks to EPUBs, particularly in the context of books on the web, as it is not structured to be compatible with web standards in the same way that web pages are, forcing it outside the web environment and limiting its connectivity.

Rebus Directory

The Rebus Directory is a catalogue (or series of catalogues) that will contain a central

10. The W3C (World Wide Web Consortium) is the organisation that governs standards on the web.

collection of texts with comprehensive, reliable metadata, eventually with a focus on books in the webbook format. In future, publishers may be able to create their own catalogues within the system to help them manage their distribution. A major challenge in a system of abundant content is discovery, which in a digital environment is driven by metadata. Like a standard file format, standard metadata makes content effectively accessible and distributable by humans and machines.

Rebus Reader & Rebus Library

Alongside the webbook format development discussed above will come the development a dedicated, web-based reader for books in the standard format. It will offer enhanced features and connect to the Rebus Library, though it will still be possible for a reader to access a webbook file without it. It is likely to be available as an app and browser extension, to automatically activate when a webbook is recognised. The library will offer collection management, with the ability to track, cite, annotate, show connections between books and many other extended uses, leveraging the webbook format and connection to the Rebus Reader. Similar to the relationship between Rebus Press and Pressbooks, some work has already been done towards the design of the library, with Boris Anthony's Libra.re acting as a prototype, developed to manage a personal collection of several hundred ebooks. Although these are distinct "pieces" of the process, the Reader and Library are closely related. Both the Reader and the Library are designed to enable deep reading of digital and web based content, building in touchpoints and visual indicators that are currently lost when moving from print to digital, and which impact on reading comprehension and retention. They will be built with the specific intention to address the current challenges of digital reading, and to improve on what is possible with print, by allowing books the same advantages that other digital content benefits from.

Strung end-to-end, the result is an innovative, expansive, connected, diverse version of a book that, while still recognisable as a set of bounded content, is read, used and experienced in a multitude of ways beyond what is currently possible with print and ebooks. The Rebus product stack is ambitious, but based on considered assessments of the industry as it stands, and on an understanding of what is made possible by web-based technologies. It differs significantly from existing models of production and consumption in that every stage is designed to be web-first, rather than considering the role of web technologies as an afterthought, and the primary goal is creation of content at scale for free and easy distribution, not controlled quantities for sale. Importantly, it also comes from a place of belief in the intrinsic value of books as cultural objects. It is this belief, combined with the opportunity to create new technologies, that will be the pillar of success for the Foundation.

However, change is always met with resistance, and to date, the commercial publishing

industry has demonstrated reluctance to change how they do things. While Hugh McGuire's web-based book production software (Pressbooks) has not broken into the mainstream publishing market, there is an important lesson in its successes thus far; it has gained traction with those with the most invested in working outside industry norms, namely self-publishers, academic authors, and academic institutions looking for alternatives to the traditional academic publishing system. It is this motivation—investment in change, readiness to try something new and a very real need for a new model—that must precede the kind of revolution the Rebus Foundation intends to usher in. There needs to be a "chink in the armour" before something new can break through. The Foundation believes it has found their way in through the Open Textbook movement—a community whose ambitions for changing the way publishing is undertaken align with their own and who share a view of the value of content beyond any monetary value. This symbiotic relationship has allowed the Rebus Foundation to take the first steps towards its vision of the future.

2.3 Open Education & Open Textbooks

2.3.1 Open Education

Open Education is a philosophy founded on the belief that education is fundamentally important to advancing society and that educational systems should be built to provide every person the opportunity to participate[11]. The Open Education movement can trace its roots to David Wiley, an academic at Brigham Young University in the late 1990s. Around that time, projects like the Internet Archive, Wikipedia and Project Gutenberg were promoting the idea that content should be free and accessible to all, and their projects modelling it in practice. In 1998, Wiley released the first open content license in education, inspired by the use of open licenses in the Open Source community to enable members to freely develop and share their work[12]. This was soon followed by the 2001 launch of MIT's OpenCourseWare, which saw the university make the materials for nearly all their courses available online[13]. It was with OpenCourseWare that the Open Education movement truly began, promising the possibility of improved access to education worldwide, with reduced costs and lower barriers to entry. In 15 years, the movement has grown, evolved and expanded beyond OpenCourseWare to include Open Educational Resources (OER), Open Pedagogy and Open Textbooks. Those involved with the movement have consistently advocated for the use of open licenses and technology to help share information and inspire innovative use of

11. SPARC. *Open Education,* 2016.
12. Caswell, Tom, Shelley Henson, Marion Jensen, and David Wiley. "Open Content and Open Educational Resources: Enabling Universal Education." *The International Review of Research in Open and Distributed Learning 9*, no. 1 (2008). doi:10.19173/irrodl.v9i1.469
13. ibid.

resources[14], and continue to innovate around education to ensure the best outcomes for all learners.

2.3.2 Open Textbooks

Textbooks have a distinct role in education, and have become a distinct area of interest for the Open Education movement. Advocates insist textbooks should be released under an open license: free to anyone to read and, just as importantly, free to anyone to adapt and redistribute. Undoubtedly, the biggest driving force behind Open Textbook creation and adoption is the desire to challenge traditional textbook publishers who heavily restrict access to and uses of textbooks, and who have overseen prices for access and use rising at an astronomical rate over the past few decades years. In 2015, NBC reported that textbook prices have risen by 1041% since 1977[15] and costs have risen at a triple the rate of inflation between 2003 and 2013[16]. During roughly the same period, production costs have dropped, particularly with the introduction of digital production and distribution methods, and the cost of recreational books has dropped[17]. While the internet has made the used book market more efficient, leading to publishers having to recoup more costs in the original purchase price of a textbook[18], traditional textbook publishers maintain large profit margins that increased at an average of 2.5% between 2003 and 2012[19], demonstrating that the impact of online resales is perhaps not as significant as claimed, and that rapidly increasing prices are a function of the commercial imperative to increase profits year over year, regardless of the financial and educational impact on students. Legacy commercial publishers have created an industry where a few key players dominate the market, and textbook content is tightly controlled and inaccessible to learners who in post-secondary education are faced with an average cost of $300 per semester for textbooks[20]. Furthermore, for those who do pay, it is often via student loans, contributing to already extensive student debt[21], and many others who choose not to purchase their required textbooks risk seeing their education suffer[22].

Ultimately, many commercial publishers have limited interest in the potential of digital technologies to expand access to content because of the threat it poses to their business models, and some such as Pearson have found ways to use digital content to reinforce their current hold on the market, particularly through the use of access codes that

14. SPARC. Open Education, 2016.
15. Popken, B. *College Textbook Prices Have Risen 1041 Percent since 1977*. NBC News, 6 August 2016.
16. SPARC. *Open Education Fact Sheet*
17. Perry, M. *The new era of the $400 college textbook, which is part of the unsustainable higher education bubble*. AEI-deas, 26 July, 2015.
18. Band, J. *The Changing Textbook Industry*. Disruptive Competition Project, 21 November 2013.
19. Band, J. & Gerafi, J. *Profitability of Copyright Intensive Industries*. Policybandwidth, June 2013.
20. SPIRG. *Covering the Cost: Why We Can No Longer Afford to Ignore Textbook Costs,* February 2016.
21. ibid.
22. Florida Virtual Campus. *2012 Florida Student Textbook Survey*.

lock students into their system and remove any secondary market for content (see Section 4.2 for more on this trend). As discussed, publishers are already challenged by the availability of content in the form of second-hand book sales, and rely entirely on original sales to recoup costs and turn a profit. As such, the ease of copying and distribution of digital materials, is not an appealing prospect. Digital content is inherently easily replicated, widely dispersed and revised by nearly anyone, three things that many publishers have sought to control and limit to "appropriate" channels. As a result, traditional publishers moving towards creating digital content employ strict digital rights management (DRM) systems that ensure that digital content remains as tightly controlled as its print predecessor. This is to the detriment of learners and educators, who are denied the benefits of accessible digital content and the Open Textbook movement seeks to redress that balance. David Wiley, who, as mentioned, has been actively involved in the Open Education movement since its inception, has worked to define the best practices, known as the "5Rs", for open content, which would open up the benefits of free, accessible content to all. These best practices help define the rights in terms of content that the movement believes everyone should have:

1. Retain – the right to make, own, and control copies of the content
2. Reuse – the right to use the content in a wide range of ways (e.g., in a class, in a study group, on a website, in a video)
3. Revise – the right to adapt, adjust, modify, or alter the content itself (e.g., translate the content into another language)
4. Remix – the right to combine the original or revised content with other open content to create something new (e.g., incorporate the content into a mashup)
5. Redistribute – the right to share copies of the original content, your revisions, or your remixes with others (e.g., give a copy of the content to a friend)[23]

As the movement has developed, a system has emerged, with large and small players, non-profit organisations, academic institutions and dedicated individuals all working towards the goal of making Open Textbooks the default model for education. As a result of their work, several significant milestones have been reached. From observing increases in media coverage, the positive responses to conversations experienced by those in the industry and the number of new initiatives launching, there is a sense that the higher education is at a tipping point, where Open Textbooks will soon take off and become mainstream. In September 2016 alone, prominent Open Textbook publisher OpenStax recorded 1.5 million students accessing their books[24] and the governor of Rhode Island announced a US$5 million initiative to fund Open Textbook production and adoption in the state[25]. Leaders like SPARC (the Scholarly Publishing and Academic

23. Wiley, D. *The Access Compromise and the 5th R.* Iterating Towards Openness, 5 March 2014.
24. Boyd, J. *More than 1.5 million students have used OpenStax's free textbooks.* Rice University, 27 September 2016.
25. Anderson, J. *The crazy price of college textbooks is pushing more US universities to adopt an "open-source" solution*. Quartz.com, 27 September 2016.

Resources Coalition) work tirelessly to advocate for Open Textbook adoption, to shift the culture within higher education, and to help people recognise the benefits for both educators and students. Student advocacy has also grown, with #textbookbroke[26] campaigns successfully raising awareness of OER on campuses across Canada and the US, with support from SPARC, BCcampus, and recently US Senator Dick Durbin, the co-sponsor of the "Affordable Textbook Act".[27]

As can be seen from the examples above, great progress has been made with gaining buy-in from students, faculty, institutions and some areas of government. However, a scan of the Open Textbook ecosystem today shows a much larger emphasis on advocacy than production. There are few major Open Textbook publishers, and though the number of textbooks being produced may be growing, the major barriers to adoption remain the lack of resources in a particular subject area, the difficulty of finding those that do exist[28]. It is important to consider that as those involved in higher education begin to support the concept of Open Textbooks, the barriers to wholesale adoption of Open Textbooks become less about a preference for traditionally published textbooks, and more about whether Open Textbooks can meet their needs. Current producers of Open Textbooks have focused on subjects with the highest enrollments—a sensible approach—but soon this will not be sufficient, as faculty in less popular subject areas and at different levels look to adopt Open Textbooks alongside their peers.

What is more, as enthusiasm for Open Textbook adoption grows, so does enthusiasm for creation, as evidenced by Rebus Foundation engagement with advocacy organisations, individual institutions and faculty during the planning process. A growing number of academics want to write Open Textbooks. Professors are asking their post doctoral candidates to create a chapter on their area of research. Institutions are considering how they can start an Open Textbook program and support their faculty to write them[29]. There is an active interest in producing Open Textbooks, and yet no clear model for how to go about doing so. It is this need that the Rebus Foundation seeks to meet with its first two projects; the Rebus Community and the Rebus Press.

26. Largely run on social media and around campuses, #textbookbroke campaigns encourage students to share their stories of how the high cost of textbooks impacts them and their learning. The Twitter hashtag is a great way to see its impact in action.
27. The "Affordable Textbook Act" is a bill introduced to the U.S. Congress in 2015. It seeks to reduce the cost of textbooks and course materials at U.S. higher education institutions through the use of Open Educational Resources.
28. Elaine Allen, I. & Seaman, J. *Opening the Textbook: Educational Resources in U.S. Higher Education, 2015-16*. Babson Survey Research Group, July 2016.
29. This trend has been observed by many working in the Open Textbook area, including the Open Textbook Network. In conversations with the Rebus Foundation team, they have indicated increasing interest from their network members to participate in Open Textbooks creation.

2.3.3 Production Models

Currently, there are several production models in play, some with significant drawbacks. An organisation like Flat World Knowledge, which has published 129 digital first textbooks written by commissioned authors, touts an "extensive collection of peer-reviewed content and open educational resources"[30]. But while content is remixable by professors, students are charged for access and the company is run for profit, which sets them apart from others in the Open Textbook sphere, who are actively trying to reduce the financial burden on students. Even though they are definitively a part of the Open Textbook ecosystem, for-profit publishers are a distinct group of industry players who have more in common with the legacy publishers, building their business model on selling access to content and as a result, they have little motivation in the direction of change or innovation. Their model is what the OER community is seeking to distance themselves from (i.e. commercial sales of content to students) and it cannot be considered truly "Open" without the fundamental principle of free access.

Others follow the traditional publishing model, hiring authors to produce a text, with the authoring, production and review processes taking place in-house, but are grant-funded nonprofits and all content is openly licensed. OpenStax, based at Rice University, employs this model and is a major player in the market, closely aligned with the principles of the Open movement. Since 2012, they have launched 25 high-quality Open Textbooks in a range of popular subject areas. Notably, their textbooks are delivered in formats that are not easily accessible to anyone wanting to revise, remix or reuse the content. These uses are permitted by the license and are technically possible, but they are not well facilitated by the set up, as the organisation's focus is on driving adoptions. The textbooks bear an open license and are available free to students, but they do not entirely fulfil the 5R best practices discussed in above and do not offer many authoring opportunities (which is also desirable for the reasons set out above). As such, they should not be considered the preferred model.

Other models tend to be government or institutionally funded and have a mandate tied to the jurisdiction of the organisation, though the books they create can be used worldwide. BCcampus has emerged as a leader in deploying this model. Funded by the British Columbia Ministry of Advanced Education, they offer grants to authors and have seeded a collection of over 40 new textbooks aimed at BC's highest-enrolled academic subject areas, as well as skills and trades training[31]. Moreover, they have developed resources for authors, adopters, institutions and librarians, and have seen their textbooks adopted around the world[32]. Their contribution and leadership in the Open Textbook arena is commendable and should serve as an example to others. Alone,

30. From the Flat World Knowledge Website
31. BCcampus. Open Textbook Project.
32. BCcampus. Around the World.

however, it would be difficult to scale to meet the coming demand due to their limited focus.

Several themes emerge from this sampling of existing models. Each of the organisations discussed has a limited purview, often focussing on a specific territory or institution and other roles, such as advocacy. They are also all producing textbooks on a limited scale, often in the range of a handful of books a year. Finally, many offer limited paths to authorship by commissioning authors for specific projects, rather than allowing authors to drive projects and welcoming anyone willing to participate and create. While there is immense value in what OpenStax, BCcampus and similar organisations are producing, as well as individual authors publishing alone in whatever way they can, existing models are not designed to produce content at the scale required to meet the imminent demand for Open Textbooks in more subjects, more languages and more countries, nor do they provide a clear path for authors or institutions who are looking to contribute their own content. It is these challenges that the Rebus Foundation seeks to address.

2.3.4 Into the Future

What is clear from the current environment is that the textbook publishing industry is poised for significant changes as new entrants enter the market with viable alternative approached to production. Arguably, this began with the very first Open Textbook ever produced, and will continue until a new equilibrium is reached. The Rebus Foundation aims to be one of these new players, and help build a new system of Open Textbook publishing. What's more, though the cost saving benefits for students in that new system are an easy sell, there are other distinct advantages to going Open. An effective Open Textbook publishing ecosystem could offer radically reduced costs of production, a vastly increased amount of permissively licensed content available with clear, unrestricted paths to authorship for anyone wanting to contribute. This would include marginalised voices and those who require technological support for physical impairments. The tools and resources created would also have a view to the world, enabling those with limited access to technology, working in any language and potentially in environments without formal government or institutional support structures. Finally, the ecosystem would see the production of high quality, digital-first content that can be easily and quickly accessed, remixed and tailored to specific needs and engagement with digital native learners, offering them an experience of a textbook that is consistent with their experiences of other digital content. It is this vision of an inclusive, technology-driven, forward-thinking, adaptive industry that has informed, and will continue to inform, the Rebus Foundation's projects. Not every point listed here is specifically addressed in the first iterations of product design, but all decisions are actively informed by the possibilities of the future, and do not shut off any avenues that are required to realise this vision of the future.

[3]

The Rebus Community

The first Rebus Foundation project underway is the Rebus Community for Open Textbook Creation. The design of the Community is an example of Benkler's commons based system of peer production, whereby a large group of people collaborate to provide "information, knowledge or cultural goods" without relying on traditional market models or hierarchies to coordinate production[1]. The work of these large groups is facilitated by the technical infrastructure of networked digital technologies and the web, and members are generally driven to participate by intrinsic motivations. In the case of the Rebus Community, its platform takes the ease of production offered by digital, web-based technologies and elevates it from an individual pursuit to a collaborative one. Though it is true that an author might now be able to write, produce and publish their work more easily than ever before, there are still significant challenges in doing so which cannot be addressed by basic book production software. To take production to a new level, the Rebus Community has been designed as an online environment that connects a worldwide community of practice that recognises the value of Open content, as well as simple-to-use tools to maximise the benefits of a collaborative, digital-first publishing process. This level of collaborative peer production expands the pool of creators from the limited number that can be employed or commissioned by a traditional publisher to potentially thousands of contributors, allowing the scale of production to increase substantially and create an environment of content abundance.

The focus of the internship I have undertaken with the Rebus Foundation has been working with the other members of the Rebus team on the practical application of these broad concepts, designing and launching the first iteration of the Rebus Community platform. While a sketch of the different "parts" of the platform had been developed by the co-founders prior to securing funding and launching the Rebus Foundation proper, in the past six months the team has worked to flesh out the specifics of those initial ideas,

1. Benkler, Y., and Nissenbaum, H. "Commons-based Peer Production and Virtue." *Journal of Political Philosophy 14*, no. 4 (2006): 394-419. doi:10.1111/j.1467-9760.2006.00235.x.

creating detailed product briefs, deciding on priorities and crafting a launch strategy. This section will detail the results of this process to date, from strategic decisions to product design and the first projects to be shepherded through the creation process.

3.1 The Platform

The core offering of the Rebus Community project is a platform that connects people working on Open Textbooks, and that will enable them to develop a set of best practices for Open Textbook publishing in a digital world. Along with the higher level concept of peer production, the specific implementation of a community-based approach to publishing is informed by successful communities of practice in the Open Source world, mirroring the origins of Open Education as a whole. Community strategist Jono Bacon, who has decades of experience working with Open Source software communities, states that in order to be successful, a community that is collaborating to create new work needs three things to succeed; open communication, open licenses and open tools[2]. It is this environment the Rebus Community platform seeks to replicate. If successful, the scale and ubiquity of peer production seen in Open Source projects like Linux and Ubuntu can be achieved with Open Textbooks.

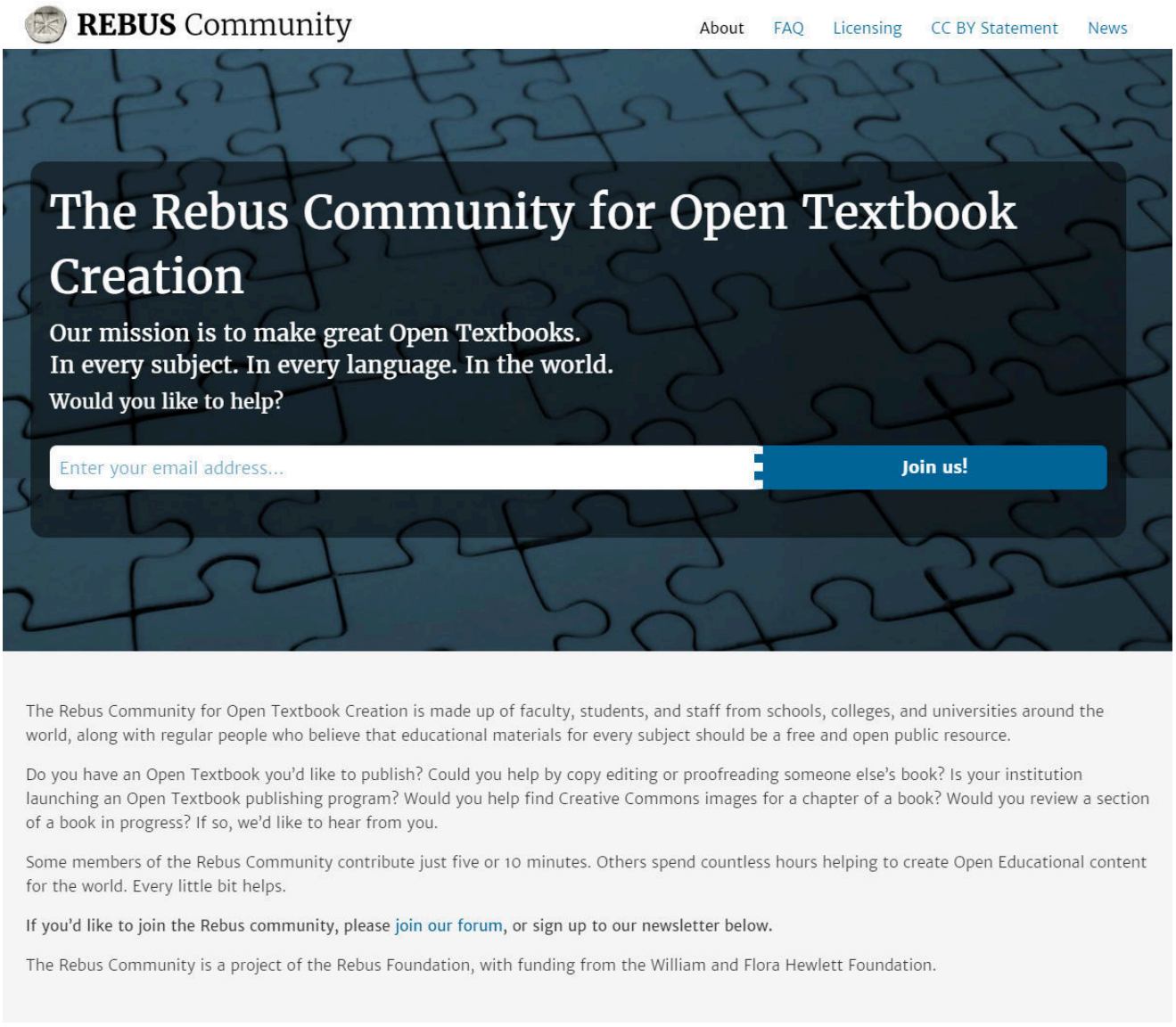
The first two parts of the platform, the forum and the production tool, have been launched at the time of writing, and the project management tool is expected to be available in an early form within another two months. The process to date has been focused on how best to identify and support the existing needs of Open Textbook creators, building pieces of software around the process that will eventually form a comprehensive set of tools and resources. In simple terms, the platform is intended to enable creators to talk about what they're doing, to actually do it, and then to document it so that others can benefit from the collective expertise. With this goal in mind, the platform has been designed to consist of five parts:

1. A static website that states the mission and provides general information about the project.
2. A forum, where community members can communicate and discuss both specific questions and broad concepts within Open Textbook publishing (see Section 3.3).
3. A project management tool that will allow users to track and collaborate on the various tasks involved with the publishing process (see Section 3.5).
4. A book production tool, the Rebus Community Press (see Section 3.6).
5. An evolving set of resources, managed by the community, to help anyone starting their own Open Textbook project or program.

Once all parts of the platform have been launched, there will be several ways for people to engage. Those working with Open Textbooks will be able to look through resources

2. Bacon, Jono. *The Art of Community*. O'Reilly, 2009.

designed by the community related to Open Textbook programs and creation. Those who wish to will be able to sign up for an account that offers them access to a forum, where they can engage in discussion with other community members to expand their knowledge, find inspiration and guidance and contribute to answering others' questions. In the forum they may also find collaborators for their own Open Textbook project or join an existing project in need of their particular skills. Once a participant in a project, they will be assigned preset tasks that form the publishing process and complete them in the book production interface, the Press. As a team coordinator, they will be able to centrally manage team roles and communications, book metadata and task management for each project. Teams will be able to form organically through forum communication and will have their collaborative processes facilitated by simple to use tools, resulting in a productive group of motivated actors sharing their skills with no promise of financial reward.



The Rebus Community homepage

3.2 Objectives

In order to be successful, the Rebus Community must have a clear set of objectives to guide development. These objectives are to:

1. Define, with community input, a clear process and best practices for publication of Open Textbooks.
2. Grow a vibrant global, connected community of collaborators on Open Textbook creation.
3. Make it easy for faculty, staff, students, volunteers, etc., to contribute to the creation of Open Textbooks (their own, or others').
4. Create many new, high-quality Open Textbooks, available for free to anyone, in a range of formats (web, epub, mobi, PDF, and print).

The first objective emerges in response to a need from those wanting to create Open Textbooks but who have no clear path to do so, and will also help to reduce the costs and complexities involved in publishing Open Textbooks. The basic premise is that the publishing process does not innately have to be undertaken by a "publisher" in the traditional sense. Instead, the tasks involved in the process can be managed and completed by a community of people, each contributing what they can, and sharing in the responsibilities of completing the project. However, that concept is predicated on a very general view of how publishing can be done. In order to create a concrete process, those who are doing the work must be the ones to shape the design.

With this in mind, the Rebus Community is enabling the creation of a model of publishing that meets the needs and wants of those involved with Open Textbook publishing, which can then be applied and improved over time as needs change. It is built around the principles of connection and collaboration between members of the Open Textbook community, which includes academics, librarians, OER advocates and many others. This group also includes the Rebus team themselves, who envision a symbiotic relationship with the community, where the expertise they develop is informed by those on the forefront of Open Textbook creation, and those who are creating can draw from the organisation's expertise. Together, the community will be able to define a clear process and a set of best practices for Open Textbook publishing. What is more, the Community platform is dedicated to making every step of the publishing process clear and easy, in such a way that it opens participation to people beyond those with the expertise to write a chapter on, say, the political economy of digital media, or molecular compounds. This includes students, other university staff members and members of the public.

Finally, the very clear objective of the Community project is to make books. Alongside the forum for communication, all members have free access to Rebus Press as a

production tool, and will eventually also be able to use Rebus Projects for project management, following the open source model of providing open tools in combination with open communication. This brings together the conceptual work of redefining the publishing process with the explicit work of making books, allowing each aspect to be informed by the other. This will result in a stronger, more sustainable system, and when participation is at a large scale, that system will produce textbooks in large numbers, contributing to a new era of the industry where content itself is widely and freely available, and the focus can shift to how content is used, rather than sold.

As discussed, the first of the three elements of a successful community is open communication, meaning the Rebus Community must begin with a method of communication for members. To facilitate this, the platform has been designed around a forum, where members can discuss their projects, challenges, ideas and general thoughts around Open Textbooks.

3.3 The Forum

In the initial platform design process, a forum was not recognised as a development priority. It was viewed by the technical team as a "nice to have" rather than an essential part of the product offering, and they instead focused on the project management software (see Section 3.5). But in discussing the details of the project management tool, it became clear that a mechanism for community members to discuss things not directly related to a single project was required, meaning that a place for communication should exist outside of the dedicated project space. As a result, I produced a product brief for a community forum (see Appendix A) and it became the first priority in the platform roll-out. A custom build was considered, but the team eventually settled on deploying an out of the box forum product, NodeBB. This particular option was chosen for its simple navigation and considerable plugin library that allows for customisation, both of which are important as the forum needs to be able to be flexible for all kinds of users.

This flexibility has also been taken into account in designing the initial setup that will be seen by the very first users who join the Community. Several categories have been created and seeded with content in order to give an early structure for community interactions, but this has been done with the understanding that the community itself will influence the forum structure as users' organic interactions evolve. To begin, the broad categories are:

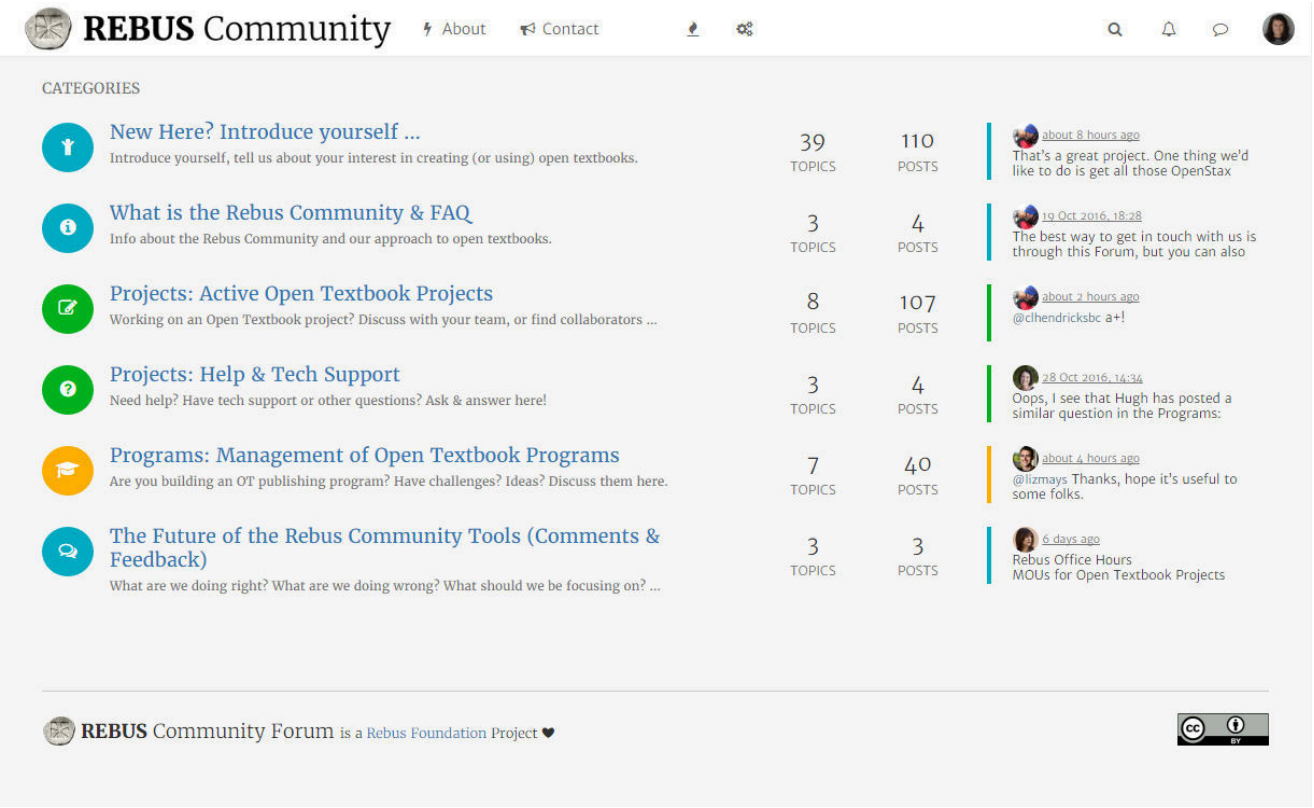
- **New Here? Introduce yourself...**—a place for people to introduce themselves and begin connecting with others.
- **What is the Rebus Community & FAQ**—basic information about the Community and platform

- **Projects: Active Open Textbook Projects**—for project-specific discussions before the project management tool is launched.
- **Project: Help & Tech Support**—this will be the main avenue for requesting technical support for Rebus Press and other kinds of help they need, allowing support to take place in the open, which reduces replication and will create a searchable resource for users.
- **Programs: Management of Open Textbooks**—discussions about adoption, institutional support and other challenges outside of the publishing process.
- **The Future of the Rebus Community Tools (Comments & Feedback)**—an open place for comments and feedback to reach the Rebus team, offering another avenue of communication to inform development.

The forum's development will depend on engagement, and Rebus staff will continue to monitor and consider how best to accommodate and respond to the community's needs. Community management requires building trust and respect, and modelling positive behaviours[3]. This has influenced some of the early content, including a personal introduction from the community manager, emphasising a shared belief in the value of Open content and excitement about the opportunity to collaborate, and broad community guidelines that essentially require members to "be nice". Even knowing that all communities form their own norms and expectations over time, this framing of positive, productive communication is intended to set the right tone and over time, allow a positive model of community engagement to emerge.

Along with open communication, a community of co-creation requires open, permissive licenses to succeed. This ensures that all community members benefit from the work of others[4], and in the context of the Rebus Community, those benefits expand beyond its own community, to the community of Open Textbook creators worldwide. In addition, no deliberation on Open content can neglect a considered approach to licensing. It is a core part of the Open movement, subject to much debate, and complex to communicate. The following section will discuss the Rebus Community's approach to licensing, and the implications it has for the Foundation's goals.

3. ibid.
4. ibid.



The Rebus Community forum homepage

3.4 Licensing Policy

The Rebus Community as an organisation intends to work with members of the community to establish best practices. However, with licensing, we decided to take an opportunity to be a leader, and deliberately guide the licensing conversation towards what they view as the best practice. As a result, Rebus mandates that all books produced through the Rebus Community must be licensed under the Creative Commons Attribution License 4.0 (commonly referred to as CC-BY). This license states that the content under it can be freely shared and adapted so long as the original author is given proper credit. It is the most permissive of the Creative Commons licenses, and only content in the public domain license allows more uses. The team involved in the design of the Rebus Community view mandating CC-BY as an essential part of any new model for Open Textbook publishing, as well as being essential for building a vibrant ecosystem of Open content generally. This was subject much discussion, as licensing is a contentious issue for those creating Open content, and we knew that disallowing the use of non-commercial (NC), share alike (SA) and no derivative (ND) licenses could and probably would cause some potential authors to avoid the Rebus Community. However, we were confident in our reasoning, so created an FAQ that we hope will allay the fears of some coming the the Community, which can be found alongside our licensing policy.

In addition to asserting our stance on licensing for those in the Rebus Community, we also decided to reach out to others in the Open Textbook space and suggest that we release a joint statement on licensing for Open Textbooks. As a result, the Rebus policy and accompanying FAQ were adapted into a statement, co-signed by Mary Burgess (Executive Director, BCcampus), David Ernst (Executive Director, Open Textbook Network), David Wiley (Chief Academic Officer, Lumen Learning) and Rebus' Hugh McGuire. The central argument is that unlike NC or ND licenses, a CC-BY license permits all of the "5R" best practices; the right to Retain, Reuse, Revise, Remix and Redistribute and the statement is a demonstration of a shared vision of what is best for the future of Open Textbooks, as well as an affirmation of Rebus' policy. Looking beyond the creation of Open Textbooks, CC-BY licensed content, in abundance, is critical to enabling the kind of innovation that the Open Education movement is working towards. By licensing the content permissively, access to the content alone is no longer the major value proposition, driving innovation around new approaches to offering value to educators and students.

With open communication and open licenses in place, the next consideration for a successful community is open tools. For the Rebus Community, these tools are a project management tool built around the publishing process and the Rebus Community Press.

3.5 Project Management

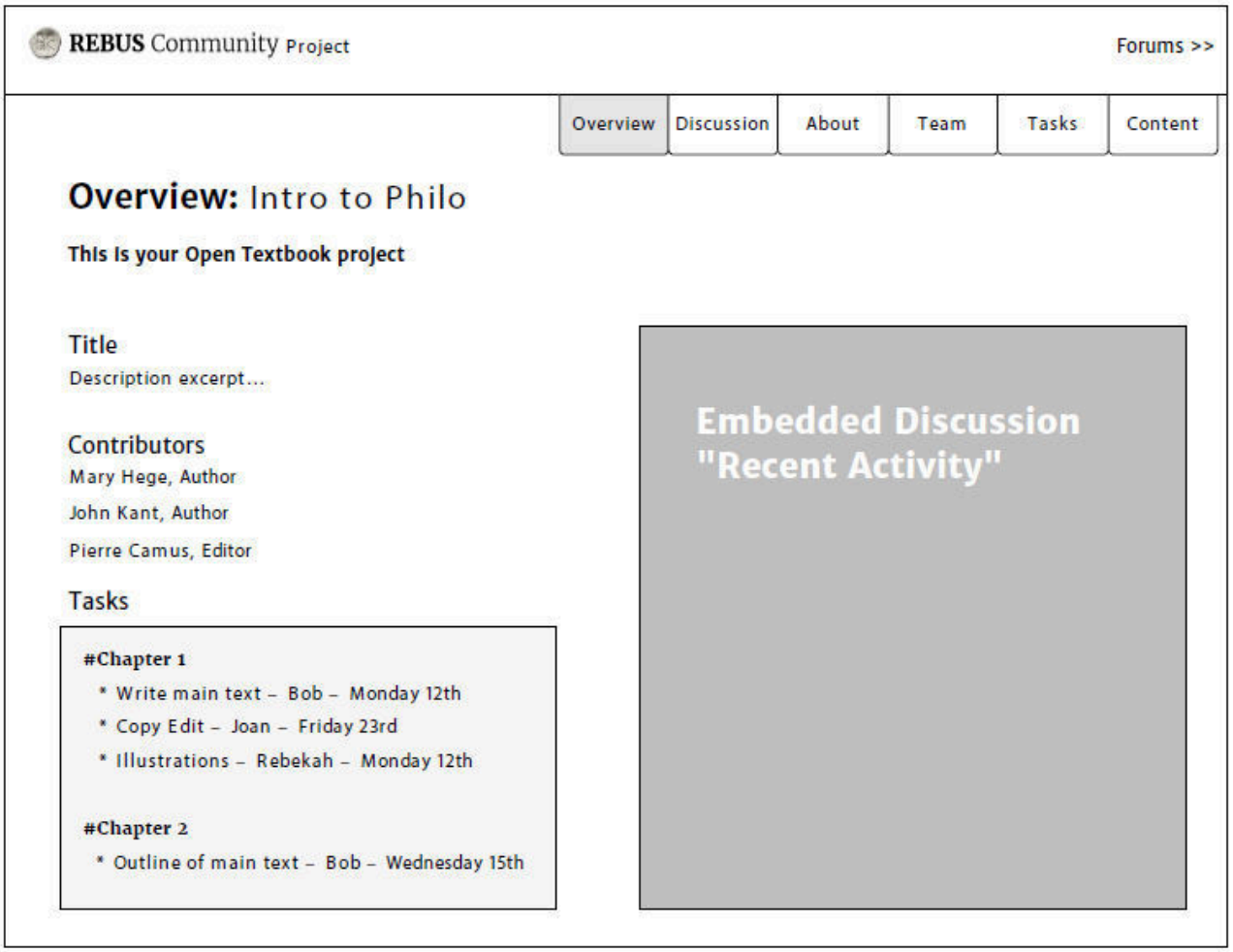
With the forum taking priority, the project management software that was initially the major focus of the Community platform is currently still in development. Although some of the specifics of the software are yet to be determined, the product will be a key component of the Community platform and a powerful tool for creating a new, collaborative, democratic publishing process. The impact will be twofold; it will present tasks in such a way as to demystify the publishing process, and it will make the publishing process on a given textbook accessible to collaborators looking to take part. Participation will be clear and easy, with different levels of commitment welcome, depending on the project needs. This is inspired by the successful LibriVox model, which has seen over 10,000 public domain audiobook projects launched by a community of volunteers. Founded by Hugh McGuire in 2005, Librivox has successfully deployed a community approach to audiobook production, where anyone can contribute to recording chapters for a project, or complete a recording entirely on their own. With the right product design and community management, the Rebus Community should be able to achieve the same success with Open Textbooks, and take a strong step towards reducing the cost of production through an open, online collaborative workforce, much of it expected to be volunteer, and a tool that can be used by anyone launching an Open Textbook project.

The development process is actively being driven by the first projects to join the

Community (see Section 3.7), with their progress being tracked and immediate needs prioritised in the features list. To date, the initial framework for the tool include:

- Clearly displayed book metadata
- Table of contents
- A list of users, with expertise and project roles indicated
- A project-specific discussion board
- Defined tasks that can be assigned and tracked (e.g. chapter authoring, copy editing, image sourcing, formatting)

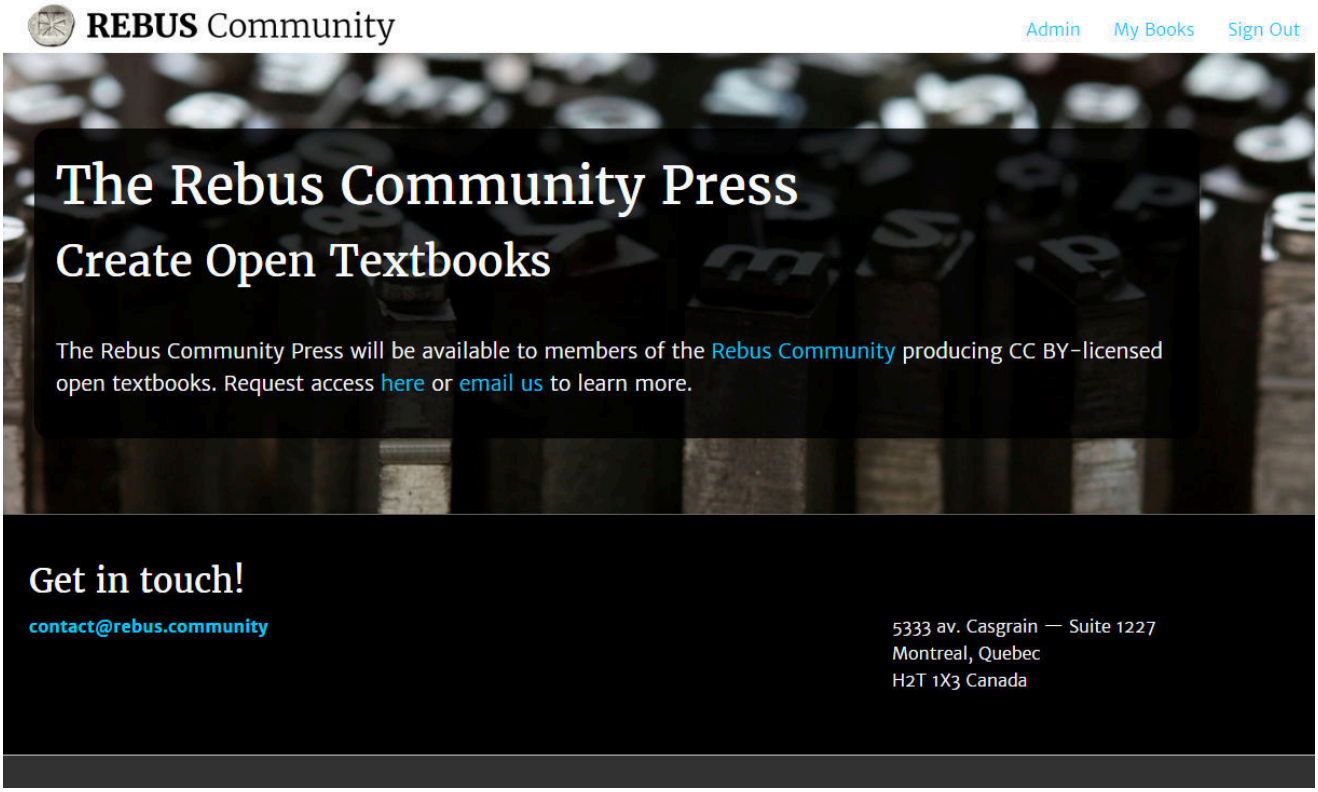
Early versions of these features can be seen in a forum project page and other necessary features and a definitive list of tasks will emerge from interactions with community members and the progression of the pilot projects.



Mock-up of a project overview page in the project management tool

3.6 The Press

Of course, to fulfill their goals, every member of the Rebus Community will need to have access to book production tools, which are provided through the Rebus Community Press[5]. The Press is dedicated exclusively to use by members of the Community, and offers a simple but powerful tool for producing their textbooks in a range of formats. The Press is powered by Pressbooks, an open source book production software.



The Rebus Community Press homepage

3.6.1 Powered by Pressbooks

Pressbooks provides book production software to individual users (on Pressbooks.com) and to institutional users through private networks. Pressbooks offers users an online book production tool, built on WordPress, that uses a familiar blogging format and HTML+CSS structure that can then be converted to professional looking ebooks, print-ready PDFs and webbooks. The software eliminates the need for traditional book design software, as well as complicated ebook conversion, meaning that using Pressbooks can radically reduce the cost of production for publishers, small and large. Traction has been gained with three audiences—self-publishers, academic presses and non-

5. The Rebus Community Press name is intended to allude to a printing press, not a publishing house Press as might be expected. The name is meant to represent the new kind of production it enables, that will hopefully have an enduring impact on book production conventions.

traditional publishers at academic institutions —that have different requirements and processes than traditional trade publishers, part of which is the need for reduced costs and complexity of production. There is also arguably slightly less importance placed on book design with these audiences. This is not to say that Pressbooks books are not well designed (they are), but the software does not allow for the unlimited control and variation offered by a program such as InDesign[6]. Instead, users can choose from a selection of around 50 customizable themes, each designed to suit different styles and genres, which can then be further modified by accessing the CSS stylesheets to make more complex changes. It removes much of the guesswork for those unfamiliar with book design conventions, removes the necessity to develop the expertise required with a program like InDesign, and considerably speeds up the process.

In offering this service to the Rebus Community, the Foundation ensures that those creators benefit from the speed and low cost of web-first production and content management[7]. Many content industries are faced with this shift in light of the digital revolution, moving beyond current digital production options to those that are web-native, enabling the innate agility, connectivity and customization that web-based technologies offer in the book production sphere. Users benefit from the same advantages of other web tools they have come to accept as standard; cloud storage, access from any internet connected device, simplified version control, shared user access to central copies and opportunities to customise through accessible CSS and plugins. What is more, this method of production is specifically designed to interact with other digital formats, including importing Microsoft Word and WordPress XML files and exporting ebooks, PDF and XHTML. This helps Pressbooks overcome a significant limitation of many of these formats—particularly PDF, EPUB, Word and Adobe design formats—which are not easily integrated with other systems. This limitation is most often informed by commercial imperatives rather than a user-centric approach, and built into the design of the programs. However, increasingly, as the web informs user expectations around access, ease of use and integration, these formats must no longer be viewed as the standard for production and content management. While perhaps appropriate for specific uses, it is no longer reasonable to view them as central to the production process when an HTML+CSS based approach can offer many of the benefits of all of them, without the limitations.

Pressbooks also serves as a content management system (CMS), allowing centralised, collaborative creation and and modification of digital content. It combines the power of a web-based CMS with a not only a (book-like) web output, but several other non-

6. Importantly, any limits in book design are not inherent to the system, and are more a question of limited development resources. Any institutional user could employ or commission a CSS developer to create a custom theme (or themes), and contributions to development, either in the form of funding or expertise, are welcome, and could considerably improve what is possible with the system.
7. Maxwell, J. and Fraser, K. "Traversing The Book of Mpub: an Agile, Web-first Publishing Model." *The Journal of Electronic Publishing 13*, issue 3.

web based formats for different purposes. This unique combination has the potential to move digital book production into the next major phase of activity [8] and is indispensable to the Rebus vision of a new, dynamic digital publishing process, resulting in books in a standard, web-native format.

3.6.2 Connections with the Rebus Community

The Rebus Community Press is considered an integral part of the Community platform. More than just being accessible to members of the Rebus Community, the Press will be integrated with the other Community tools. In particular, it will be integrated with the project management software to allow seamless communication between the two. Actions may be triggered in either interface and appear in the other. For example, when a new book project is created in the Community, a corresponding book shell may be created automatically in the Press and vice versa. These connections are consistent with the expectations of users who are familiar with integrated approaches like the Google suite of products and even connections between social media platforms. The seamless transition between platforms is essential to offer the best experience possible to users, and maximise ease of production. In addition to the products speaking to each other, users will be able to create a single user account that can be used across several different applications. This means that instead of requiring one login for the Press, another for the forum and yet another for the projects tool, accounts will be managed centrally. However, while it is an integral part of the Community platform, it will not always be the only production option available to community members. For the time being it will be the only production tool connected to the Community, but considering the Rebus principles of openness and accessibility, it has never been the intention to restrict Community users to Rebus Press.

3.7 The Pilot

Pilots offer an opportunity to test hypotheses, gather information, understand potential impacts for users, build buy-in and lower the risk of failure[9], all of which are paramount for an innovative (and as such somewhat high risk) project with limited funding, such as the Rebus Community. What is more, just as the Community is dedicated to creating a collaborative model of Open Textbook publishing, creating the Community itself is also a collaborative process. The design so far has been informed by conversations with those already working in the Open Textbook industry, as well as the experiences of many Open Textbook creators using Pressbooks for production (see section 4.1). However, there remain many unanswered questions. To address this, Rebus decided to launch the Community with a pilot.

8. ibid.
9. DeLayne Stroud, J. *To Pilot or Not To Pilot*. SixSigma.

The planning process around the pilot has seen the most changes throughout the months of pre-launch planning. Initially, it was expected that it would be limited, accepting only a small number of participants from a handful of institutions with whom we had existing contacts through networks like the Open Textbook Network, BCcampus and OpenOregon. A comprehensive process was designed to manage these participants, clearly setting out expectations and onboarding them through a series of communications. It was expected that through one-on-one interviews, surveys, regular web meetings and the forum, this limited group of participants would provide the insights needed to guide the development of the project management tool, and begin to identify areas of need that the Rebus Community could address. This approach relied on the network connections fostered by McGuire through Pressbooks' popularity with Open Textbook creators, and the commitment of their members. However, as the forum was being prepared for launch, a technical difficulty arose around being able to limit who could sign up to the forum, which prompted some reflection on the merits of a limited pilot, considering that the success of the Community to enable people to find collaborators relies on large numbers of members, which would take time to build. As a result, the pilot was heavily revised.

In its new iteration, the Community platform is open to anyone who would like to join, but in order to ensure the kind of detailed insight into the process that is required to guide development, the Rebus team have committed to a shepherding 10 key projects through the publication process, offering a far greater level of support and engagement than will be offered to projects in the future. The projects are being pursued according to three criteria; an interesting topic or approach that will excite anyone hearing about it, an engaged lead editor or author who is committed to Open Education and trying new approaches, and an agreement to publish under a CC-BY license. Less concretely, Rebus is also looking for projects with different needs and that are in different stages of the process, so that they offer a wide range of case studies in how the Rebus model can offer value. Four such projects have been confirmed so far:

Introduction to Philosophy: Christina Hendricks of the University of British Columbia is a Professor of Teaching in the Philosophy department and an Open Education advocate. She has been looking to create an Open Introduction of Philosophy for some time, but does not have the time to commit to managing the project. With Rebus staff as project managers, the project has launched, with a group of around 20 international contributors volunteering so far. The table of contents is in the process of being refined and the book is expected to be completed in September 2017.

The Open Anthology of Earlier American Literature: Professor Robin DeRosa of Plymouth State University is well-known for her approach to Open pedagogy and practice. She began this anthology with her students in Early American Studies, but has since changed departments and no long has the capacity to see the project through to

completion. Instead, she has offered to help find a new lead editor, who will then work with Rebus staff to expand the anthology to include more texts and eventually serve as a competitor to the well-known Norton, Heath and Bedford anthologies. This particular approach of creating an Open anthology of texts in the public domain has the potential to be applied in other subject areas.

History of Science and Technology: Led by Danielle Skjelver of the Universities of Maryland and North Dakota, she and a team of editors have developed the project scope and table of contents, and begun to solicit chapter contributions. Rebus will be helping to expand that group of contributors and guide them through the rest of the publishing process.

Global Regions (Cultural Geography): This book was initially under contract with Oxford University Press, but they terminated the agreement. With the content already completed, the lead author, John Agnew of UCLA, and his co-editor Kris Olds of the University of Wisconsin decided to release the book as an Open Textbook instead. Rebus will be helping to develop and manage an appropriate reviewing process, support the formatting of the manuscript as a web-based book and encouraging adoptions.

Feedback on the Rebus tools, resources and processes by engaging directly in these projects, as well as through surveys, forum participation and monthly webinar drop-in sessions as the number of Community members grows. Guiding the collection of feedback are the following questions:

1. What are the specific tasks involved in creating an Open Textbook?
2. How can we build a model where volunteers will contribute time and energy to those tasks?
3. What are the major challenges that arise during that process?
4. What smaller challenges or inefficiencies arise during the process?
5. How might those challenges be solved by a community of practice?
6. How might those challenges be solved by a technological solution?

As discussed in section 3.5, the answers to these questions are already informing the design of the product management software component of the platform, and they will also drive the focus of the community management strategy. A core guiding principle of the process so far has been responsiveness and the ability to pivot in response to feedback. That approach has been borrowed from lean startup strategies, and is indispensable for a project predicated on collaborative development.

[4]

Implications

Inevitably, with big changes come big questions. If the Rebus model is successful, the publishing industry, for textbooks, other academic content and ultimately all kinds of books, will find itself in uncharted territory. Acknowledging that any grand proclamations can only be considered speculation, there are still some lines of reasoning that indicate what the future, or at least a future could look like.

4.1 What is the business model moving forward?

The Foundation is a non-profit organisation and has been able to launch the projects discussed in this report thanks to a US$500,000 grant from the Hewlett Foundation. Other grants are being pursued in relation to other projects, including the Shuttleworth Foundation, and the Mellon Foundation for the webbook format, reader and library. Long term, once the tools and services have been developed, the creation and distribution of Open content will need to be supported by reliable sources of revenue in order to be sustainable but, at this stage, the exact business model remains uncertain. It must be acknowledged that this is the biggest challenge facing the Foundation's proposed publishing model. The Foundation's ethos begins with the premise that educational content has value as a public good independent of its value as a commercial product, which conflicts with the current dominant paradigm. However, the Foundation's position is that there are other people, organisations and state actors who recognise that same public value, who are invested in the same outcomes in education, and as such, will support the Foundation's work and Open Textbooks generally going forward. While educational content has not traditionally be considered a public good, education has been, as demonstrated by publicly funded education systems. While it may be some time before this approach becomes mainstream, the Foundation's current funding allows it an opportunity to demonstrate the value of what it does, and there are several avenues to pursue that should allow the value of the work being done to become evident to others.

In the short term, relying on grant funding for the development phase allows for

considerable flexibility, responsiveness and the freedom to concentrate on product development without any commercial pressures. The non-profit funding model with a start-up grant allows the direction of development to be guided by the needs of all users invested in the shift towards Open, abundant content, not just those who will be in a position to pay for the added services. This ensures an egalitarian approach and the freedom to remain committed to the social justice mission of Open Education. Another advantage is that this model allows for some measure of uncertainty around which services can successfully be monetised in future. Given that this model is untested for Open Textbooks, the Foundation can only work on "hunches," and grant-funding allows areas of potential monetisation to emerge from development, rather than dictating it. The Foundation also anticipates the possibility of revenue streams from sources such as premium services to libraries, institutionally branded and integrated instances of Rebus Press, and other paid services related to the personal library. These streams are consistent with the model of services around easily accessible, abundant content can support the creation and distribution of the content itself.

It is also likely that in the educational and scholarly space, there will be opportunities for funding to be sourced from institutions, who already invest in publishing efforts by and for their stakeholders. Rebus foresees some funding will be sourced through library consortia and other institutional avenues as they move away from purchasing access to content from traditional publishers. A similar approach is currently being pursued by proponents of Open Access publishing, where there are efforts to shift the money currently paid by libraries for journal subscriptions towards production and other publishing costs, of which Open Textbooks could form a part. The Rebus Foundation team has also discussed the possibility of administering a funding pool for Open Textbook creators, sourced from governments or Foundations like Hewlett and the Laura and John Arnold Foundation, which would allow some funding to be allocated to supporting the Rebus Community on a per-project basis. What emerges from this survey of potential revenue streams is that the Rebus Foundation will likely end up employing a combination of several different lines of financial support to form a hybrid business model, and it will continue to consider ways in which it can support the long term success of the system it is aiming to build. This allows for flexibility, and the engagement and support of non-commercial stakeholders, and in the long run will hopefully allow a new ecosystem to emerge.

4.2 What does this mean for existing textbook publishers?

If the Rebus Community, and the Open Textbook movement at large, are successful in their shared ambition, large, traditional textbook publishers could eventually have their current business models rendered obsolete. Those publishers' current business models are mostly reliant on selling access to content, to which the introduction of high quality,

free content into the market at scale is a threat. The Open model has the potential to become the most viable alternative for all those in the industry, but, admittedly, it will not happen quickly. Already, the response from traditional publishers to the looming challenge to their dominance has inspired a public relations response, challenging often cited textbook cost metrics with statistics showing a slight decrease in costs to students[1] and citing the risks to students of a "radical new type of instruction"[2]. They have also been working to create new revenue streams for themselves, by providing extra services to educators and in a concession to technological progress, which will likely make any shift towards Open content being the default even more drawn out. The strongest indication of this change is seen with many traditional publishers now offering improved digital textbooks and teaching resources, requiring a single-use, student specific access code.

A recent study from the Student Public Research Interest Groups (PIRGs) analysed the access code trend and found that their use is growing, with an average of 32% of courses in the US requiring them at an average cost around $100[3]. Leaving aside any question about the quality of these resources, this approach has the very intentional consequence of creating a new way for publishers to charge educators and students for access to content. Moreover, it actively shuts off previous alternatives to accessing educational content, such as second hand book sales, use of library course reserves or sharing with friends, increasing the financial burden on students yet again. In short, when access codes are used to restrict access to textbook content and tests and assignments, students ability to opt-out is eliminated[4]. It is more than likely that this approach will continue as traditional publishers close ranks. This demonstrates some level of adaptability in the existing system, but ultimately, the approach relies on a limited access paradigm, in a world that continues to move towards one of content abundance. In the end, the Rebus Foundation believes, such efforts can be undermined by moving towards an Open-first system.

It is also interesting to note that the market includes many smaller textbooks publishers, including associations and university presses. While it is the anti-competitive oligopoly of legacy textbook publishers that has ushered in the biggest issues with textbooks today, the "long tail"[5] deserves consideration as well. Textbook sales are an important revenue stream for these organisations and they will be just as, if not more, severely impacted by the shift to Open as the default. However, this presents an interesting opportunity. In the same way that many subscription journals have been convinced to

1. Association of American Publishers. *Surveys Reveal College Students Spent an Average of $600 on Textbooks for 2015 - 2016 Academic Year*. Business Wire, 10 August 2016. Business Wire, 10 August 2016.
2. Robbins, J. & Sullivan, J. *Our view: Openly licensed educational resources pose a threat to teachers*. Deseret News, 8 August 2016.
3. SPIRG. *Access Denied*, September 2016.
4. ibid.
5. Anderson, C. *The Long Tail*. WIRED, 1 October, 2004.

transition to Open Access[6], so too could smaller textbook publishers (particularly those with non-profit mandates) transition to an Open Textbook model. It is beyond the scope of this report to consider all the challenges associated with this kind of change, but a tool like Rebus Press could already go a long way to reducing the cost of production, thus minimising the impact of the lost revenue stream.

4.3 Does this make Rebus a publisher?

The Rebus Foundation, Community and Press are publishers, but not publishers in the way that we currently understand the term. While they provide tools and platforms to produce content, they do not perform the tasks traditionally involved in publishing: acquisitions, editing, production, distribution or marketing. By only providing the scaffolding and tools for publishing, they have more in common with different stakeholders in the publishing industry. For example, Rebus is part production software provider (just as Adobe provides InDesign), and part distributor, collecting books from various sources together to make accessing them easier (much as Raincoast Books does). It is part community builder (similar to GoodReads), part technology developer (like W3C or the IDPF), and part service provider (like BookNet Canada). Given the scope of what Rebus intends to achieve in the publishing industry — drastically, radically changing the publishing process — it is normal to want to conceive of them as a publisher. And yet, Rebus performs very few of the tasks associated with traditional publishers. Rebus does not commission, acquire, edit, format, design, print, market or sell books and as such, it is not a publisher.

On the other hand, however, there is an argument to be made that Rebus is an early example of the publisher of the future. That kind of publisher may never have been seen before, but it could come to be the generally accepted understanding of what a publisher is, and what a publisher does: bringing together a community of authors, editors and other skilled participants to work collaboratively to develop books, using a system like Rebus Press to develop digital-first content that can be accessed and managed by a web-native reader and library, aiding deep reading in a digital context. This idea could be countered by the fact that the Rebus Foundation is not setting out to do this, with the true emphasis on creating the tools that others can use to be this new kind of publisher. In that sense, Rebus would be considered a technology provider, but the reality is that by launching its products using the Open Textbook industry as a very real test case, all intentions aside, it is acting as a model of its own vision of the future. If successful, it could one day become a model for many more in the publishing industry, and beyond.

6. Solomon, D., Laakso, M. and Björk, B-C. *Converting Scholarly Journals to Open Access: A Review of Approaches and Experiences*. August 2016.

[5]

Conclusions

Ultimately, when it comes to textbook publishing, the consequences of a vibrant community of practice around Open Textbooks will result in a successful scaling of Open Textbook production that shifts the industry from content scarcity to content abundance, and traditional textbook publishers will find it increasingly difficult to extract monetary value from content alone. As a result, the emphasis will have to shift from providing content alone, to providing added value “atop” the content, which will require innovation and imagination, and will hopefully lead to an even bigger revolution in education. When the content is free and available to everyone, it will be teaching and learning methods that truly define education. And, fortunately, there is nothing that dictates that it must be for-profit companies who lead this innovation. With a vibrant Open Textbook community comes many stakeholders, from funders to educators to digital service providers, who will be ideally positioned to extend their work into building new services and experiences that utilise Open educational content of all types to improve educational outcomes. Some of these will certainly be paid services, but the cultural change that will come with Open content will hopefully help to keep the charges reasonable and, significantly, the content itself (the most important element) will remain freely accessible to anyone and everyone who wishes to use it. There is a risk of creating a new kind of inequality by excluding learners from this new layer of education, but so long as the content remains Retainable, Reusable, Revisable, Remixable and Redistributable, there will always be an opportunity for those who believe in the principles of access to education to develop affordable or free options that work for all learners.

This vision of the future is admittedly still a long way off, but the foundations being laid in the Rebus Community are a necessary part of its realisation and the fulfilment of the possibilities of the Open approach. To date, the Rebus Community design process has begun to detail a simple, specific set of tools and processes that can support collaborative publishing, taking the abstract ideas of collaborative publishing and turning them into a concrete plan of action. The Foundation has also put

considerable thought into the needs of the people who will be using the tools, including needs that extend beyond software, and has implemented a pilot strategy to gather the insights they need to progress in a focused way that will best serve the community, mitigating the risk of launching a product that does not meet the needs of its users. The immediate challenge moving forward, however, is that the Foundation is only now venturing into the territory of turning thoughts and hunches into practice. The first two pieces of the platform that have launched, the forum and the press, were pre-existing tools adapted to a purpose, but the project management tool is a custom built piece of software, which comes with higher risks. The first active projects are the first real test of the Rebus concept. It must also be considered that the Foundation has set itself an ambitious set tasks, as alongside this first foray of putting theory into practice is the broader Rebus model of publishing. The webbook format, Directory, Reader and Library all enhance the Community offering, but do draw resources from its development, which will need to be carefully managed. The promise of further grant funding will mitigate this somewhat, and the Rebus team is confident that their "big picture" approach will benefit the development of each piece of the product stack, as the connections between them are always top of mind.

Finally, what can also be considered is that if the Rebus proves successful, there may be implications beyond just textbooks. For the publishing industry at large, the Rebus Foundation projects hint at what publishing might one day become. As discussed in the previous section, a model that sees a single organisation bring together different services for a community of people to collectively perform the publishing process could become the new concept of what constitutes a publisher. However, a more likely scenario is that the Rebus model will become one among many. The publishing industry does not just refer to the big five publishers, and has always included small and medium players, as well as many other varied stakeholders. As the possibilities opened up by technology have expanded, so too does the industry as a whole come to cover a whole range of different players, each with the opportunity to create a new way of publishing.

Significantly, it will be those with the most to gain from disrupting the current system who usher in change. Similar tensions that have created the demand for Open Textbooks are happening with other forms of academic publishing, and Open Monographs in particular could benefit from a system devoted to long-form text production, and they are likely to be a future area of interest for the Rebus Foundation. Self-publishers will likely continue to lead the industry their readiness to adapt to new approaches, and "traditional" authors may continue to transition into the self-publishing realm. Small publishers in Canada, whose survival is reliant on grants, could form collectives and share resources, and others still will have a new way to enter the market. Finally, institutions, from universities to government agencies, non-profit

organisations, NGOs and even commercial businesses could, in a culture of Open, accessible content, share the value of their institutional knowledge with the world through simple publishing practices. While they have less investment in changing the status quo, many would surely take an opportunity to share the value they hold when the barriers to doing so are lowered.

Looking ahead even further, where the real and substantive change will occur is when the shift in book production has achieved what it needs to in order to tip the industry into content abundance, and new forms of consumption can emerge. Once that point is reached, it is exciting to imagine what innovations might arise to make use of content, providing new experiences and value for consumers and creators. The Rebus Foundation has already begun considering the consumption aspect of the model it is creating, with early conceptual designs of the Rebus Reader and Library thinking carefully about the value of reading and how to deliver that value for readers in a digital environment. These new possibilities will also be informed by developments in data analysis and machine learning, already driving development in other content industries, the influence of which is just beginning to be felt. It is difficult to imagine exactly what form the future of book consumption may take, but it is the promise of what could be that drives the pursuit of Open, abundant content production, on which that future relies.

The significance of the possibilities discussed in this report is considerable. Throughout more than 500 years of publishing history, the fundamental premise of the industry has always been to sell access to content. The impact of digital technologies and the internet on publishing is arguably the biggest provocation it has ever faced, as it poses a direct challenge to that central premise. However, the reasons publishing has survived 500 years and remains recognisable from its origins is because of the immense value it offers, and the role it plays in society. Knowledge, in the form of stories and information, has been passed down through generations in books, allowing each new age to build upon the experiences and lessons of their predecessors and to share in the common human experience. While knowledge and information may be changing in the digital age, books and publishing still have a place as the building blocks of society, and the opportunity presented is one to resolve the tension between intrinsic and economic values that has always been at the heart of what publishers do. The publishing industry must meet the challenge, and knowing the importance its work, work hard to ensure that books not only survive, but thrive in a new era of content. The Rebus Foundation is trying to do just this. In the grand scheme of things, it is starting small with the Rebus Community, but it it will take small, deliberate, considered steps to move forward in the right direction. It is these small steps that will begin to shape the next 500 years of publishing.

Appendix A - Forum Product Brief

Product Feature Brief: Rebus.Community Message Board

Problem statement (what is this solving?)

The rebus.community site needs a place where topic-based threaded discussions can take place, to serve as a community hub and communication tool for users, both to speak to each other and to Rebus staff.

We call this “the Rebus.Community Forum.”

By connecting users and staff, the forum will serve as a channel to develop community engagement, offer support to users from both peers and staff, seed the collaborative development of documentation/resources and establish the ‘best practices’ in OER. It will be a key communication channel for both Rebus staff and the community.

Unlike the project/book specific communications, this will be a place to ask general questions and post requests which will likely include:

- Technical questions that are currently handled by support (rationale: this process should be moved to a public platform to model openness, foster peer to peer support, frame Rebus as a catalyst not a service provider and reduce replication of efforts as similar questions are asked by different people)
- Requests for guidance getting started with Rebus
- Advice on practical tasks like sourcing images/licenses/covers/formats/distribution etc.
- Advice on explaining/advocating for OER in your institution etc.
- Users sharing solutions for anyone who runs into the same problem
- Input on broad conceptual questions about OER
- Discussion about OER best practices

See http://www.princexml.com/forum/ as an example, also StackExchange, Reddit etc.

Proposed Solution (how is this solving that?)

MUST

- Enable question/answer exchanges
- Enable in-depth and long-running discussions (maybe options to pin?)
- Double as a support resource by recording exchanges for future use (easily searchable, limited duplication)

SHOULD

- Allow 'best' answers to surface
- Have clear categories/filing system

CAN

- Have a built-in incentive mechanism to reward valuable contributors
- Allow discussions to feed into resource pages
- Allow discussions to feed into book projects (to create guides)

Impact (what change is this effecting in the world?)

The message board will be central to building the collegiate spirit of the Rebus Open Textbook community. With a robust community engaging on the full gamut of issues relating to OER, what will emerge is an engaged community of practice who collectively set the standard of how to do Open Textbooks in the best possible way.

Business (how does this survive & thrive?)

- All Rebus users will have automatic access and be directed there for support and discussion
- Community guidelines and staff will manage and model behaviour, to foster healthy interactions

Innovation (how is this unique/different from others?)

- By positioning Rebus as a catalyst instead of a service provider who is the final word/ the expert in the area, we enable the people involved in the processes to develop resources that address their specific needs.
- It models Open practices to users – our process around support and development of resources shouldn't be opaque when we are advocating Openness.

Marketing (how will this enter and live in the market?)

This will be one of the very first pieces of rebus.community and users will be directed to it as soon as able, with onboarding documentation explaining function. It will be a key part of the rebus.community site and actively promoted as a primary support and discussion channel.

Measure (how will we know this is working?)

- Number of active users
- Number of posts per day/week/month
- Average number of responses per post
- Emergence of answers and consensus on issues that can be converted to resource pages

Next steps

- Make it? Easy, right?

Bibliography

Anderson, C. *The Long Tail*. WIRED, 1 October, 2004.

Anderson, J. *The crazy price of college textbooks is pushing more US universities to adopt an "open-source" solution*. Quartz.com, 27 September 2016.

Anderson, P. *Glimpses of the US Market: Charts from Nielsen's Kempton Mooney*. 20 May, 2016.

Association of American Publishers. *Surveys Reveal College Students Spent an Average of $600 on Textbooks for 2015 – 2016 Academic Year*. Business Wire, 10 August 2016.

Bacon, Jono. *The Art of Community*. O'Reilly, 2009.

Band, J. *The Changing Textbook Industry*. Disruptive Competition Project, 21 November 2013.

Band, J. & Gerafi, J. *Profitability of Copyright Intensive Industries*. Policybandwidth, June 2013.

Benkler, Y. *The Wealth of Networks: How Social Production Transforms Markets and Freedom*. New Haven: Yale University Press, 2006.

Benkler, Y., and Nissenbaum, H. "Commons-based Peer Production and Virtue." *Journal of Political Philosophy 14*, no. 4 (2006): 394-419. doi:10.1111/j.1467-9760.2006.00235.x.

Bluestone, M. *AAP StatShot: Publisher Net Revenue from Book Sales Declines 4.1% in First Half of 2015*. 8 October, 2015.

Bjarnason, B. *The End of Ebook Development*. 26 April 2012.

Bjarnason, B. *What is an ebook?* 21 December 2010.

Boyd, J. *More than 1.5 million students have used OpenStax's free textbooks*. Rice University, 27 September 2016.

Caswell, Tom, Shelley Henson, Marion Jensen, and David Wiley. "Open Content and Open Educational Resources: Enabling Universal Education." *The International Review of Research in Open and Distributed Learning 9,* no. 1 (2008). doi:10.19173/irrodl.v9i1.469

DeLayne Stroud, J. *To Pilot or Not To Pilot*. SixSigma.

Elaine Allen, I. & Seaman, J. *Opening the Textbook: Educational Resources in U.S. Higher Education, 2015-16*. Babson Survey Research Group, July 2016.

Florida Virtual Campus. *2012 Florida Student Textbook Survey*.

JIRC. *Promoting the Uptake of Ebooks in Higher Education*. JIRC, August 2003.

Perry, M. *The new era of the $400 college textbook, which is part of the unsustainable higher education bubble*. AEIdeas, 26 July, 2015.

Popken, B. *College Textbook Prices Have Risen 1041 Percent since 1977*. NBC News, 6 August 2016.

Report from Bowker Shows Continuing Growth in Self-Publishing. Bowker.com, 7 September, 2016.

Robbins, J. & Sullivan, J. *Our view: Openly licensed educational resources pose a threat to teachers*. Deseret News, 8 August 2016.

Solomon, D., Laakso, M. and Björk, B-C. *Converting Scholarly Journals to Open Access: A Review of Approaches and Experiences*. August 2016.

SPARC. *Open Education*, 2016.

SPIRG. *Access Denied*, September 2016.

SPIRG. *Covering the Cost: Why We Can No Longer Afford to Ignore Textbook Costs,* February 2016.

Maxwell, J. and Fraser, K. "Traversing The Book of Mpub: an Agile, Web-first Publishing Model." *The Journal of Electronic Publishing 13*, issue 3.

Nuñez, A. P., Adams, C., Safadi, B., Fuzz, M., Phillips, J. & Thorne, Michelle. *An Open Web*. FLOSS Manuals, 2011.

O'Leary, B. "Context, Not Container." In *Book: A Futurist's Manifesto*, edited by Hugh McGuire and Brian O'Leary. O'Reilly Media, 2012.

Wiley, D. *The Access Compromise and the 5th R*. Iterating Towards Openness, 5 March 2014.