A STRATEGIC ANALYSIS OF A DATABASE-DRIVEN WEBSITE DESIGN SOFTWARE COMPANY

by

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ABSTRACT

The purpose of this paper is to provide a critical strategic analysis for a database-driven web design software company and provide recommendations the company can adopt in order to achieve its strategic intent. The paper begins with a historical overview of the Internet software industry and its key drivers. This overview is followed by an industry and value chain analysis to discover what opportunities the business can pursue in this environment and identifies the key success factors to be price, product, customization and marketing.

The paper's second half provides an internal analysis of the company to identify the gaps between the company's existing capabilities (including management preferences), and what is necessary to achieve success. It concludes that marketing expertise and financial resources are the major roadblocks to success for WebAxle. The recommendations outline the major strategic changes required in order for the company to achieve its growth goals.

DEDICATION

To my parents whose love and spirit gave me the courage that made a difference in my life.

ACKNOWLEDGEMENTS

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GLOSSARY

.NET

.NET is not another version of Windows; it is the next-generation computing platform from Microsoft. At the core of the .NET is a new layer of software that sits above the Windows operating system. .NET insulates software developers and computer users from the deficiencies and incompatibilities of operating systems. .NET provides a new set of tools and prefabricated components of unprecedented power that can be used to write a new type of software called "managed code."

Active Server Page (ASP)

An Active Server Page (ASP) is Microsoft's server-side scripting technology. An Active Server Page has an .asp extension and it mixes HTML and scripting code that can be written in VBScript or JScript. ASP is distributed with Microsoft's IIS web server, so most host using IIS will also offer ASP for dynamic web programming. ASP.NET is the next version of ASP.

Application Service Provider (ASP)

An application service provider (ASP) is a company that offers individuals or enterprises access over the Internet to application programs and related services that would otherwise have to be located on their own personal or enterprise computers.

Content Management System (CMS)

A Content Management System (CMS) is an application designed to store, format, reproduce and manage Web and intranet data. The CMS usually uses a database to store the content and a server-side scripting language to recall and present the data.

DMOZ Directories

The Open Directory Project (ODP), also known as DMoz (for Directory.Mozilla, the domain name of ODP), is a multilingual open content directory of World Wide Web links owned by Time Warner that is constructed and maintained by a community of volunteer editors.

HTML

Hypertext Markup Language (HTML) is coded format language used for creating hypertext documents on the World Wide Web and controlling how Web pages appear.

Internet Service Provider (ISP)

An Internet Service Provider (ISP) provides access to the Internet for others via some connectivity services. This might be in the form of dial up services, broadband or wireless web hosting services or the combination of those.

J2EE

Java 2 Enterprise Edition (J2EE) is a Java-based, runtime platform created by Sun Microsystems used for developing, deploying, and managing multi-tier server-centric

applications on an enterprise-wide scale. J2EE builds on the features of Java 2 Standard Edition (J2SE) and adds distributed communication, threading control, scalable architecture, and transaction management. J2EE is a competitor to the Microsoft .NET Framework.

A Forrester Research report found that .NET is now more often named the primary development platform by North American companies - 56% of the 322 companies surveyed reported this to be true in their environments. Forrester points to Microsoft's development tools, notably Visual Studio .NET, as a key driver behind that growth. Of the seven industries looked at by Forrester, five report .NET as the lead development platform, with the public sector reporting the heaviest use at 65%. Two industries, however, rely more on J2EE – telecom and finance. Smaller companies are more likely to opt for .NET; larger enterprises are nearly evenly split (MacMillan, 2004).

1. INTRODUCTION

1.1 Subject of the Project

The focus of this paper is the strategic analysis of a company that develops and markets software technologies that build websites to enable businesses to offer extensive services to their customers and optimize their customer communications. The industry classification to which this kind of company typically belongs to is called Content Management System (CMS) and/or database-driven website design software and services. This classification is a sub-category of the larger software industry. This group of database-driven software companies, in combination with their substitutes and potential entrants to their markets, provides an appropriate sized industry segment for strategic analysis.

Companies of database-driven website design software generally enable their clients to coordinate membership and customers using services over the Internet. However, some companies use the Internet to enable e-commerce as their main objective. The scope of this paper will not include this latter group. Therefore, the focus of the paper is on the strategies of a company as a provider of database-driven, or data driven, website design software applications that enable the coordination of membership management and services, communication and content management.

During the past thirty years, the size of the computer industry has increased remarkably with continuously strong growth. The Internet has become a "killer app" that has changed many ways we do business and many aspects of our every day life.

In the modern marketplace, websites commonly serve as the first point of contact between companies and potential clients. Having a strong web presence can be one of the most important factors in determining a company's success in attracting new clients. Additionally, many companies have discovered the benefits of implementing internally-focused websites to widen the channels of communication between their internal groups & departments. Whether focused internally or externally, a website can serve as a major communication hub to promote interactivity and community. In recent years, database-driven dynamic websites (websites using databases to dynamically store and display their content) have had tremendous growth in popularity.

1.2 WebAxle Solutions Corporation and Strategic Intent

WebAxle Solutions Corporation (WebAxle) is a startup Internet software company founded in 2003. Its flagship product, AutoWebBuilder, is among the first purely web-based, database-driven website design software on the Microsoft .NET platform. It is designed specifically for users without a technical background. With the current version of AutoWebBuilder, WebAxle provides professional services to build and customize database-driven dynamic content .NET websites.

As a startup company, WebAxle's main problems include properly identifying the market and crafting a unique competitive strategy in order to achieve sustainable growth. WebAxle's goal is to achieve break-even in year 2006 with a sustainable revenue stream,

and employ seven people in 2008 with revenue of $300,000. This is the criteria that will

be used as a guideline for analysis and decision-making.

1.3 Purpose of the analysis

This paper has two purposes. First, it provides an overview of database-driven

website design software technologies and providers. After reading this paper, the reader

should be acquainted with this industry classification, better understand its origins and its

problems and have a sense of its future directions. The second, more important purpose is

to provide a critical strategic analysis for a database-driven software company and

provide recommendations the company can adopt in order to survive and succeed.

Figure 1: World Wide Web (WWW) Growth
Sites = # of web servers (one host may have multiple sites by using different domains or port numbers)
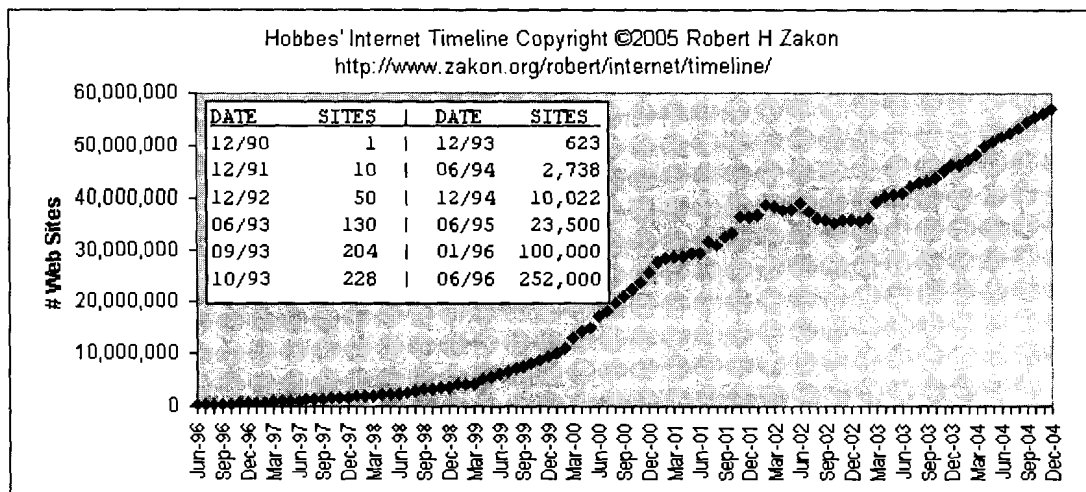
Source: Hobbe's Internet Timeline (Zakon, 2005). See Reference List for copyright note.

As indicated in Figure 1, although the number of web servers was approaching 60

million at the end of 2004, the recent dot com bubble burst impacted the growth of the

Internet from year 2001 and the following years. It has also impacted the demand growth in the database-driven website building market and the entrance of competitors from other software sub-industries is driving consolidation. To compete, database-driven website design software companies must develop strategies that will enable them to achieve a unique competitive advantage.

1.4 Structure of the paper

Following this introductory chapter, Chapter 2 provides a historical and structural foundation intended to familiarize the reader with the Internet software industry and its key concepts. Chapter 2 begins with an industry analysis and examines the industry value chain to find out what opportunities the business can pursue in this environment and what resources, organizational capabilities, and management preferences are required for effective implementation.

In Chapter 3, the competitive dynamics of the database-driven website design software industry are analyzed through Michael Porter's five factor model (Porter, 1980). As one of the paper's goals is to provide strategic recommendations, the competitive threats posed by new entrants and substitutes and the power exerted by buyers and suppliers will needed to determine the prospects for industry profitability and how these prospects might be enhanced. After identifying key success factors (KSFs) in Chapter 3, competitive rivalry will be examined in Chapter 4 to show how the company rates on the KSFs versus its key competitors. This leads to the identification of strategic alternatives in Chapter 5. Feasibility will be assessed through analysis of internal capabilities.

Then, the focus in Chapter 6 turns to internal analysis. The company's history, management team, financial state and organizational systems, structures and culture are

examined. Although the startup company has had a short operating history, its financial status and future outlook will be provided. Gaps will be identified between the company's existing capabilities, including company management, culture and resources, and what is necessary to successfully implement each strategic alternative. By applying the Diamond-E framework (Crossan, 2004), a viable strategy needs to be in alignment with opportunities and challenges of the environment on one hand, and with the internal capabilities, drives, and constraints of the business on the other hand.

Chapter 7 presents the final recommendation and an action plan. The recommendation is based on the strategic alternative that works best given the current resources of the company. The chapter includes not only the preferred strategic alternative, but also the internal capability modifications required to make the alternative feasible. This recommendation flows from the preceding analysis and includes a mixture of technology choice, marketing choice and collaborating options that will offer the database-driven website design software company a sustainable competitive advantage. An action plan will be presented at the end of the paper. This will facilitate a step-by-step implementation for future consideration.

2. INDUSTRY ANALYSIS

The industry we will be focusing on is the database-driven and content management website design software industry. It is part of the larger Computer and Internet industry. Thus, before analyzing the website design software industry, we need to establish a broader perspective on the Computer & Internet industry.

2.1 Internet Industry Characteristics

Over the last three decades, technology has transformed the way people work, play, and communicate. The Internet is a "killer app" that has changed many ways we do business and go about our every day life. Today, people access information and communicate with individuals from around the world instantly. Groundbreaking technologies have opened the door to innovations in every field of human endeavor, delivering new opportunities, convenience, and value to people's lives. There were 600 million personal computers around the world in 2004; by 2010, the number is estimated to grow to one billion (Microsoft, 2004).

U.S. online retail sales will continue to grow by a compound annual growth rate of 17 percent through 2008 to top US$117 billion, according to a report issued from Jupiter Research (Rush, 2004). Jupiter expects that the online buying population will grow by 14 percent in 2004, representing 30 percent of the U.S. population. By 2008, one-half of the population will make purchases online. Online retail growth will be fueled by another factor: increased average spending per buyer. In 2004, online buyers are expected to spend an average of $585 per buyer, up from US$540 per buyer in 2003. That trend in higher spending is expected to increase over the next five years. Through

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2008, average spending per buyer will be close to US$780. Websites, where the online

experience is taking place, are becoming increasingly important.

Table 1 shows adults in the 18 to 54 age group choose the Internet as the primary

media outlets. The study found that the Internet has surpassed television as the top media

choice among 18 to 54 year-olds.

Table 1: Top Two Media Outlets Adults (18 to 54 age group) Would Choose

Top Two Media Outlets Adults 18 to 54 would choose (% respondents)		
	1st choice (%)	2nd choice (%)
Internet	45.6	32.1
TV	34.6	27.8
Books	7.5	11.0
Radio	3.2	9.7
Newspapers	3.2	6.0
Video/DVD	2.8	6.3
Video/Computer Games	2.1	3.7
Magazines	0.9	3.5

Source: Online Publishers Association (OPA) (Magid, 2004)

The computer software market has gone through a consolidation, with many

product categories dominated by a handful of companies. The PC platform software

market is currently monopolized by Microsoft, whose 'Windows' operating systems is

used by 90 percent of the total consumer base (Microsoft, 1998). Gartner estimated that,

globally, 90 percent of small and midsize companies pay almost as much for information

technology – US$400 billion a year – which is the same as the US spends on defense

(Deutschman, 2004). This paper will be examining the PC Windows side of the website

design industry if not stated otherwise.

Modern websites have a profound impact on businesses. A survey by Interland

revealed that 77 percent of the small businesses surveyed said that their websites made

their businesses healthier, 55 percent said that having a website helped their companies weather the economic downturn, and 81 percent reported that their websites generated leads for their business (Interland, 2004).

The initial wave of companies on the web focused on providing information and company presentations to potential clients while some pioneers started to do business online. The second wave has more and more companies using the Internet to facilitate transactions with their customers and to support the business processes between themselves, their customers and their suppliers (Morath, 2000). As Michael Porter points out, "the 'new economy' appears less like a new economy than like an old economy that has access to a new technology" (Porter, 2001).

2.2 Database-driven Website Design Software Market

Unlike plain HTML websites, database-driven websites are websites that use databases to store and display their web content dynamically. The content displayed on each web page is stored in the database and any changes made in the database will be reflected on the web page instantly. Online editing components and Content Management System (CMS) are used in these websites.

Many organizations are looking into ways to better manage their activities using the web in the future. Their financials, fundraising, projects, events, job postings and publications will all be manageable through the web. Staff can work from home on flexible schedules to accomplish tasks and their action items can written by them and their managers on the web, with tools that let them edit their web pages almost as easily as browsing them. Small and large businesses alike have discovered the power of

database-driven web systems that can store, display and manage the large amount of data of site visitors, customers and e-commerce.

Figure 2 shows the website growth in the past 15 years.

Figure 2: Internet Hosts, Websites and Growth
Hosts = a computer system with registered IP address (an A record)
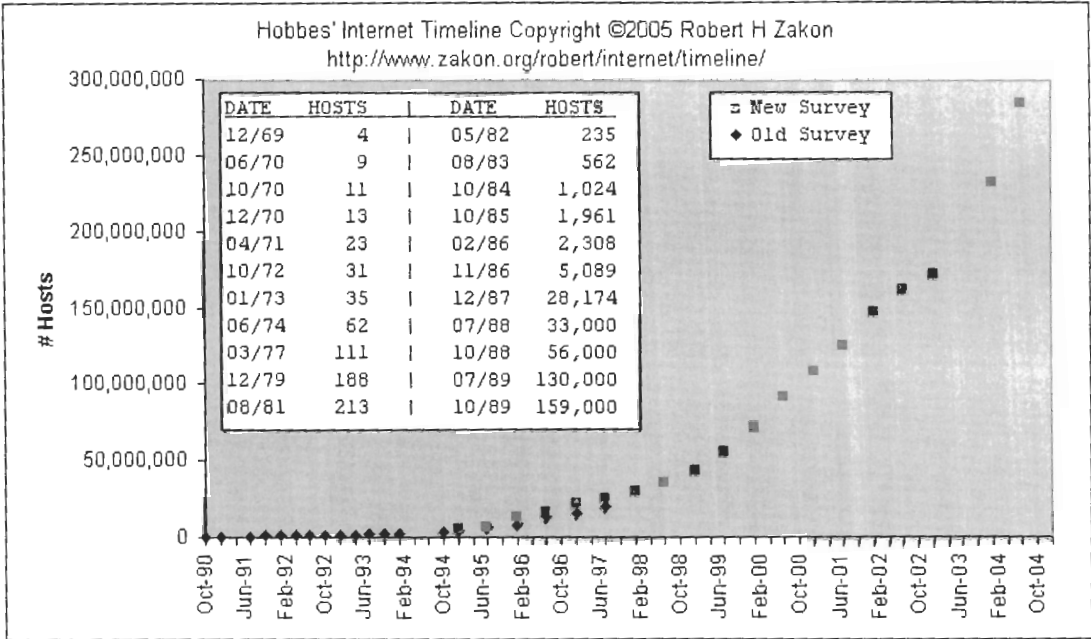
Hobbes' Internet Timeline Copyright ©2005 Robert H Zakon
http://www.zakon.org/robert/internet/timeline/

DATE	HOSTS		DATE	HOSTS
12/69	4		05/82	235
06/70	9		08/83	562
10/70	11		10/84	1,024
12/70	13		10/85	1,961
04/71	23		02/86	2,308
10/72	31		11/86	5,089
01/73	35		12/87	28,174
06/74	62		07/88	33,000
03/77	111		10/88	56,000
12/79	188		07/89	130,000
08/81	213		10/89	159,000

Source: Hobbe's Internet Timeline (Zakon, 2005). See Reference List for copyright note.

As indicated in Figure 2, the website growth is back to a rapid pace from late 2003, after the impact of dot com bubble burst which affected late 2001 and 2002. The growth rate in year 2000 is 51 percent, 2001 is 34 percent, 2002 is 16 percent and 2003 is 36 percent.

The website building market is growing rapidly. A global market intelligence and advisory firm IDC estimates the website building market will grow to $99.1 billion by

2004, up from $16.1 billion in 1999 (Rudy, 2001). This equates to an average 43.8 percent increase per year.

The database-driven website design software segment is highly fragmented. It is estimated that more than 200 companies are offering commercial products in the Content Management Systems (CMS) segment. This does not include most of the 50 no-cost open-source products. The Google and DMOZ Directories list hundreds more with CMS offerings. There are thousands of Internet Service Providers (ISPs) who have transformed themselves into Application Service Providers (ASPs) by providing online website editing.

The CMS products range in price from essentially free to costing millions of dollars. The following is a detailed product discussion.

2.2.1 CMS Products

The Content Management System (CMS) products have a wide range in features, target market and prices. Figure 3 outlines the product market segmentation.

As the product ranges are shown in the diagram, they are divided into different ranges according to the feature and price. This paper will focus on the products in the Low End segment where WebAxle's major product fits, but it is helpful to give a brief introduction on each segment.

Figure 3: CMS Product Market Segmentation
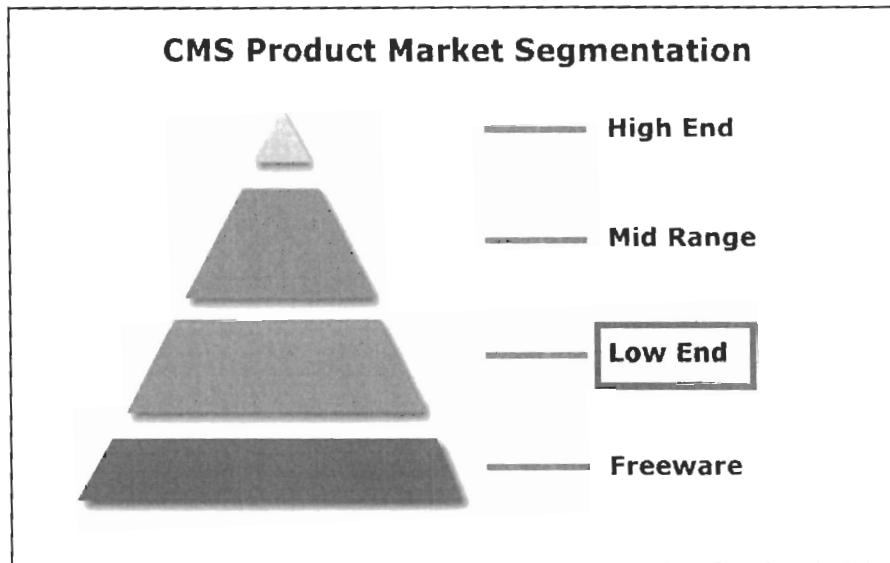
(1) High End: License fee over US$250,000 (Vignette, Documentum, Divine, Interwoven)

These top-tier systems can have dozens of writers, editors, graphic designers, layout specialists, legal departments, and content approval publishers working simultaneously without conflicting. Privileges are managed by each person's "role" in the system. They can manage thousands of web pages and schedule them to play on certain dates, suitable for big newspapers and magazines. They can release pages simultaneously in multiple languages. They can manage and instantly switch ("roll back") to earlier versions if needed.

Top-tier tools tend to emphasize the production phase. This includes acquisition and aggregation of assets, conversion of files to web formats, chunking documents into reusable "components," tagging them with metadata that marks their function in

the document model, and designing the "templates" into which the component objects will be assembled.

Although they can do the delivery or publishing phase, the biggest companies often require multiple high-speed caching web servers to deliver many "static" versions of the "dynamic" pages created by the production machines.

(2) Mid Range: License fee US$10,000 to $250,000 (Stellent CMS, Microsoft CM Server)

Mid range products have sophisticated workflow controls to know who is working on what page. They all have templates that separate the presentation from the content. This means that content authors can concentrate on getting the words and pictures right and layout specialists can style the pages uniformly throughout the website.

They can "tag" content component objects with metadata that allow the object to be used in more than one web page, with one update changing all appearances.

(3) Low End: License fee under $10,000 (Ektron CMS200, Userland Manila, WebAxle AutoWebBuilder)

These products usually have a WYSIWYG (what-you-see-is-what-you-get) interface to allow visual editing of web pages from the browser and offer basic content management and membership management features.

CMS200 can convert Word files to HTML. It has multilingual support, and it can "promote" pages from a production (development) environment to delivery (publishing) servers.

WebAxle AutoWebBuilder is an all-in-one low-end database-driven website development software and content management system. It is designed for non-technical people to build highly functional database-driven websites on Microsoft .NET framework.

At the core of the AutoWebBuilder software is a library of built-in website features, each of which can be integrated into websites through a point & click interface. Features found in AutoWebBuilder's feature library include message boards, events calendars, issue tracking tools, document management, file sharing, newsletters, storefronts and shopping cart technologies, membership tools, and administrative site building tools. This building block architecture allows users to completely customize the look, feel and functionality of their websites to best meet their specific needs.

If not stated otherwise, only this low end market segment will be discussed in this paper.

(4) Freeware: Open source, free programs (Midgard, OpenCMS, RedHat CCM, Zope, Plone)

Most of these products require additional work, either do-it-yourself or by using other tools. Many products are designed for personal use or for organizations with limited budgets. They are possible substitutes of the Low End products.

2.3 Value Chain Analysis

An industry value chain is a system that includes the value chains of upstream suppliers and downstream channels and customers. A company value chain shows the

activities involved in a company to create value for its customers. In the database-driven website design industry, the industry value chain can be identified in Figure 4.

Figure 4: Industry Value Chain
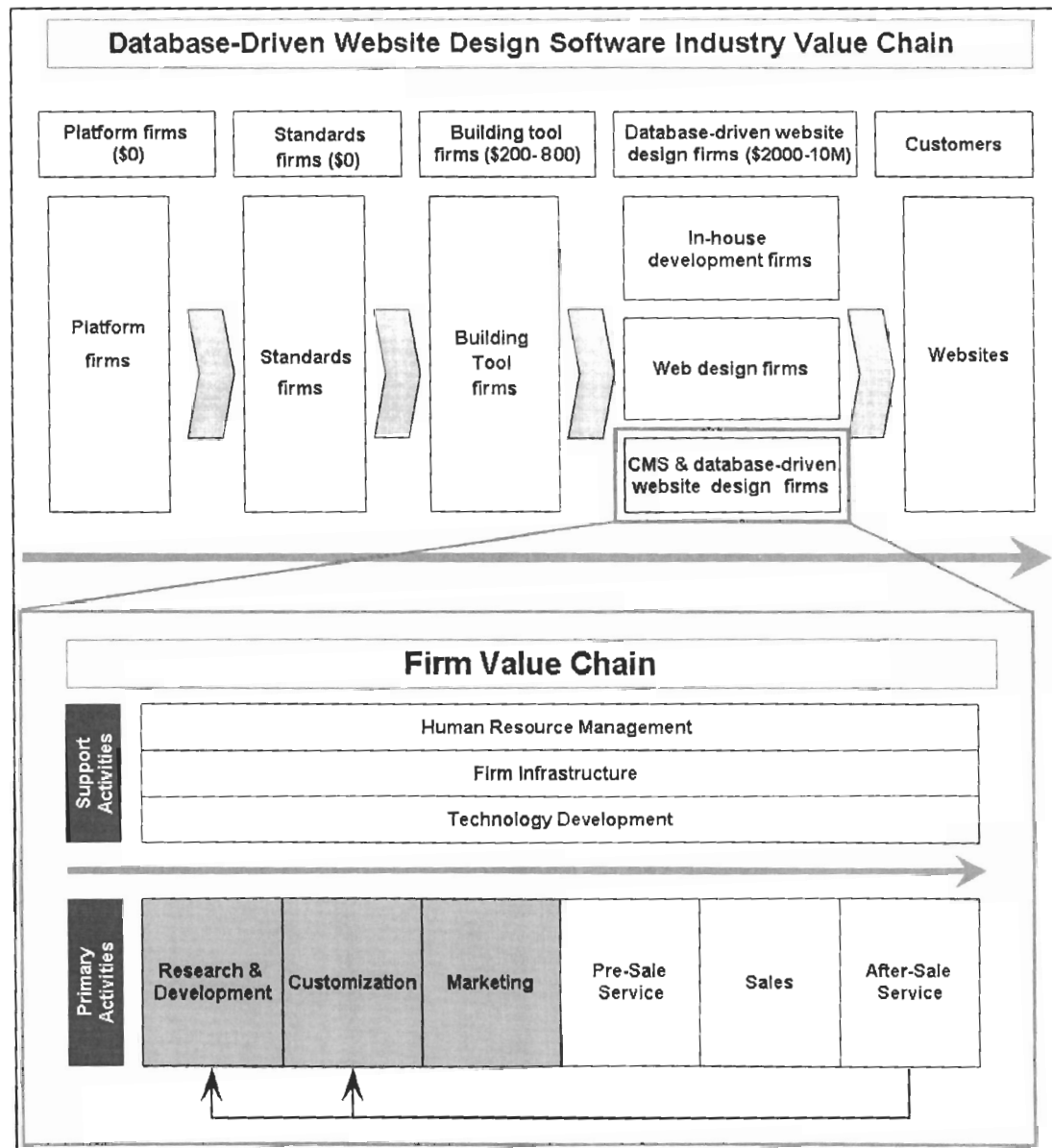
The diagram consists of two parts. The upper half is the general website design industry value chain, and the lower half includes CMS product based, database-driven

website building companies. Each section of the chain will be analyzed below with the focus on the most important activities.

2.3.1 Website Design Industry

(1) Platform Companies

Platform companies are large companies that supply the basic infrastructure for the Internet online community. The entire Internet is made up of hardware and software. Platform companies provide all the necessary software to run the hardware. Based on the World Wide Web Consortium (W3C) standards, platform companies provide operating systems and other essential Internet tools, such as the browser.

Platform companies are very concentrated and only two operating systems are widely used today, Windows and Unix/Linux. With Windows, as outlined in section 2.1, Microsoft dominates the market with 90 percent market share (refer to 2.1). In Unix/Linux, Sun Microsystems dominates. Web browsers are either supplied by the platform companies such as Microsoft Internet Explore (IE) or by the partner companies such as Firefox which is a partner of Sun. All browsers are provided free of charge to customers.

In the value chain, platform companies are the infrastructure providers and do not create any value in the website building value chain.

A website has to comply with the W3C standard as well. However, there are minor differences between the web browsers platform companies provide.

(2) Standards Companies

Standards companies are companies providing basic standards or Internet programming languages, such as HTML, Perl and CGI. They are either open source or provided free of charge.

Standards companies provide the basic software infrastructure for a website with the W3C standards. However, they don't create any value in the value chain.

(3) Building Tool Companies

These are companies that make HTML page and website development tools. Mostly they sell their products as shrink-wrapped software. Many software venders for HTML page and website building tools can be found on the market. For example, Dreamweaver from Macromedia, and FrontPage and Visual Studio from Microsoft are popular tools. Microsoft is also a platform company.

Most of these kinds of tools are sold as off-the-shelf software packages in the US$200 to US$800 price range. Building tools companies are the first ones that start to create value in the value chain.

(4) Database-Driven Website Building Companies

These companies build or design websites for the end users. A company in this position in the value chain takes all the tools and materials from the previous value chain section supplier companies and constructs a website for a customer. These websites are not simple HTML based websites. They are database-driven and the

content is stored in the database. Content is also managed through the program and database. The prices of database-driven web systems have a wide range, anywhere from US$2,000 to US$10 million. Some complicated website systems such as government online management systems are routinely costing over US$1 million.

As these companies represent the website building companies that create the most value in the website design industry, they need to be analyzed in detail. There are three types of database-driven website design companies:

A. In-house development

The first type of design company includes companies with an internal IT team that designs, develops and manages the company website. Most large technology based companies have an internal dedicated web IT team to design and manage their websites (Dell, Amazon, etc.).

B. Web design companies

The second type of company is the web design company. These are commonly referred to as a "design house". They are mostly HTML web design companies without a product. Each customer order requires the design of a database-driven website to be done from scratch. Without a product, even large companies in this category construct a database-driven website from scratch. Company sizes in this category can range from a few people to hundreds of people. Billing by the hour or the number of pages is common in this type of company.

C. CMS & database-driven and website design companies

The third type is Content Management System (CMS) product based, database driven website design software companies. This is a relatively new type of company which takes advantage of the latest technologies possible. These companies have a CMS product (refer to Section 2.2.2) with a kind of "database-driven website builder". But since all web systems have certain requirements demanded by their customers, customization services are usually provided along with the product. Due to the fact that they do not develop each website from scratch, the amount of work related to a project is mostly due to customization.

Since this type of company is the focus of this paper, we will further analyze the company activities in the next section, 2.3.2.

(5) Customers

Customers are website owners, either owned by a company or an individual. They are the ones who order a website and pay for the product and services.

2.3.2 Company Value Chain Activities

To better understand the company activities through which a company develops competitive advantage and creates value for stakeholders, it is useful to analyze a series of value-generating activities referred to as the company value chain, displayed in the lower half of Figure 4.

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The goal of these activities is to offer the customer a level of value that exceeds the cost of the activities, and also results in a profit margin for the design company in the end.

The primary value chain activities are analyzed below with the emphasis on key activities. The key activities are the ones that are most important and create the most value in the value chain and they include: research & development, customization and marketing.

(1) Research & Development (R&D)

As a software development company, R&D takes center stage. Technology research and product development are the major components of the R&D activities. Research on the latest technology in the website building field, such as .NET and the latest database technology, is very important for a technology based company. Product development is the other major part of the R&D activities. Developing a solid database-driven website design software with a Content Management System (CMS) is not a trivial task. It takes a lot of time, investment and a dedicated team to achieve the goal.

WebAxle is a knowledge based company that understands that learning and knowledge sharing and creation is important to developing a solid product. At WebAxle, there is a company library and an online knowledgebase. We provide employees frequent opportunities to discuss, debate, and share knowledge in their areas of work.

Even though R&D is one of the core competencies, WebAxle doesn't do 100 percent of the activities. Some technology and components are purchased from a platform company, namely Microsoft, and other tool making companies. WebAxle does about 80 percent of the entire research and development activities.

(2) Customization

Even with a generic website building and a CMS product, customization is another core part of the activities for these companies. Virtually every website is unique. Being able to customize the website and further develop new features for their web-based system, including look and feel, is vital for the customers. There is a tradeoff between how flexible the software should be and the complexity of the product. To be more flexible, more options should be provided. But since all the website construction information is stored in the database, the more options it provides to the end user, the more complex the database will get. The more complex the database the longer it takes to load the web pages.

There are two ways to provide customization in the system. The first is user customization. That is, the customer can customize the website after deploying the software package. This requires some technical skills, and sometimes, the amount of work involved could lead to a major IT development effort for the customer. The second is paid customization and development services. This kind of customization often occurs when the customer has no technical background or expertise. Based on the currently available features, some development and customization is required in order to meet the customer's specific needs.

Although customization results in greater costs compared to selling the product as a stand-alone package, it also adds the most value to the company's bottom line. A CMS product in the low end market segment is under US$10,000 (see section 2.2.2), but a customization project can range from US$10,000 to US$100,000.

WebAxle uses a "build to order" product strategy. That is, the shrink-wrapped product, AutoWebBuilder, is sold with a set of standard features but without any customization from WebAxle. The end-user can customize and make changes themselves. WebAxle has also built another set of underlying components as special features that are not part of the standard features which go along with the Standard version. They are customized each time to fit customer's requirements. This is called the Enterprise version.

At WebAxle, about 90 percent of the customization work is done by the development team. This is the most important value added service in the company value chain. It requires tight teamwork and frequent customer interaction as the user requirement itself will change over the course of customization and development. The customization process can often be like "shooting at a moving target".

As to the other 10 percent of the customization work, it relates to design materials such as photographs, images, Flash movies and web page layout templates. They are essential to building a website. However, they are not part of WebAxle core competence and WebAxle does not keep an in-house "web designer". Most of the graphics related activities are outsourced.

Outsourcing is mainly done through web graphics companies. They sell photos, images and web page layout templates. The price of an image is from US$3 to $10, and the web page layout template is about US$50 to $80. WebAxle purchases these as "raw materials" and modifies them to fit into a project according to the customer requirements.

(3) Marketing

Marketing provides the interface between the company and its potential customers. In a CMS product based, database driven website design software company, because the price is not as low as the simple HTML based products, marketing activities are required to articulate the product differences to its customers and convince them that the higher price is warranted.

Marketing activities are usually performed in two ways, by company staff and/or by contracting out to marketing specialty companies. Due to competition, marketing has become an increasingly important aspect of the company activities.

At WebAxle, because we do not have extensive marketing resources, marketing activities are performed in the above two ways, but at a sub-optimal level. The activities performed by WebAxle staff is about 30 percent of the total and are comprised of mostly online publicity appeals and advertisements.

Included in the 30 percent of marketing activities, WebAxle has a long term media relations campaign for online publicity. It initiates WebAxle news releases to online publishers, and runs interviews and message boards. It also gives away free

white papers and guidance documents to many companies to build awareness and get their opinions.

Advertisements include a pay-per-click keyword search advertisement on Google which has run since 2004. It is a special type of advertisement that only appears when someone searches a keyword on Google. The WebAxle advertisement box could appear on the right hand side of the search result page. The location is determined by how much WebAxle pays compared to a competitor's bidding price. When a user clicks the WebAxle advertisement link, WebAxle pays Google the amount it bid for the place. This way, even if it is relatively high on each click, WebAxle pays Google about $1 per user click regardless of what the user does after visiting webaxle.com, WebAxle is trying to use a "precision rifle, not a shotgun" approach to get customers.

WebAxle also contracts out marketing activities to marketing consulting companies. It has a profit sharing agreement with these companies so that WebAxle doesn't pay anything upfront. WebAxle will pay 20 percent to 50 percent of the invoice price to the consulting company should their referred customer result in a purchase. WebAxle currently has two of these types of consulting companies.

(4) Pre-Sale Service

Pre-sales services include: information presented on the company website, demonstrations and documentation, as well as customer requirement handling.

(5) After-Sale Service

In conjunction with customization, after-sales technical support is another activity in the value chain. Because of the database aspect of the web system, it is not always intuitive for a customer who has no technical background to understand, customize and manipulate the data and content as well as manage the site. The WebAxle product AutoWebBuilder comes with initial product training and a user & administrator guide. Customers may also purchase more extensive technical service packages at a cost of 15 percent of their total website development cost, should they desire to have closer contact with WebAxle development and support team.

The majority of support is performed by WebAxle staff. Because support usually takes place after the customer website goes live, working in conjunction with the web hosting companies is required.

WebAxle does not do web hosting. Web hosting is not part of the core competencies in the website building tools business. The web hosting market itself has become mature and the quality and price are predictable. They have gone through a sort of commoditization process in the recent years. WebAxle contracts out the hosting services.

(6) Support Activities

Support activities include human resource management, company infrastructure and technology development. They are required to achieve optimal operational effectiveness.

A. Human Resource Management

This area covers employee recruiting, hiring, training, development, and compensation. WebAxle provides a reward mechanism for employees who learn continually and perform well. These employees will get more important tasks within projects and be rewarded with a pay raise. WebAxle has a unique interview process to select highly skilled individuals. On top of resume screening, the interview process consists of a technical test, creative thinking questions, a presentation and a customer relation skills test.

B. Company Infrastructure

Company infrastructure refers to organizational structure, the control systems, and company culture.

WebAxle, as a small startup, has a flat organizational structure to accommodate the fast moving nature of the business. Decisions are made quickly based on tight teamwork and interaction. WebAxle is a knowledge based company and as a team, constantly tries to optimize the creation of both tacit and explicit knowledge. This attribute is also one of the hallmarks of a technology centric nature.

C. Technology Development

Technology development touches every corner of a knowledge based company in supporting value-creating activities. It is closely related to R&D, and

provides email services, networking and remote access to company hardware resources. Communications and information systems are the most important technical components in a website building technology company and they are used across the value chain. In addition, technologies related to training, design, and software development are frequently employed in support activities.

WebAxle realizes that because technology is employed in every value creating activity, it can directly impact competitive advantage.

2.3.3 Summary

The key activities are the ones that are most important and create the most value in the value chain and what creates value for the end users.

From the above analysis, we identified the key activities as being research & development, customization and marketing. They are shaded in gray in the diagram. These activities add most value to the company profit in this industry.

Research & development (R&D) is about making the product and developing its features. Customization is a major factor contributing to the higher price of the product. And marketing is the bridge between the company and customers. These activities add most value to the company profit in this industry and significantly affect the company's long term success in the market.

3. INDUSTRY COMPETITIVE DYNAMICS

The competitive dynamics of an industry is an important predictor of industry attractiveness, which is defined as the likelihood for companies within that industry of earning a better than average profit. This paper analyzes the competitive dynamics in the database-driven website design software industry using Michael Porter's five forces model (Porter, 1979). This model breaks down the relative competitive strengths and threat of new entrants, the threat of substitutes, rivalry in the industry, as well as the power of suppliers and buyers (see Figure 5). This model is used to better understand the industry context in which the company operates. From the analysis, some conclusions are drawn as to the future prospects of website design software companies.

Figure 5 represents the competitive dynamics of the database-driven website design industry, with different colors indicating the different effect of the force.

3.1 Threat of Entry

Barriers to entry are unique industry characteristics that define the industry. Barriers reduce the entry rate of new companies, thus maintaining a level of profits for those already in the industry. From a strategic perspective, barriers can be created or exploited to enhance a company's competitive advantage.

Generally, developing a database-driven website building tool and Content Management System (CMS) is not a trivial task for an individual developer, or a company without extensive technical experience and does require capital investment. It requires a team with extensive knowledge in user interface design, database technology, system architecture and programming to work for a considerable length of time. Further analysis is given below.

Figure 5: Competitive Dynamics of the Industry

Figure 5: Competitive Dynamics of the Industry
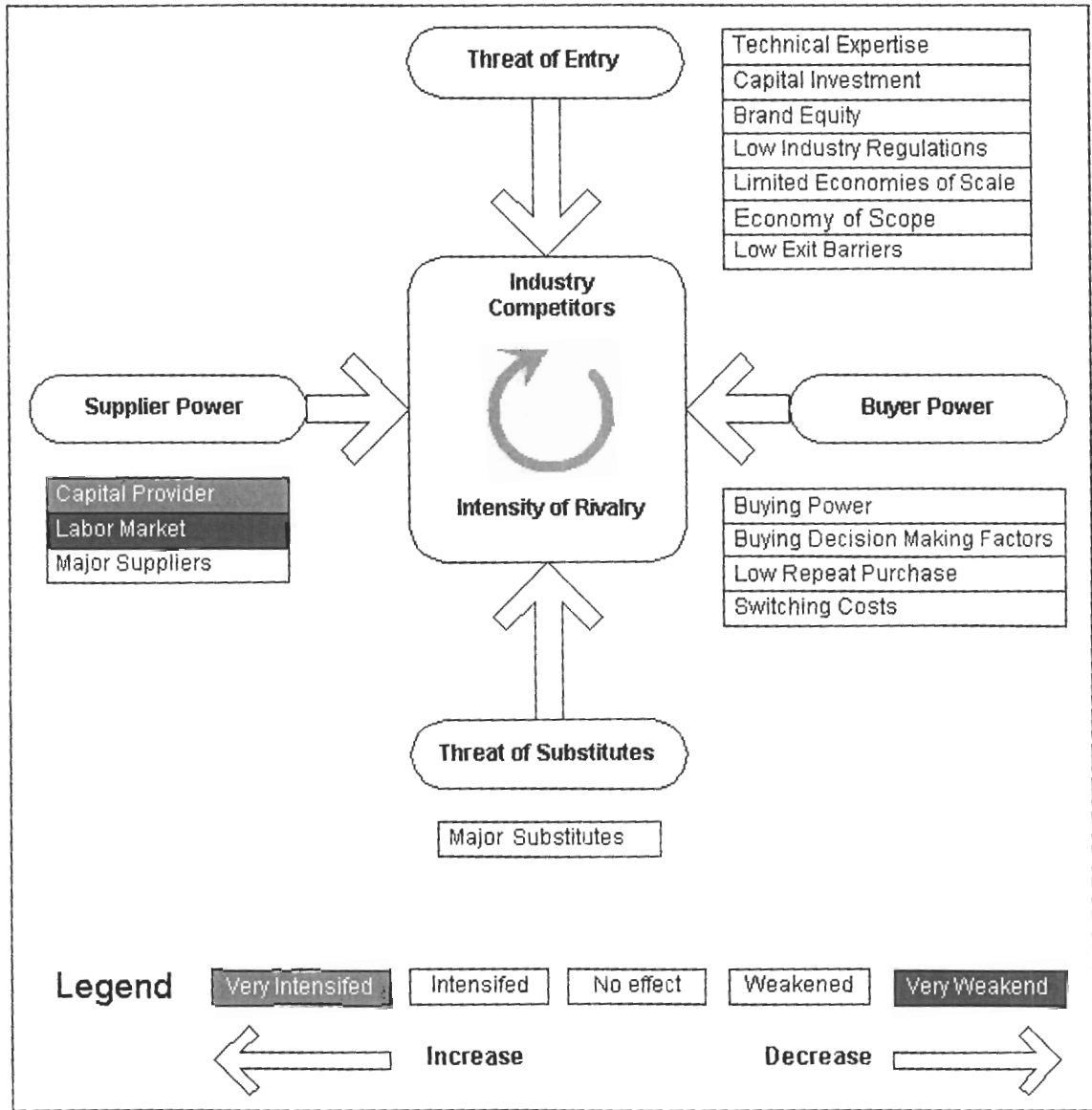
Adapted from Michael Porter's five forces model (Porter, 2001)

3.1.1 Capital Investment

Developing a Content Management System (CMS) and database-driven website building product with the latest technology requires capital investment. The investment may not be a small amount since it typically requires a team of five to seven people anywhere from six months to two years to design and develop a solid CMS product.

Because of the impact of the dot com bubble burst, the capital investors tend to take a conservative approach in investing into any Internet related companies, including website design companies. This leads to fewer companies getting into this market.

3.1.2 Technical Expertise

The possibility that new companies may enter the industry due to easy access to the technology also affects competition. When we look at the possibility of required capacity to enter this market, according to Microsoft's John Montgomery, there are roughly 6 million professional developers worldwide, about 90 percent of whom target Windows. Four to five million of those 6 million developers targeting Windows are Visual Basic developers. There are about 2.5 million .NET developers. More than 60 percent of the Fortune 100 developers use .NET. Forrester says that 56 percent of enterprises in North America are choosing .NET for their development requirements versus 44 percent choosing J2EE (ZDNet, 2004). This means that potential entry to this market is possible due to its large size.

However, the technology behind leading website building applications has taken considerable time and expense to develop. Despite the rapid diffusion of this technology, duplicating the functionality of products from market leaders is expensive and requires highly skilled developers with experience in these products.

Product quality and features is a major factor of being competitive or not when compared to the other products in the market. Quality and functionality can shift the competitiveness of the company towards its competitors. Thus, technical expertise is likely to be a factor that makes entry difficult.

3.1.3 Brand Equity

Product differentiation enables established companies to achieve brand recognition and customer loyalty. However, brand recognition has not presented a significant barrier to entry in this industry (See 3.4 for more statistic information).

3.1.4 Low Industry Regulations

This industry is not highly regulated which reduces the barriers to entry.

3.1.5 Limited Economies of Scale

Due to the unique nature of website development, although CMS products may look like they can achieve economies of scale, if customization and services are added in to the mix, there are limited economies of scale in the database-driven website design industry. Customization and services are not easily scalable. This keeps the industry fragmented. Although the large pool of professional individuals does not translate to the number of CMS product based companies, as outlined in beginning of this section, entry is somewhat easier as a result.

3.1.6 Economy of Scope

Because this is a knowledge based industry, companies entering early and doing multiple projects will have advantages in developing new websites and leveraging the knowledge in other area of the business as knowledge spill over. However, because of the rapid diffusion of this technology (Section 3.1.2), the effect is likely to be limited.

3.1.7 Low Exit Barriers

Due to the intense knowledge-based nature of the website design business, the exit costs when a company goes out of the business are not likely to be high. The initial

investment is the only factor that would be lost when a company goes out of the business. This easy exit increases rivalry.

3.1.8 Summary

From the above analysis, the database-driven website building market appears to have a medium to low level entry barrier. The investment and technical expertise required increases the entry barrier significantly. Limited economies of scale reduce entry barriers, and economy of scope has a limited effect in this regard. Low industry regulations and low exit barriers reduce entry barriers.

Thus, we can see the product and its quality is likely to be a key factor contributing to the company's competitive advantage. This finding is consistent with the results of the value chain analysis.

3.2 Threat of Substitutes

In Porter's model, substitute products refer to products in other industries. To the economist, a threat of substitutes exists when a product's demand is affected by the price change of a substitute product. A product's price elasticity is affected by substitute products - as more substitutes become available, the demand becomes more elastic since customers have more alternatives. A close substitute product constrains the ability of companies in an industry to raise prices.

While the threat of substitutes typically impacts an industry through price competition, there can be other concerns in assessing the threat of substitutes.

3.2.1 Major Substitutes

In the CMS product based, database-driven website design software market, the major substitute products can be identified as follows,

1. Non database, static and template-based HTML websites

2. Fully customized database driven website building services

Compared to a generic purpose database-driven website design tool, these two substitutes are not very similar. A static HTML website costs less, but is functionally inferior to a database-driven website that can manage dynamic content. On the other hand, a fully customized database-driven website requires either a fair amount of technical know-how or enough of a budget to build from scratch. That is, these are substitutes, but not perfect substitutes.

Although they are not likely to pose significant threat as functional substitutes, considering the prices differences, there is some threat. A customer may not understand the technical differences sufficiently and therefore price could play a large role in their decision making. It is common that the HTML sites have a lower price and fully customized database driven sites have a higher price. Table 2 lists the price comparisons of the WebAxle product AutoWebBuilder (AWB) and substitutes.

Table 2: Substitutes Price Comparisons With WebAxle AutoWebBuilder (AWB)

Substitutes	Price vs. AWB		
	Lower	Same	Higher
Static HTML builder	X		
Customized HTML builder	X	X	X
Database-driven site builder (components sold separately)		X	X
Customized database- driven site builder (portal)			X

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3.2.2 Summary

In summary, when compared to many website building tools available on the market, database-driven website design tools have no perfect functional substitutes but a customer may feel that the functionality is close enough. This will affect the price. The threat of substitutes is a major contributor to price competition.

3.3 Supplier Power

Products require raw materials - components, tools and other supplies. This requirement leads to buyer-supplier relationships between the industry and the companies that provide the raw materials used to create products. Suppliers, if powerful, can exert an influence on the industry.

Key suppliers to this industry include capital, the labor market, and major suppliers of development tools and software. The overall supplier power is medium to low.

3.3.1 Capital Provider

Providers of venture capital are significant suppliers in this industry. Many database-driven website design software vendors are startups and have yet to reach profitability.

With the impact of the dot com bubble burst, it is hard for website design software companies to obtain the financing required to sustain them until the market reaches its projected potential and their break-even points. This increases the supplier power.

3.3.2 Labor Market

On the other hand, the shortage of capital also has impact on the labor market in this industry. It reduces the power of another group of suppliers, namely skilled labor. The exit or downsizing of many Internet companies reduces the pressure in what had previously been a tight high-tech job market. Companies find it is easier to fill important skilled positions.

3.3.3 Major Suppliers

The main Internet technology available today can be divided into two camps: Microsoft .NET and Sun Microsystems J2EE. Virtually every website is unique. Each website has its own purpose, intended audience and presentation. However, the common HTML standard has been established for all websites. Thus, the underlining technology is concentrated in few platform providers, such as .NET and J2EE. In addition to the facts mentioned in the "J2EE" section in the glossary, in May 2004, Forrester Research released a report that found 56 percent of developers polled consider .NET their primary development environment in 2004, compared with 44 percent for J2EE. In certain verticals, the gap grows even wider; for example, 65 percent of developers working on public-sector projects said .NET was their primary platform versus 35 percent for J2EE, while 64 percent of business-services developers led with .NET over 36 percent who led with J2EE (April, 2004).

As the major supplier, Microsoft has an open policy and encourages companies and developers to adopt .NET and offers extensive support in sharing knowledge. Although the suppliers are concentrated, it does not pose any supplier power. However, it

is possible that in the future, Microsoft may want to enter this market with a new product offering and increase the supplier power to take advantage of this concentration.

As for web hosting companies, because the web hosting market has gone through a commoditization process in recent years and has reached its maturity, the quality, service and price are predictable. Web hosting becomes a commodity that software companies can outsource. Thus, a hosting company has little power as a supplier.

3.3.4 Summary

From the above analysis, we identified that the supplier power is medium to low contributing to the competitiveness of the industry. The tight capital supply is offset by a good labor market, and other supplier factors have minimal impact.

3.4 Buyer Power

The power of buyers translates to the impact that customers have on a producing industry. In general, when buyer power is strong, the relationship to the producing industry is near to what an economist terms a monopsony - a market in which there are many suppliers and one buyer. Under such market conditions, the buyer sets the price. In reality few pure monopsonies exist, but frequently there is some asymmetry between a producing industry and buyers.

In the database-driven website design software industry, companies mostly sell their products and services directly to the customer, so retailer networks are not considered to be a main buyer.

3.4.1 Buyers

At the low end CMS product market, the buyers are not concentrated and the number of buyers is growing rapidly (see Figure 2). This reduces overall buyer power.

On the other hand, as pointed out in Section 3.2, substitutes, although not perfect substitutes, can appear perfect to the end users who do not have all of the information on the differences between a traditional website and a CMS database-driven website. This will drive price down.

3.4.2 Buying Decision Making Factors

As Internet technology reaches maturity, online business has increasingly become a normal method of conducting business. From the buyers point of view, TNS surveyed 2,500 adult consumers nationwide. Of those surveyed, more than 75 percent said company size was not a factor in having their online buying needs satisfied, while only 15 percent of respondents said they preferred to shop with large companies or retailers (Matthews, 2004).

3.4.3 Low Repeat Purchase

Once a website is built and up and running, the company does not have an immediate need to purchase another product to build a new website. This will reduce the buyer power. However, it is common that functionality needs to be expanded which leads to more development, either in a phased development approach or through upgrading.

3.4.4 Switching Costs

Although Windows and the .NET platform do not have a monopoly in the website hosting industry, once the buyer's database-driven website is built on Windows, there are significant switching costs. It is not easy to switch the CMS product and database-driven website system to another platform, such as Linux. This switching cost reduces the buyer power after the system is adopted.

3.4.5 Summary

At the low end CMS product market, due to the low concentration of the buyers and high switching costs, buyer power is reduced. On the other hand, because buyers do not have perfect information regarding the substitutes, buyer power is increased as that can affect the price. Overall, a medium level of buyer power exists in this market.

3.5 Competition Analysis Summary and Key Success Factors

Table 3 summarizes the preceding analysis. The values for each category range between low, medium and high, with hyphenated, halfway increments between category pairs.

The most intense aspect of the database-driven website design software industry is the threat of substitutes, followed by buyer power. As with many new industries, it appears that the companies that pioneered the technology may not survive to reap the benefits of their work. On the other hand, the relative low supplier power is an attractive factor in this industry.

Table 3: Summary of Competition Analysis

Summary of Competition Analysis	
Threat of Entry	Medium – Low
Threat of Substitutes	Medium – High
Supplier Power	Medium – Low
Buyers Power	Medium

Most analysts agree that the Internet is becoming a primary business medium and that a majority of businesses will use the Internet for commercial purposes. This will

likely cause more entrants into the market and increase rivalry. More discussion on rivalry will be in Chapter 5.

3.5.1 Key Success Factors

The key success factors (KSF) are the areas a company needs to be strong in to compete successfully in the industry. For a company to succeed, it must manage its access and control over as many of these factors as possible. The companies who can do this will develop sustainable competitive advantages over their competitors.

In the database-driven website design software industry, the key success factors identified from the previous analysis are price, product, customization and marketing.

(1) Price

As discussed previously, the price of the CMS product based, database-driven website design software is an important factor in achieving competitive advantage. There are two reasons for this. First, medium buyer power requires the company to be sensitive in pricing. Secondly, because the company has positioned itself in the low end price segment, the threat of substitutes poses a significant factor for companies to reduce their price.

In order to achieve competitive advantage, if its product is not differentiated, a CMS product based, database-driven website design software company needs to be price sensitive.

(2) Product

The product quality refers to the features and technology deployed in the product. In competing with rival products in the same category, quality can be a competitive edge when comparing substitutes. However, to achieve high quality with pre-built features is a

challenge for a CMS product based company. It takes time and capital investment in R&D and related development activities.

(3) Customization

This is a unique success factor in the database-drive website design software industry. Because most value added activities are generated in the customization stage, this factor is very important for a company to survive and succeed. Due to limited economies of scale (Section 3.1.5), customization is one of the contributing factors making this a fragmented industry where small size companies can be effective. This also reduces rivalry.

Furthermore, sustainable revenue also comes from company reputation which includes service delivery. Although one customer has low repeat purchases, word of mouth and reputation in the community could affect other potential customers.

Customization and product are competing KSFs with price. They add additional value and therefore allow the vendor to charge a higher price. If you can't charge more for a better product, logically you don't spend the extra money to produce the features to begin with.

(4) Marketing

Marketing is the interface to the customers. It is how the company presents itself to the buying public. Due to the fragmentation of the market, marketing becomes a key success factor for a company to succeed in the database-driven website design software business. However, different strategies require different marketing focuses. This will be discussed more in Chapter 5.

4. COMPETITIVE ANALYSIS OF RIVALRY

The competitive dynamics of the industry given in the previous chapter are an important predictor of industry attractiveness. In this chapter, we will look into the specific market of the CMS product based, database-driven website design software industry, summarize its intensity of rivalry, and analyze actual competitors to identify WebAxle's current situation and competitiveness.

4.1 Target Market

We need to take a closer look at WebAxle market segment to see what it consists of. Since the WebAxle product targets end users looking for database-driven website design tools, the ideal market for WebAxle is North America. Table 4 is the target segment analysis of the customers. We identify WebAxle's market segment to be profitable small business owners wanting to take advantage of the Internet in the US and Canada.

Table 4: Target Market Segmentation

Market Segment	Target Market		
	Local	US and Canada	International
25-50 year old Professionals		X	
Small Business			X
Medium Business		X	X
Large Business	X	X	X

X – Companies use database-driven websites

X – WebAxle target market

4.2 Rivalry Intensity Analysis

As outlined in Section 2.2, the website building market is growing rapidly. However, the low cost database-driven website design software segment is highly fragmented. There are a large number of companies in this segment.

In the software industry, most company expenses are fixed and paid in advance of revenues being realized. The gross margins are relatively high due to miniscule marginal costs. Rivalry is therefore generally high in software industries, with other factors determining the severity of that competition.

In the Content Management System (CMS) product based, database-driven website design industry, competition among website building providers is driven by market conditions. As the key success factor outlines, rivalry is increasing. WebAxle's competitive advantages against its competitors are analyzed below.

4.3 Competitive Analysis

Due to relatively low barriers of entry, competition is intense in this industry. Ektron Inc. is an example of a typical competitor of WebAxle in the low end CMS based, database-driven website design software market. Ektron Inc. with its product CMS200 is a product focused company with extensive resources in marketing. Another example is Graphically Speaking Services Inc. (GSS) which is a web design company that designs and builds normal and database-driven websites without having a product.

Ektron Inc. was founded in 1998. It is based in Amherst, NH, in the US and has offices in Europe. Ektron is considered a front runner in web content management and authoring software. Ektron's products are used in more than 10,500 integrations

worldwide, including Fortune 500 corporations as well as mid-size businesses, colleges, and hospitals.

Ektron CMS200, as a direct competitor to WebAxle's AutoWebBuilder 2.0 in terms of CMS features, was designed specifically for the Microsoft Active Server Pages (ASP) platform. Ektron CMS200 delivers powerful web content management functionality for small and mid-sized organizations, department-level corporate use, and most intranet and extranet environments. It offers a folders-based interface, which simplifies content organization and streamlines administration for any level of workflow. It was designed with simple installation and integration; a Windows Explorer like folder design; user-friendly administrative functionality; and an HTML editor, eWebEditPro (a browser-based, Microsoft Word like authoring tool for text, tables, images, spell-check and hyperlinks). CMS200 features include:

- Definable user permissions

- Advanced workflow

- Advanced check-in/check-out

- Content scheduling

- Search capabilities

- Template creation and management

Ektron CMS200 is priced at US$3,000 and eWebEditPro is US$400. AutoWebBuilder contains the features of CMS200 and eWebEditPro combined.

Graphically Speaking Service Inc.(GSS) is a Vancouver based company providing website design and development by professional web designers, programmers and Certified Internet Marketing and Business Strategists (CIMBS). For over 16 years

Graphically Speaking has produced complex multimedia productions for businesses in Greater Vancouver. It grew and became the largest presentation graphic service bureau on the Pacific Coast in Canada. It entered the website building market in 1999. The company not only designs and builds websites, it also offers Internet marketing, e-commerce, content development, Flash animation and user navigation.

The price range of a GSS website design is typically around US$5,000 without database-driven technologies and $10,000 to US$20,000 with database-driven technologies.

WebAxle AutoWebBuilder is built on the Microsoft .NET platform using ASP.NET and database technology. WebAxle has two AutoWebBuilder versions, Standard and Enterprise.

- AutoWebBuilder Standard

  It provides 25 pre-built template tools for database-driven, .NET website needs. It has a WYSIWYG interface, and allows visual editing of web pages from the browser. The list price is US$1,000.

- AutoWebBuilder Enterprise Customization

  This is the standard version plus professional services from WebAxle to build a customized database-base driven website. It can apply to a variety of websites from basic, informational websites to robust e-business applications. Enterprise Customization is typically US$5,000 to US$15,000.

The competitive analysis gauged by the key success factors (KSF) are listed in Table 5. The key success factors are weighted according to the degree of impact on

rivalry. The weight number has a value of 10 for the highest, 5 for a moderate level and 0 for the lowest.

The scores represent the degree of competitiveness of each company in each category. The scores are given a value of 10 for the most competitive, 5 for moderate and 0 for the lowest. The total score is computed by multiplying a competitive score and weight in each KSF category.

Table 5: Competitive Analysis of WebAxle Rivals

KSF Criteria	Weight	Ektron CMS200 + eWebEditPro	WebAxle AutoWebBuilder Standard	WebAxle AutoWebBuilder Enterprise Customization	Graphically Speaking
Price	8	Fair (5)	Good (9)	Fair (5)	Poor (3)
Product	8	Good (9)	Fair – low (3)	Good (9)	Fair (5)
Customization	6	Fair (4)	Poor (2)	Good (9)	Good (10)
Marketing	7	Good (10)	Poor (1)	Poor (2)	Good (8)
Rivalry		**Strong (206)**	**Weak (115)**	**Fair (180)**	**Fair (180)**

From WebAxle's prospective, marketing is clearly a threat, for both the AutoWebBuilder Standard version and Enterprise version. Price is competitive for the Standard version, but the Enterprise version is comparable with the rival Ektron. Customization looks like an opportunity for AutoWebBuilder Enterprise Customization to add value. For WebAxle, a strategy that focuses on the opportunities and addresses the threats should be examined.

5. STRATEGIC OPTIONS

As Porter points out, "strategy is the creation of a unique and valuable position, involving a different set of activities... The essence of strategic positioning is to choose activities that are different from rivals'" (Porter, 1996). There are two ways to focus WebAxle's strategic options, product driven and market driven. Product focus is about the price, product quality, customization and revenue generation potential of the product itself. A marketing focus, on the other hand, would involve transforming the company to a market driven company which would include its products, market entry strategy, and services. Each strategy is analyzed below.

5.1 Product Driven

A business can achieve a higher rate of profit, or potential profit, over a rival in one of two ways:

- supplying an identical product and service at a lower cost *(cost-based advantage)*

- supplying a differentiated product and service in such a way that the customer is willing to pay a price premium that exceeds the cost of the differentiation *(differentiation-based advantage)*

These two sources of competitive superiority define fundamentally different approaches to business strategy.

However, competitive strategy is about being different. It means deliberately choosing a different set of activities to deliver a unique mix of value. In product driven

strategies, according to Portor, "variety-based positioning makes economic sense when a company can best produce particular products or services using distinctive sets of activities" (Porter, 1996).

The key success factors (KSF) associated with product driven strategy are price, product and customization. However, because the price is related to a cost based strategy, and product and customization are related to a differentiation strategy, it is not easy to achieve both at the same time.

WebAxle is currently a product driven company, trying to build the best product, and trying to sell it. WebAxle trusts their engineering knowledge and believes that by investing in their new ideas and products they will generate a positive return from those investments. It is taken on faith that *if you build it, they will come.*

Let us examine further to see how WebAxle can offer its products in the product driven strategy.

5.1.1 Standard Version

Low cost production focus is based on the key success factor of "price", and being competitive in fast delivery and the offering of low price products (lower than the current Standard version). This strategy requires a set of features available for the majority of the users and with no customization or very limited customization. Although not required, a low cost strategy typically involves a push marketing strategy in order to penetrate the market. However, any attempt at market penetration needs money to support the marketing activities. Some significant investment is required.

It is possible that a low cost production with a freeware approach could cut down marketing cost significantly or even largely eliminate the need for marketing. However, due to the nature of CMS based, database-driven website design software, some customization and service are most likely required by the majority of the users.

5.1.2 Enterprise Version

The Enterprise version provides a high quality product with value added customizations. This focus requires a set of features competitive with the major rivals and provides extensive customization to different users. Although not necessary, a highly differentiated strategy typically combines a pull marketing strategy, which means being a leader in the market, so customers will ask for the product by name. This strategy can avoid price competition from lower market segments and it can be achieved through broad based customization providing highly differentiated and reliable .NET solutions to customers who use technology to gain their own competitive advantages.

5.1.3 Strategic Alternative

Currently, WebAxle deploys two versions, as a mixed strategy. This strategy requires both the low cost and differentiation strategy components and extensive marketing. The current financial structure is built around this strategy.

The virtue of having the basic product, the Standard version, is to use it to up sell to the better and more customized product, the Enterprise version. It also gives the company something to fall back on if unable to make the Enterprise version sale.

WebAxle can offer the Standard version but there is no need to waste any more time developing it. WebAxle needs to put all its R&D efforts into continuously enhancing the Enterprise version.

5.2 Market Driven

A market driven company tries to find out what customers specifically want and build that so its strengths would likely need to be in marketing, R&D and customisation. Without an established customer base it will be difficult for WebAxle to have sustainable growth for years to come.

A market driven company is directed by customer needs. Customers' words become the rallying cry for every action taken. They are embraced by everyone in the company, not just those doing marketing. Every employee is challenged to turn the words of the customer into reality. Any activity not contributing to the customer's words is questioned. It takes more effort to operate using the words of the customer, but it leads to consistently exceeding customer expectations.

A market driven company treats product planning as a company-wide activity requiring constant teamwork and consensus from all functional groups. Team roles, responsibilities, and service level agreements are clearly established to govern the product planning team's interactions with the rest of the organization.

WebAxle currently is not market driven, but rather product or engineering driven. An engineering driven company is like an arrow shot from a bow. The arrow flies effortless and true, but requires considerable skill to launch and consistently hit the target.

On the other hand, a market driven company is like a guided missile. Although a missile is more complex, if it begins to drift, it is easy to make in-flight corrections.

Chapter 6 analyzes the current status of WebAxle and its internal capabilities. It identifies the gaps WebAxle may have in order to adapt to one of the strategic alternatives.

6. INTERNAL ANALYSIS AND GAP ASSESSMENT

The internal analysis section of this paper is divided into: management preferences, resources, and organization. From Chapter 5, two strategic alternatives have been developed. These two strategies are a product driven strategy and a market driven strategy. In order to select appropriate alternatives for an entry strategy, WebAxle must take its own capabilities into consideration. WebAxle must select and implement the chosen strategies within a relatively short timeframe because competitors can copy or pass WebAxle in functionality or market share. It is important that WebAxle position itself well in the market during the early stage of company development. The three categories of capabilities, namely management preferences, resources and organization, need to be examined in terms of whether they support the strategic choices.

6.1 Management Preference

6.1.1 Management Team

The management team of WebAxle consists of two people.

(1) Miles Yu is the founder and CEO of WebAxle.

Miles Yu is software technology expert and has led the architectural design of many innovative systems during his 12-year career. A strong background in R&D has helped him excel in the creation of innovative software solutions, manage university research projects, and lead professional services projects.

Prior to starting WebAxle, Mr. Yu founded a startup company, Wisdom Software Inc, and has been featured in the Vancouver Sun (May 17, 2001) as a successful entrepreneur in the local high tech industry.

Miles holds a Bachelor's degree from Dalian University of Technology in China and a Master of Computer Science from University of Osaka Prefecture in Japan. He is currently completing an Executive MBA at Simon Fraser University.

(2) Grant Cheeseman is a senior partner of WebAxle.

Mr. Cheeseman is energetic and focused, and brings 20 years of leadership, management and strategic planning experience in business sectors such as Sales Force Automation (SFA), Customer Relationship Management (CRM), telecommunications and billing platforms. His passion is to build businesses around new products and emerging technologies.

After starting his career in software development with CAPA Hospitality Solutions, he was involved in the restructuring of a Vancouver based telecommunications billing and customer care software (BACC) company. Grant was an integral part of the management team and led the creation of a new and innovative BACC product. He continued his management career and steered the product development creating new products in the areas of XML integration, web-based interfaces and service structure architecture. His efforts over six years benefited BACC company, leading up to the company's first profitable business model.

From the management team, we can identify that most of the management expertise is geared towards the product driven strategy. Mr. Yu first conceived of AutoWebBuilder in the computer science laboratories of Simon Fraser University in 2002. To lay the foundation of the spin-off company, he built the technology roadmap, established the software development process and led the software development team to

the commercialization and sales stages with AutoWebBuilder in 2003.

In order to enhance the marketing part of the product strategy, Mr. Yu is currently working on an MBA and gaining some marketing experience. Without significant resource changes, it is possible for the management team to spend some time on marketing. For example, Mr. Yu can devote a large percentage of time to marketing, leaving the product development to someone promoted from the developer team.

However, Mr. Yu has been very involved in coming up with the idea and has led the day-to-day operations in the development of the software. There may be strong pressures for Mr. Yu to continue in his current role. Mr. Yu may find himself facing a dilemma in which a change of position that makes sense in order for the strategy to work could result in substantial personal loss.

From a market driven point of view, Mr. Cheeseman may have the capability of acting on the market driven strategy. He seems to have relevant experience that could be applied to this strategic option. However, Mr. Cheeseman has not shown the willingness to take on the marketing part of the responsibility. This is presumably because he is not paid a salary or WebAxle is not attractive enough for him to give up his current full time job. Therefore, we need to find other ways to obtain marketing expertise, presumably at a low cost. This could be done through friends acting as consultants, a new marketing partner, or get help from institutions such as the Small Business Consulting Group, Industry Canada, etc.

6.1.2 Management Considerations

The developers are mostly University graduates with a degree in Computer Science. They are software developers with average 3 years of experience. However,

due to the fact that .NET itself is relatively new, some learning and training is constantly involved in the development process.

As pointed out in the previous section, WebAxle management is focused on R&D, customisation, but not on marketing. From the strategic options, it seems better suited for a product driven strategy than a market driven strategy. While the management is deeply aware of its needs to develop or bring in the expertise needed to grow the company, WebAxle is not capable of achieving this quickly. A strategic alliance is possible in some form with a company in Canada or the US as an alternative way to supplement the lack of marketing capabilities and to position the company in the market quickly. WebAxle could form a relationship with an ISP company and the ISP company could use the existing customer base to market WebAxle products.

Although the financial and management control of the company is not the only important factor in the business, management prefers not to give up organizational control to investors for short term financial help to improve the cash flow. Management, however, would consider giving up some control of the company if that could bring in the needed expertise to the organization. If we choose the market driven strategy, marketing capabilities are a must. Even the current product driven strategy needs significant improvements in marketing.

Management is ready to commit to pursuing the opportunity in the market as it firmly believes that the database-driven website design software market in North America will be saturated with small players in the near future. The .NET platform is what it believes to be continuously in demand in the growing pie of the Internet market. Management believes that the company must develop online markets in order to support

its future growth.

6.2 Organization

6.2.1 Company Structure

As a small startup company, WebAxle has a centralized structure. It currently has three developers along with the management team and marketing resources. However, being a technology company WebAxle uses networking and Internet communication extensively. So the geographic location does not present a problem for directors and employees to work from their home offices.

Figure 6 shows the WebAxle organization chart. This structure is geared towards product development and lacks marketing functions. Therefore, it will be a challenge for the market driven strategy if the company decides to go that way. Because the current structure does not have a marketing box, even for the product driven strategy, the marketing capability is in question. Therefore, there is a need to add a marketing function in order to adapt to either strategy.

Figure 6: WebAxle Organization Chart
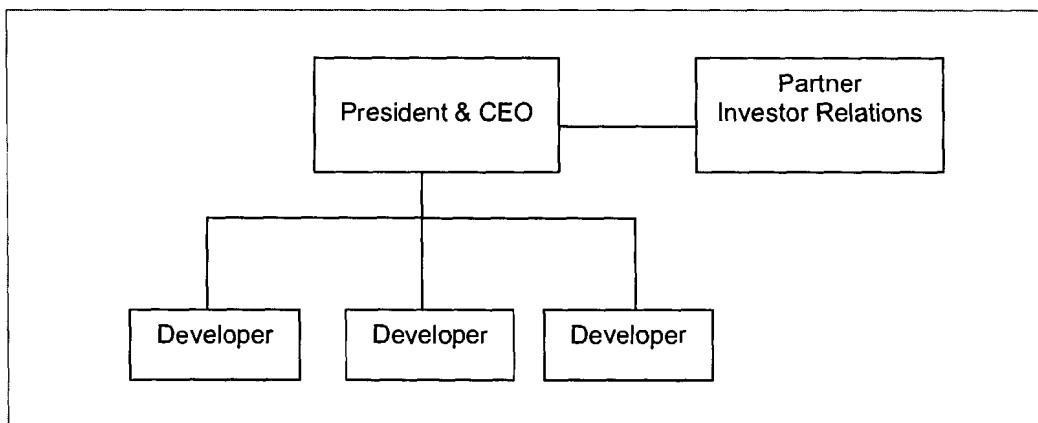
To be a marketing company we might need to alter the structure. For example, we might need a customer feedback information system which we do not have currently. In order to get that, we need to invest in this area and hire some marketing staff. On the other hand, a product driven strategy also needs marketing. If we do not get a full-blown marketing department, we can turn our developers into support technicians and interface with the customers directly. The customer engagement can be adapted to provide useful customer information to drive our product development.

6.2.2 Company Culture

WebAxle core values are listed below,

1. Commitment and dedication

2. Passion for technology and customers, with a "can do" attitude

3. Team loyalty, open minded and respectful of other team members

4. Self-critical and committed to team and personal improvements

5. Creativity and the pursuit of excellence

WebAxle has two goals set for its culture. First is to create a "positive spiral" for an organic growth environment. That is, employees enjoy coming to work, higher team spirit enables better productivity, products get improved and the customer base grows which in turn, generates more revenue. With higher revenue, more money is invested back into the products, company and employees. Second, as a learning and knowledge creation company, it is equally important that WebAxle contributes to individual professional growth, overall well-being of the team and the industry. Therefore, a "can do" attitude is the key to WebAxle culture. As a new venture, "we are not here to do a given job, we're here to achieve".

WebAxle's culture is R&D and teamwork focused. Customer focus and marketing is not listed as a priority. Even from the product strategy's point of view, customization requires customer input and frequent feedback to ensure customer satisfaction. This change must be considered in order to improve the current strategy.

6.2.3 System

Besides the infrastructure and information system outlined in Section 2.3.2(6), the following are some characteristics of WebAxle's day-to-day operations and the management style:

- Use our head in practical ways. Prioritize our time effectively.

- Agendas will be established for each meeting & coordinator will ensure agenda is completed on time.

- A weekly team meeting to discuss individual activities for the week, and issues affecting the whole team.

- Daily meeting (about 10 minutes)

From the company operations, the organization seems to be closely associated with product, R&D and customization, a product driven strategy. To become a market driven company, customer relations must take priority. Customer requirements become the agenda and all teamwork activities need to be undertaken with this in mind. The company system will be changed to easily interface with and communicate to the customers in an interactive feedback loop.

6.3 Resources – Financial

Because WebAxle's current strategy is product driven, an examination of the current WebAxle financial situation is needed to identify the issues related to the current

strategy, and to assess whether the financial resources could support some push in the direction of market driven-ness at the end of this section.

All internal financial figures are in Canadian dollars in this section.

6.3.1 Start-up Cost and Current Revenue Model

WebAxle 2002 startup costs were C$50,325, which was mostly invested by the founder. The startup breakdowns and financing are shown in the Appendix A and B. The capital structure has been very conservative from the day it was incorporated with a low debt to equity ratio (see Appendix D).

With the current product driven strategy, WebAxle's revenue is estimated to be brought in through two major business activities:

- The Standard version sales and upgrades

- The Enterprise version sales with customization services

These two parts are interconnected. When a customer needs to order a special component that is not in the pre-packaged version, WebAxle develops the component as part of professional services. After the component is developed, the new technology is transformed into a new component for the pre-packaged version.

6.3.2 Key Assumptions

The following is a description of WebAxle's three-tiered revenue model and an estimation of revenues generated in year 2004[1].

---

[1] Because WebAxle has not filed any financial statements since it was incorporated, the 2004 revenue is estimated.

(1) Standard Version Revenue

This consists of an initial product price to a business client. By assuming an average price of C$1,500 and by varying our monthly sales in different scenarios, the revenues are estimated in Table 6.

Table 6: Standard Version Revenue Estimate

Revenue Source #1: Standard Version Revenue			
Scenario	Best Case	Most Probable	Worst Case
Assumptions	• 2 in a month • Price = $1,500	• 1 in a month • Price = $1,500	• .5 in a month • Price = $1,500
Revenue	$36,000	$18,000	$9,000

E.g. Best Case: 2 x 12 (month) x 1,500 = 36,000

(2) Enterprise Version and Customization Revenue

The Enterprise version and required customization are for the customized solution development contracts. Because in the next phase, new features will be available that can be added to the phase to upsell and maximize revenue, frequent upgrades are preferred by WebAxle. A phased approach is taken to keep each phase short and manageable. An average customization project takes approximately two months to complete, including initial mockup, detailed user interface design, .NET programming, database customization and various testing.

In estimating the Enterprise version and customization services revenues, the assumption is to use the most probable case for a contract and develop the scenarios by varying the number of contracts per month.

Table 7: Enterprise Version and Customization Revenue Estimate

Revenue Source #2: Enterprise Version and Customization Revenue			
Scenario	Best Case	Most Probable	Worst Case
Assumptions	• 1 in a month • Price = $9,000	• .5 in a month • Price = $9,000	• .3 in a month • Price = $9,000
Revenue	$108,000	$54,000	$36,000

E.g. Best Case: 1 x 12 (month) x 9,000 = 108,000

(3) Support and Maintenance Revenue

Support contracts to the existing clients are considered to be another source of revenue. Due to the target customer segment being non-technical people, it is typical that the customer will purchase the support package. Support and maintenance package is 15% of the total development contract price.

Table 8: Support and Maintenance Revenue Estimate

Revenue Source #3: Support and Maintenance Revenue			
Scenario	Best case	Most Probable	Worst case
Assumptions	• Sum of above • Price = 15%	• Sum of above • Price = 15%	• Sum of above • Price = 15%
Revenue	$21,600	$10,800	$6,750

E.g. Best Case: (36,000 + 108,000) x 0.15 = 21,600

Adding up all our revenue sources, total revenues estimated in Table 9.

Table 9: Scenario Summary

Scenario	Revenue
Best Case	$165,600
Most Probable	**$82,800**
Worst Case	$51,750

6.3.3 Operating Budget and R&D Expenses

The costs in our business model can be divided into two categories, fixed costs and variable costs. Fixed costs include day-to-day operation overhead, R&D, and support technical operations. Variable costs are mainly marketing costs and contractor costs. Table 10 is a monthly break-down operating budget for year 2004, the first year of operation. The right common-size column identifies the percentage of each item (Friedlob, 2001).

6.3.4 Five Year Pro-forma (projected) Income and Expense Projection

As stated in Section 1.2, WebAxle's strategic intent is to achieve revenue over $300,000 and employ seven people in 2008. The main purpose of this analysis is to identify the major gaps between existing capabilities and what is necessary to achieve success.

Product cost is comprised of office administration cost and labor cost. A typical Enterprise project has several stages including: the definition of customer specifications, .NET and database programming, testing and implementation. Typical time spent on a project ranges between 20 and 30 experienced person days. A typical Standard version project does not include any programming activities. Thus, at the current level of staffing, 3 developers with a range of experience (counted as 2 experienced people), the company can take on at least 24 Enterprise version projects (2x12). 24 Enterprise projects could generate $216,000 in revenue (24x9,000), which is the 2008 revenue level if the company grows at a 40% rate. Thus, the current development staff can support the foreseeable

future revenue growth of the company. Maybe one extra developer is needed for supporting activities in production.

Therefore, in labor costs, marketing staffing becomes the most significant growth part of the company. Marketing staff is required to support the projected revenue growth. Given the competitiveness of AutoWebBuilder (Section 4.3), with required marketing activities which will be discussed in later chapters, one marketing staff to sell one Enterprise project per month would be a reasonable estimate (marketing strategies and techniques are discussed in detail later). To sell 24 Enterprise projects in 2008, 2 experienced marketing people are needed. At the average marketing staff wage of $40,000 to 50,000 per year, there will be about $100,000 additional wage and benefit costs. By taking your 2008 estimate and the current level which is about 96,000 per year, wages and benefits are expected to grow at 20% annually. Again, how to craft a product and marketing strategy is discussed further in later chapters.

However the current strategy does not have a marketing focus. Google advertisement spending is the major part of the advertisement and promotion cost, as outlined in Section 2.3.2(3). In the first two years, it is estimated that growth would be approximately 15%, and in the next three years, advertising and promotion should be increased beyond that of HR, at least 25%.

Because of the nature of web software development, the majority of office and administration cost is hardware cost. Hardware cost is falling consistently. For example, when a new person joins us, a new computer is provided. Given the same features and performance, the PC prices fall every month. The amount spent on hardware is about half of the HR growth rate. Also, as stated in Section 2.3.2(6), WebAxle has employed

networking to maximize the resource usage. On the other hand, office and administrative cost is independent of strategy, and it is management preference to keep the overhead growth to a minimum. Therefore, office and administrative cost is estimated to grow at 10% per annum.

Based on the above analysis and year 2004 operations, the growth rate of WebAxle can be supported at about 40% per year from year 2005 to 2008. The growth of the website building market (See Section 2.2) has seen a 43.8% increase per year from 1999 to 2004.

The summary of the five year pro-forma (projected) income and expense figures is given in Appendix C. Other line items are expected to grow at a minimal rate.

Table 10: WebAxle Operating Budget

2004 WebAxle Solutions Corp. Operating Budget

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total	Common-size
Office/Administrative														
Office equipment	50	50	50	50	50	50	50	50	50	50	50	50	600	0.5%
Software	100	100	100	100	100	100	100	100	100	100	100	100	1,200	0.9%
Computer equipment	100	100	100	100	100	100	100	100	100	100	100	100	1,200	0.9%
Office supplies	50	50	50	50	50	50	50	50	50	50	50	50	600	0.5%
Postage and delivery	20	20	20	20	20	20	20	20	20	20	20	20	240	0.2%
Telephone	150	150	150	150	150	150	150	150	150	150	150	150	1,800	1.4%
Long distance charge	50	50	50	50	50	50	50	50	50	50	50	50	600	0.5%
Networks and Internet	100	100	100	100	100	100	100	100	100	100	100	100	1,200	0.9%
Utility	50	50	50	50	50	50	50	50	50	50	50	50	600	0.5%
Repair and maintenance	50	50	50	50	50	50	50	50	50	50	50	50	600	0.5%
Rent	500	500	500	500	500	500	500	500	500	500	500	500	6,000	4.7%
Total Office/Administrative	1,220	1,220	1,220	1,220	1,220	1,220	1,220	1,220	1,220	1,220	1,220	1,220	14,640	11.5%
Education	500	500	500	500	500	500	500	500	500	500	500	500	6,000	4.7%
Advertising and promotion	300	300	300	300	300	300	300	300	300	300	300	300	3,600	2.8%
Credit card and bank charges	30	30	30	30	30	30	30	30	30	30	30	30	360	0.3%
Interest payment	75	75	75	75	75	75	75	75	75	75	75	75	900	0.7%
Legal	50	50	50	50	50	50	50	50	50	50	50	50	600	0.5%
Insurance	20	20	20	20	20	20	20	20	20	20	20	20	240	0.2%
Meals and entertainment	100	100	100	100	100	100	100	100	100	100	100	100	1,200	0.9%
Travel	150	150	150	150	150	150	150	150	150	150	150	150	1,800	1.4%
Auto Reimbursement	150	150	150	150	150	150	150	150	150	150	150	150	1,800	1.4%
Wages and benefits	8,000	8,000	8,000	8,000	8,000	8,000	8,000	8,000	8,000	8,000	8,000	8,000	96,000	75.5%
Total Operating Budget	10,595	10,595	10,595	10,595	10,595	10,595	10,595	10,595	10,595	10,595	10,595	10,595	127,140	

6.3.5 Break-Even Analysis

The break-even analysis is based on the forecasted revenue and costs required to provide services. The result of this analysis offers general insight regarding the funds it needs to raise each year. The break-even point, where two lines cross in Figure 7, is identified in the end of year 2006.

Figure 7: Break-even Analysis Chart

(E) – Estimate, (F) – Forecast
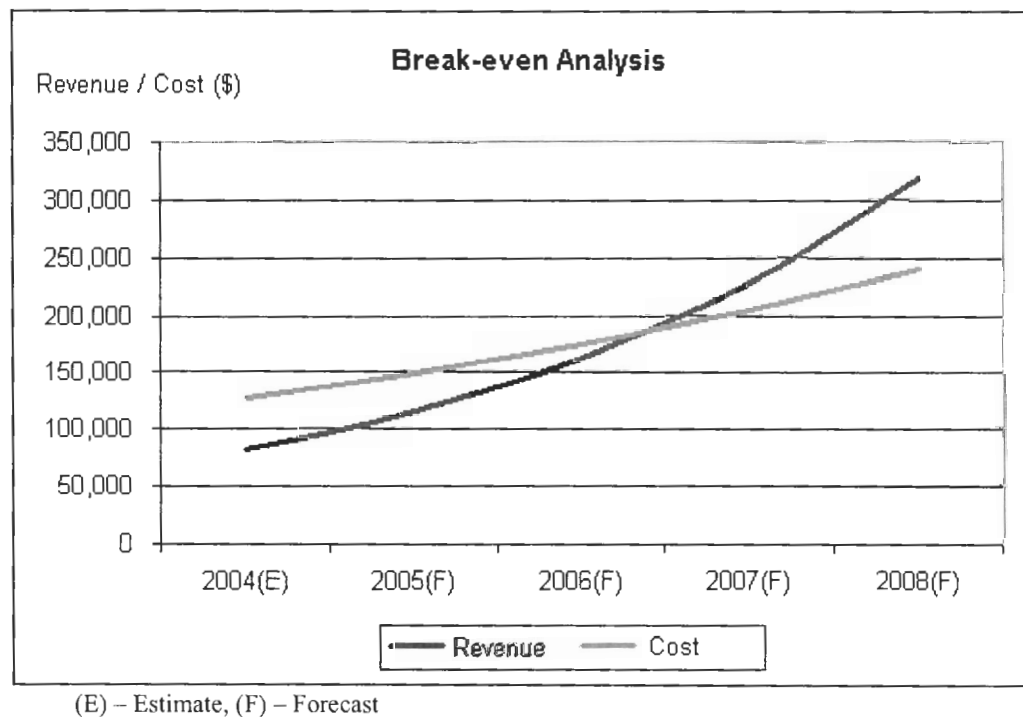
6.3.6 Cash Flow Analysis & Wealth Creation

Cash flow analysis is an important aspect of our ongoing business operations. The Free Cash Flow (FCF) analysis is used to identify how much cash is generated as well as any shortage that needs to be covered in the current scenario.

The main reason for working capital is to ensure that WebAxle does not run out of cash. There must be adequate working capital to run the business and ensure a positive

cash flow. It is assumed that accounts receivables will be collected in 30 days and accounts payable will also be paid within 30 days. Therefore, the cash inflows and outflows will balance with the exception of the first month.

To account for un-anticipated cost such as machine breakdowns, and for any errors, a contingency of 5% of the total cost is added as ongoing maintenance capital expenditure.

Thus, to identify how much funding is required to support the operation, the 5 year Free Cash Flow (FCF) forecast is summarized in Table 11.

Table 11: Free Cash Flow Forecast

2004 - 2008 Free Cash Flow Forecast							
	2003	2004(E)	2005(F)	2006(F)	2007(F)	2008(F)	
Total Revenue		82,800	115,920	162,288	227,203	318,084	
Total Costs		127,140	150,191	175,352	206,776	244,266	
EBITDA		(44,340)	(34,271)	(13,064)	20,427	73,818	
CCA		0	0	0	0	0	
Δ TC + Δ Cap. Exp.		6,357	7,510	8,768	10,339	12,213	
Free Cash Flow	(50,900)	(42,884)	(35,742)	(19,529)	6,489	48,598	323,989
Payback	(50,900)	(93,784)	(129,527)	(149,056)	(142,567)	(93,969)	

In addition to the startup funding of $50,900, the total capital required is $98,156 in order to meet the negative cash flow ($42,884+$35,742+$19,529). Suppose from year 2009 onward, the Free Cash Flow stays at the same level as that of year 2008, and the company continues to operate indefinitely, the present value of FCF in year 2009 is

$$FCF_{2009} = 48,598/\ 15\% = \$323,989$$

where 15% is the market capitalization rate (MCR) 6% plus a high 9% risk premium (Blazenko, 1998). Thus, the net present value (NPV) of WebAxle is $156,845 at the market capitalization rate of 6%. The internal rate of return (IRR) is 22%.

In summary, from the current business model forecasts, there is an additional $98,156 that needs to be raised, however the NPV is estimated at $130,290 and IRR is about 22%. This picture is attractive to many investors. However, it still poses challenges in today's investment community.

6.3.7 Financial Resource Considerations

With the product driven strategy, WebAxle is currently losing $44,340 (Appendix C). This is based on revenue of $82,800 in 2004. So far, the company has been financed to operate as a startup, and the founder has invested $35,900 (Appendix B) to conduct market studies and form a team to build the first version of the product, and $15,000 is from a personal investor.

With the current financial structure with the current product driven strategy, it requires additional funding of $98,156 from year 2004 to 2006. From the income statements and cash flow analysis, the exact details of the amounts of money required can be identified.

After examining financial markets and the terms on which the company can raise capital, a bank loan at market capitalization rate can be considered. The assumption is made that this will be paid back in five years when cash flow becomes positive (Higgins, 2004). The prime rate at this time is 4.75%. The borrowing rate is assumed to be 6% given that collateral is required to have some security such as a personal guarantee.

With the current product driven strategy, WebAxle's ability to expand business

will be severely undermined if it can not generate the cash flow to finance sales. The company could find solutions to deal with this issue through a business arrangement with a financial institution such as a loan. However, under the current capital supplier conditions outlined in the Section 3.3.1, this may not be feasible.

On the other hand, to adopt a market driven strategy, additional marketing resources are needed. If marketing staff is added to the company, an additional $3,000 per month is added to the wage expenses. This is a 37.5% increase from the current expenses level in wages. Consequently, the payback period and FCF will be in a worse situation.

WebAxle needs some marketing functionality even in the current product driven strategy. Without significant resource changes, one possible solution is that the management team spend more time on marketing. For example, the CEO can devote a large percentage of time to marketing, leaving the product development to someone promoted from the developers.

6.4 Human Resources

It is clear from day one that WebAxle is a knowledge based company. Creating a learning institution where innovation and creative thinking is encouraged in order to optimize the creation of both tacit and explicit knowledge is essential. WebAxle's intention is to create knowledge-rich environments and knowledge-rich interactions to promote the conduct of technology and this has a profound impact on company's culture and strategy.

As a University research spin-off, WebAxle is located right across from the university computer labs. WebAxle has a strong root in R&D and keeps track of the latest

technology. AutoWebBuilder, WebAxle's flagship product, is a brand new design on the Microsoft .NET platform. WebAxle's focus on .NET and database technology is attractive to new university graduates.

WebAxle has a careful and extensive interview process to select skilled individuals. The interview goal is to find people that fit well with the company culture (Section 6.2.2). The skill set we are looking for is not only technical. The candidate has to have a willingness to learn and want to play an active role in the company. On top of resume screening, the interview process consists of a written technical test, creative thinking questions, a presentation and a customer relation skills test. WebAxle's job postings are mostly run on local university boards. People who are willing to learn and play an active role will have a chance to visit WebAxle and talk to the CEO face to face. As analyzed in Section 3.3.2, the current job market has less of a skilled labor shortage than it did in the dotcom era.

WebAxle also provides a reward mechanism to attract the individual who learns and performs well by assigning more important tasks on a project. At WebAxle, individual performance is measured by the three *E*s:

- Effective – "Get the job done well", making productive contributions through talent, knowledge, skills and a good attitude.

- Efficient – "Excellent team", working efficiently with others and driving the team toward the efficient pursuit of predetermined objectives.

- Evolution to Revolution – "Best creative practice", catalyzing commitment to and vigorous pursuit of the best practice with a clear and compelling vision, from buildup to breakthrough.

WebAxle has three developers currently. In managing the tacit and explicit knowledge, the company encourages all members to interact internally and externally in order to identify and share in both tacit and explicit knowledge. Many people in the software industry tend to work within silos of information with limited information sharing. WebAxle is a "boundary-less" organization. Many informal meetings are held weekly in which people can discuss face-to-face and brainstorm, especially at design meetings during the early stages of a project. In brainstorming meetings, what ideas are presented and how they are debated are recorded. We also review what happened previously in similar cases and what can be done better this time with new knowledge. This is particularly important as a means of transferring tacit knowledge to explicit knowledge.

Through proper management, knowledge from an individual is converted into explicit knowledge which can be used to enhance many others in the company. Besides the "best practice" guidelines, we go through a code review process periodically for members to cement their learning. This practice is called "extreme programming" where two people sit side-by-side in front of the screen and walk through the same piece of code, discussing and programming together. This practice with a newcomer and an experienced developer is highly effective in converting tacit knowledge to explicit knowledge and in aiding knowledge transfer.

Although the wages and benefits are not top in the industry, staff turnover is below the industry average. Most importantly, since knowledge is captured, WebAxle has not experienced major hiccups when an employee leaves the company. It has not created any significant constraint on the company's ability to operate.

From the human resources point of view with regards to the two alternative strategies, WebAxle is a product driven company without clear reference to the needs of market. WebAxle lacks the necessary human resources to handle sales and marketing as well as financial management. WebAxle has a dedicated team of developers which is led by the only person in the company with project management expertise who also happens to be the general manager who handles all aspects of the administration. The partner performs more or less the function of an adviser.

The key functions of developing sales and marketing are not well attended to. Marketing is a critical weakness. Marketing is an important key success factor in all the strategic alternatives. It requires dedicated staff and specific talents, as identified in the strategic options, to handle a wide range of marketing and sales activities. Language and business cultural understanding are particularly important in relationship building. However, WebAxle currently lacks the resources and the expertise to fill this position.

6.5 Strength & Weakness Analysis

Figure 8 is the WebAxle strength and weakness analysis chart. From the analysis, we can see the strongest part of WebAxle is its people with a loyal team and skilled labor, and customer satisfaction levels and strong reputation. The weakness is in not having adequate marketing resources, financial resources and a relatively small customer base.

Figure 8: WebAxle Strength and Weakness Analysis

		Weakness			Neutral	Strength		
		Very 1	Somewhat 2	A little 3	4	A little 5	Somewhat 6	Very 7
People	Adequate	X						
	Skilled							X
	Loyal							X
	Service minded						X	
Money	Adequate		X					
	Flexible		X					
Facilities (web)	Adequate					X		
	Flexible						X	
	Location				X			
Systems	Information						X	
	Planning				X			
	Control						X	
Market assets	Client base		X					
	Reputation					X		

6.6 Evaluation Summary

Table 12 presents a matrix in which each selected strategic option is examined in each category. These combinations are simultaneously evaluated in terms of how they meet the resource capabilities, marketing and management preferences. The results of the analysis indicate the degree in which WebAxle could close the gaps of the missing capabilities in order to succeed in the market.

Each category, such as organizational capabilities, marketing and management preference, is weighted according to the degree of impact it has on the selection of the choices. The weight number is given a value of 10 for the highest, 5 for moderate and 0 for the lowest.

The scores represent the degree of matching capabilities that WebAxle has in each category. The scores are given a value of 10 for the perfect match, 5 for moderate and 0

for the completely lacking. The total score is computed by multiplying a strategy score and weight in each category.

Table 12: The Strategic Choice Evaluation Score Matrix

Category	Weight	Product Driven Strategy	Market Drive Strategy
Organization	4	6	5
Financial Resource	8	2	2
Human Resource	7	5	7
Marketing	9	2	1
Management Preference	8	7	3
Total Score		**149**	**118**

In summary, while each strategic option has pros and cons to satisfy the key success factors, the options are characterized by several missing gaps. The missing capabilities of WebAxle in realizing its goal to succeed in the CMS product based, database-driven website design software market are two-fold. Firstly, the company lacks the marketing capabilities. Secondly, the company lacks the financial resources to sufficiently allocate cash flow in fulfilling potential orders from the market. Both the organization and the management, however, are flexible enough to adjust to fill the capability gaps between what is required and what it currently has.

The practical way for WebAxle to choose the smallest gaps of its missing capabilities is to go with the "product driven" strategy, which is the current strategy. However, significant changes are required for WebAxle to be successful in this industry. The following chapter will present some recommendations and an action plan.

7. RECOMMENDATIONS AND ACTION PLAN

As discussed in Chapter 5, a product driven strategy requires the company to focus all its efforts on selling more of a particular product to as many customers as possible. A market driven strategy means that the company develops products or services required to satisfy a particular customer.

WebAxle's strategy involves both types of strategy. WebAxle has a standard product for sale which is in demand in the market. WebAxle also offers customization to meet the requirements of particular customers.

Some major changes are required for WebAxle to succeed in the CMS product based, database-driven website design software industry. Essentially, we have identified that the product driven strategy has less gap between what WebAxle has and what is required, and strongly recommend the company enhance the current strategy. WebAxle should look closely at the market driven strategy and implement some functionalities needed for the market driven strategy to fill the gap and improve the current product driven strategy.

It is recommended that WebAxle build action plans based on the following strategic considerations.

7.1 Product Strategy

WebAxle has two products, the AutoWebBuilder Standard and Enterprise versions. Currently, WebAxle deploys a mixed strategy. This strategy requires both the low cost and differentiation strategy components and extensive marketing.

Competitively, WebAxle needs to be very cost effective in delivering on the standard product side (Standard Version) as it is more of a commodity while the market driven side (Enterprise Version) will need to be able to generate real value for the extra charge.

Our recommendation is that WebAxle offers the Standard version but does not waste any more time developing it. WebAxle needs to put all its R&D efforts and other resources into continuously enhancing the Enterprise version.

As the Enterprise version takes the center stage, WebAxle needs to emphasize product differentiation based on quality and customization services, and avoid competing with low price substitutes. WebAxle needs to evaluate product features with new aspects. To evaluate whether features have value or not, the following will be considered:

- customer is willing to directly pay for it
- customer is willing to indirectly pay for it
- customer is not willing to pay for it.

To evaluate the scope of features, they will be assessed using the following check list:

- makes people more productive
- makes the process more productive
- makes the tools more productive
- makes no one more productive.

Each aspect of a feature is prioritized based on customer gap analysis, both individually and in various feature combinations, to determine what produces the highest customer value with the lowest risk. Understanding the features' priorities and risks before

development helps focus projects on the high risk areas first. And if a project does fall behind schedule, prioritization helps identify which features are candidates to drop.

In addition, the new product strategy should consider branding and be service oriented. In other words, WebAxle would build a strong brand name with customer testimonials in customization quality and service, and focus on providing customer value to serve them in a way that becomes their Web IT department.

7.2 Customer Focus – Generate Customer Value

WebAxle must focus on customer relations and shift from acquiring customers to acquiring and retaining customers. WebAxle must maintain the low cost of the generic features in the product and increase gross margins by adding value in the customization and services. It needs to forge a better customer relations function in order to achieve customer retention. This can be achieved by focusing on the following:

- Involvement of top management.

  As a customer-driven organization, top executives need to have regular and meaningful one-on-one contact with customers.

- Increasing "customer value" with excellent customization and pre and post sales services.

7.3 Marketing Strategy

WebAxle should adapt and enhance a targeted marketing approach and focus on a specific market segment, the low-end CMS based, database-driven website design software market.

Due to the limited budget, the following can be considered,

- Online media relation campaign

WebAxle can have news releases to online publishers, run interviews and message boards.

- Targeted online marketing

  WebAxle needs to focus on the right market segment, small business owners in North America, and find associations such as chambers of commerce and some affiliate online marketing companies to start low cost advertisement or link exchange programs.

- Email spamming

  As a low-cost mass marketing tool, e-mail spamming can reach tens of thousands of e-mail addresses. Coupled with the fact that the sender does not pay extra to send e-mail, it has resulted in the current explosive growth of spamming. It is an excellent tool to build awareness.

- Making sure WebAxle comes up in top ten on major search engines, such as Google and Yahoo

- Narrow the target on pay-per-click keyword advertisement on the search engines such as Google.

7.4 Financial Needs

WebAxle has to seek funding to support current operations and expand the infrastructure. To achieve the strategic intent (Section 1.2), WebAxle has to overcome the challenges and grow to the break-even point by year 2006.

Although the capital market is taking a very conservative approach on Internet companies, it is not impossible to raise early stage funds. WebAxle has to become an investment grade company. It needs to show the investors the growth in the industry in

the next 5 years and that WebAxle is in an attractive position to eliminate the pain that online business owners have. And, WebAxle will have product features attractive to seasoned investors experienced in the technology field.

On the other hand, WebAxle could seek a strategic alliance partner in the industry, or find a company seeking to get in the CMS product based, database-driven website design software industry. The partner should be engaged in the software industry and capable of providing financial needs for WebAxle.

7.5 Action Plans

It is further recommended that WebAxle consider the following action plans with priority:

1. Build the management team, including board of directors, with relevant experience, proven tack record and well connected industry veterans to show the investors and customers that WebAxle has what it takes to become a front-runner in this industry.

2. Seek external funding to support day-to-day operations until the break-even point is reached.

3. Find marketing expertise either from an external professional or from a marketing alliance partner.

4. Re-name or re-brand the Enterprise version of AutoWebBuilder to focus on customization and services. Restructure company resources to accommodate this change.

5. Build existing customer relations with top management involvement.

7.6 Future Considerations

WebAxle has an innovative product that targets a new, growing market. It is assumed that the market will respond, and grow quickly in the next 5 years. Ideally, WebAxle will continue to expand in the next 10 years. At that time, it should have the possibility of going public, merging, or being acquired by a larger Internet software company.

It is highly probable that large aggregators of information will try and enter this rather lucrative market. It is believed that with focus on its target market, WebAxle will be able to create a competitive advantage that will also prove effective against large providers. In this context, it is entirely conceivable that WebAxle might enter cooperative agreements with national Internet providers, as it would allow them to better tailor their value proposition to their needs.

APPENDICES

Appendix A: Startup Budget

Startup Requirements		
Start-up Expenses		Common-size
Legal	$1,000	2%
Stationery etc.	$500	1%
Brochures/materials	$1,000	2%
Equipment (PCs, Printer)	$5,000	10%
Office equipment/Party/Event Expenses	$2,500	5%
Rent	$3,000	6%
Software	$2,900	6%
Contractors	$12,000	24%
President Time	$20,000	40%
Other	$0	0%
Total Start-up Expenses	**$47,900**	**95%**
Start-up Assets Needed		
Current Assets		
Cash Balance on Starting Date	$2,000	4%
Other Current Assets	$0	0%
Total Current Assets	**$2,000**	**4%**
Long-term Assets	**$425**	**1%**
Total Start-up Assets Needed	**$2,425**	**5%**
Total Requirements	**$50,325**	**100%**

Appendix B: Startup Funding

Startup Funding		
Investment		Common-size
Software	$2,900	6%
President Donated Time	$20,000	39%
Equipment	$5,000	10%
Volunteer Donations	$2,000	4%
Required Fundraising	$6,000	12%
Total Investment	**$35,900**	**71%**
Liabilities		0%
Current Liabilities		
Accounts Payable	$0	0%
Current Borrowing	$15,000	29%
Other Current Liabilities	$0	0%
Total Current Liabilities	**$15,000**	**29%**
Long-term Liabilities	**$0**	**0%**
Total Liabilities	**$15,000**	**29%**
Total Funding	**$50,900**	**100%**

Appendix C: Five Year Pro-forma (projected) Income Statement

E: Estimate; F: Forecast

WebAxle Solutions Corp. Income Statement (Forecast)						
	2004(E)	2005(F)	2006(F)	2007(F)	2008(F)	Growth rate
REVENUES						
Product Revenue	18,000	25,200	35,280	49,392	69,149	40.0%
Services Revenue	54,000	75,600	105,840	148,176	207,446	40.0%
Support Revenue	10,800	15,120	21,168	29,635	41,489	40.0%
Total Revenue	**82,800**	**115,920**	**162,288**	**227,203**	**318,084**	40.0%
COSTS						
Total Office/Administrative	14,640	16,104	17,714	19,486	21,434	10.0%
Education	6,000	6,300	6,615	6,946	7,293	5.0%
Advertising and promotion	3,600	4,140	5,175	6,469	8,086	
Credit card and bank charges	360	378	397	417	438	5.0%
Interest payment	900	945	992	1,042	1,094	5.0%
Legal	600	630	662	695	729	5.0%
Insurance	240	252	265	278	292	5.0%
Meals and entertainment	1,200	1,260	1,323	1,389	1,459	5.0%
Travel	1,800	1,890	1,985	2,084	2,188	5.0%
Auto Reimbursement	1,800	1,890	1,985	2,084	2,188	5.0%
Wages and benefits	96,000	115,200	138,240	165,888	199,066	20.0%
Total Costs	**127,140**	**150,191**	**175,352**	**206,776**	**244,266**	
EBIT	**(44,340)**	**(34,271)**	**(13,064)**	**20,427**	**73,818**	
Taxes	0	0	0	3,599	13,007	
Net Income	**(44,340)**	**(34,271)**	**(13,064)**	**16,828**	**60,812**	

Appendix D: Balance Sheet (projected)

	2003 (startup)	2004(E)	2005(F)	2006(F)	2007(F)	2008(F)
WebAxle Solutions						
Balance Sheet on June 30 (Forecast)						
Current Assets						
Cash	10,000	5,000	5,000	5,000	5,000	5,000
Accounts Receivable	0	0	0	0	0	0
Inventory	10,000	5,000	5,000	5,000	5,000	5,000
Prepaid Expenses	0	0	0	0	0	0
Other Current	20,000	14,000	12,900	11,690	10,359	8,895
	40,000	24,000	22,900	21,690	20,359	18,895
Net Fixed Assets	10,000	11,000	12,100	13,310	14,641	16,105
TOTAL	**50,000**	**35,000**	**35,000**	**35,000**	**35,000**	**35,000**
Current Liabilities						
Loan payable	15,000	0	0	0	0	0
Accounts Payable		0	0	0	0	0
Other Current		0	0	0	0	0
	15,000	0	0	0	0	0
Long-Term Debt	0	44,340	78,611	91,675	74,847	14,035
Shareholder's Equity						
Share Capital	35,000	35,000	35,000	35,000	35,000	35,000
Retained earnings	0	(44,340)	(78,611)	(91,675)	(74,847)	(14,035)
	35,000	(9,340)	(43,611)	(56,675)	(39,847)	20,965
TOTAL	**50,000**	**35,000**	**35,000**	**35,000**	**35,000**	**35,000**

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