

STRATEGIC ANALYSIS OF A SMALL INFORMATION TECHNOLOGY MANAGEMENT CONSULTING COMPANY

by

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ABSTRACT

Perceptron Technology Inc., an IT Management Consulting and Services company, provides consulting services to small corporate businesses. The B.C. small corporate market is a very attractive market to enter with 359,600 small companies and growing by >13,000 a year. Any company competing in this market has one critical success factor; highly skilled professionals with the specialized knowledge required to implement and maintain sophisticated business infrastructure and application solutions. A niche focused differentiation strategy is used because this service is perceived as unique. This strategy can be sustained and a competitive advantage can be obtained with core competencies in project management and in technical resource management. To achieve this, the company needs a capital infusion to grow, recruit and compensate highly skilled personnel and change the business model from a time and materials model to a fixed price long-term contracts model.

DEDICATION

To the memory of my business mentor and my leadership guide who saw inside me, taught me what to do and how to be the best I could be.

To my wife Joyce whose sacrifice, patience and support enabled me to complete the EMBA program.

To my son Gregory who slept on my lap as I worked late into the night because he missed his Daddy.

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1 INTRODUCTION

1.1 Perceptron Technology Inc.

Perceptron Technology Inc. (PTI) is an Information Technology Management Consulting and Services company providing information technology management consulting services and information technology products targeting Small Corporate businesses (2 to 50 users) and Small Office Home Office (SOHO) businesses (1 to 2 users). This mix of products and services includes the implementation and maintenance of a standard, integrated, state-of-the-art wire-less or wire-line data communications information technology infrastructure packaged with a technically advanced high speed server infrastructure consisting of high performance hardware and a highly customizable package of fundamental business application software.

1.2 Information Technology Industry

In the Information Technology industry today, there is a much greater awareness than ever before of the need for an integrated, state-of-the-art information technology infrastructure with highly effective business application software to power the business processes of small companies. At today's breakneck pace of business, small companies need better ways to run their business without worrying about the needed information technology infrastructure and business application software to support their business process.

In general the Information Technology industry has expanded rapidly in the last 30 years and growth is expected to continue at a very strong pace for the foreseeable future. Over this period large businesses have implemented the aforementioned information technology infrastructure and business application software with the help of a few very large management

consulting and service companies. Small businesses, on the other hand, have not had the resources to implement all the needed information technology infrastructure and business application software they now need to survive in the cut-throat business style of today. As well, large management consulting and services companies do not deal with these small business personnel as there is no profit in it for them to handle small customers. This has caused the Small Corporate and Small Office Home Office (SOHO) market to be largely ignored by these large management consulting and service companies resulting in many small businesses trying to implement their own information technology infrastructure and fundamental business applications by themselves.

As the general information technology industry has matured, the prices of the products produced by the software and hardware leaders has plummeted (i.e. Microsoft, Intel). This has allowed many small businesses to implement the same mission critical information technology infrastructure and fundamental business software server applications as large businesses. There are now many complementary products and services available to small companies allowing them to specialize beyond the fundamental requirements needed to run their businesses successfully.

1.3 Small Corporate Information Technology Market

Perceptron Technology is encountering a large number of small companies that want to implement this information technology infrastructure and are looking for a company that will help them setup and maintain the needed infrastructure. The specialized knowledge required to implement and maintain the information technology infrastructure and business application solutions is very scarce. Even if companies are able to implement the solutions by themselves, maintaining the solutions is even harder without someone with the required skill set.

Without the ability to implement or maintain this sophisticated infrastructure, they depend on many independent consultants and contractors from many different industries to

provide the service and support required to achieve their corporate goals. This costs them tremendous amounts of money and time, and usually provides sub par results. Therefore, many small businesses have been slow to adopt the necessary information technology infrastructure and fundamental business software applications to enable them to expand their businesses. Perceptron Technology provides the specialized knowledge to customers that do not need or want to understand information technology but require it to succeed in today's breakneck pace of business. However, they must be willing to pay for the services.

1.4 Hourly Billing Rates within the Information Technology Industry

The 2005 IT Compensation Study from JANCO Associates, Inc. reflects the high salaries commanded in the information technology environment by Microsoft Certified System Engineer's (MCSE). A MCSE expects an average compensation package of \$91,000.00 US or \$109,000 CAN and a Technical Manager expects a compensation package in excess of \$143,000.00 US or \$172,000 CAN (Janco, 2005). Very few small businesses can afford these costs to implement and support the needed business infrastructure.

Perceptron Technology provides the information technology professionals to small businesses at billing rates that are comprised of several components: a standard compensation package for the information technology associate and a 25 – 75% risk premium charge for undertaking a temporary contract. A further 10% risk premium is added for the Technical Manager responsible for the MCSE. This risk premium is very dependant on the length of the contract with long term contracts being about 6 months in duration or 2 weeks per month per year for a 35% risk premium mark-up in compensation, divided by 1550 work hours per year, 2067 hours (Stats Canada) less 25% for holidays and other benefits, resulting in an hourly billing rate of ~\$95.00 CAN for an MCSE with a 6 month contract. The strictly hourly billing contracts with customers with no set minimum incur a higher risk premium of 85% which is more appropriate

and results in an hourly billing rate of ~\$130.00. For a Manager of Technical Services the rate increases dramatically, an hourly billing rate of ~\$205.00 is appropriate. There are many small business customers that can not or will not pay these hourly rates and these customers will continue to try and muddle through themselves.

1.5 Small Corporate Information Technology Market Growth

According to survey data from the May 2005 CRN Monthly Channel Research Report, forty-four percent of small businesses (those with under 100 personnel) expect to increase their technology budgets over the next 12 months. In addition, businesses planning to boost spending were likely to make significant investments in new technology. More than half of these companies planned to increase spending by more than 15 percent over the next 12 months. Sixty-two percent of these companies were either “extremely” or “strongly” committed to actually carrying out these planned increases in spending (CRN, 2005). The Bank of Montreal predicts this trend will accelerate, with the computer-products industry being the fastest-growing sector through this and the next two years, although the recovery will fall far short of the hot expansion of the late 1990’s (Computer sector, 2004).

The Canadian economy is expected to expand by 3.5 per cent in the year 2005 then by 3.3 per cent in 2006 and beyond. The computer products sector will have an average annual expansion of 7.6 per cent; more than double the economy (Computer sector, 2004). This expected growth creates tremendous opportunities for Perceptron Technology and it will expand to take advantage of this growth in the computer-products sector. Now that Information Technology Infrastructure has become “mission critical” not just for large scale businesses, but for small businesses, including small office home office businesses (SOHO); as well, sales and support in these areas is exploding.

1.6 Corporate Strategy

The Small Corporate Information Technology market (SCIT) in B.C. is a market consisting of a very large number of small companies, 359,600 (Government of BC, 2005). The goal of Perceptron Technology Inc is to become established as the leading Business Services Information Technology Management Consulting and Service Provider in the Small Corporate Information Technology market within the general Information Technology Industry. Perceptron Technology focuses on an Information Technology (IT) management consulting services niche with a focused differentiation strategy providing an aggregate of Information Technology management consulting services and products consisting of a standard, integrated, state-of-the-art wire-less / wire-line data communications information technology infrastructure packaged with a technically advanced high speed server infrastructure consisting of high performance hardware and a highly customizable package of fundamental business application software.

The products are common within the information technology industry with very little price differentiation between suppliers. As all competitors have access to the same suppliers and receive the same products, Perceptron Technology does not sell hardware or software directly but is aligned with major partners for all products. All customers are introduced to the major partners and purchase all needed hardware and software on Perceptron Technology's recommendation directly from these major partners. Perceptron Technology's value added is in the integration of these standard products and services.

This differentiation strategy provides the customers with third tier pricing, the major partner an incremental sale of all hardware and software without marketing expenditure, and no need for Perceptron Technology to carry inventory in a fast changing product life cycle. The Business Services Value Chain depends entirely on customer loyalty by providing Perceptron Technology's customers with the best service and support on products being implemented and new products in the pipe line from major industry partners such as Microsoft and Intel.

Perceptron Technology's customers feel they are getting the best products for an exceptional price along with exceptional service and support allowing them to utilize Perceptron Technology as their internal information technology department.

1.7 Corporate Business Model

Perceptron Technology's Business model is time and materials. This time and materials business model has been used traditionally in infrastructure implementation projects. Typically, this model is implemented in two ways, one in which the customer is responsible for project management, or Perceptron Technology's tiger teams are responsible for the project management. Irrespective, the project is billed by the number of hours spent on the project by the resources committed to the project. This model is efficient when the scope of the project is vague or if there is high risk of scope creep. All the infrastructure implementation projects and maintenance projects are executed in this model, by default. If the project is executed on the customer's site, then the customer is responsible for the time management but as most small businesses do not have the expertise or specialized knowledge to implement the business infrastructure, Perceptron Technology is responsible for the project management.

1.8 The Geographic Target Market

Perceptron Technology is concentrating in the mainland/southwest geographic area initially. This area contains 56% (201,376) of all businesses within the province of British Columbia and is a substantial target market. Expansion in the future will be into the Vancouver Island/Coast geographic market with 19% (68,324) of all business within the province of British Columbia. These two geographic markets contain together 78% (280,488) of the businesses in the province of British Columbia with a positive annual growth rate of between 3% to 4% or 900 new companies (Government of BC, 2005).

2 INDUSTRY ANALYSIS

This industry analysis looks at the change-producing forces in the information technology industry using a five forces model adapted from Ed Bukszar Class Notes, January 2005 and Porter, M., Competitive Strategy 1980. This model, diagrammed in Figure 2-1 - Small Business Information Technology Industry Structure, is used to categorize and analyze the five competitive forces that shape the information technology industry and identify the sources of competitive advantage.

2.1 Information Technology Industry Analysis

To complete the analysis, the following information was used:

- Primary Product Offering:
 - Information Technology Management Consulting
 - Information Technology Implementation and Support services for Microsoft based information technology infrastructure
- Secondary Product Offerings:
 - Microsoft Windows information technology infrastructure hardware (Server, Firewall, Workstations) Sales
 - Microsoft Windows based business application software (Server, Workstation, E-mail, VPN, Web, CRM) Sales
- Competitors:

- Independent consultants
- Small scale consulting companies
- Large scale consulting companies (IBM, HP/Compaq)
- Retail stores (London Drugs, Future Shop, Staples, Office Depot, Best Buy)
- Suppliers:
 - Independent consultants
 - Distributors of hardware and software
- Buyers:
 - Small Corporate Business (3–50 personnel)
 - Small Office Home Office (SOHO) Business (1-2 personnel)
- Potential Substitutes:
 - In-house information technology department
 - Outsourcing of information technology

For the purposes of this industry analysis, we will only investigate the B.C. provincial local scope, as this is the main target market for Perceptron Technology Inc. (Perceptron Technology).

2.1.1 Threat of Entry

The threat of entry into the Small Corporate Information Technology (SCIT) market can be characterized as **MEDIUM**. With a large pool of potential customers, a small number of

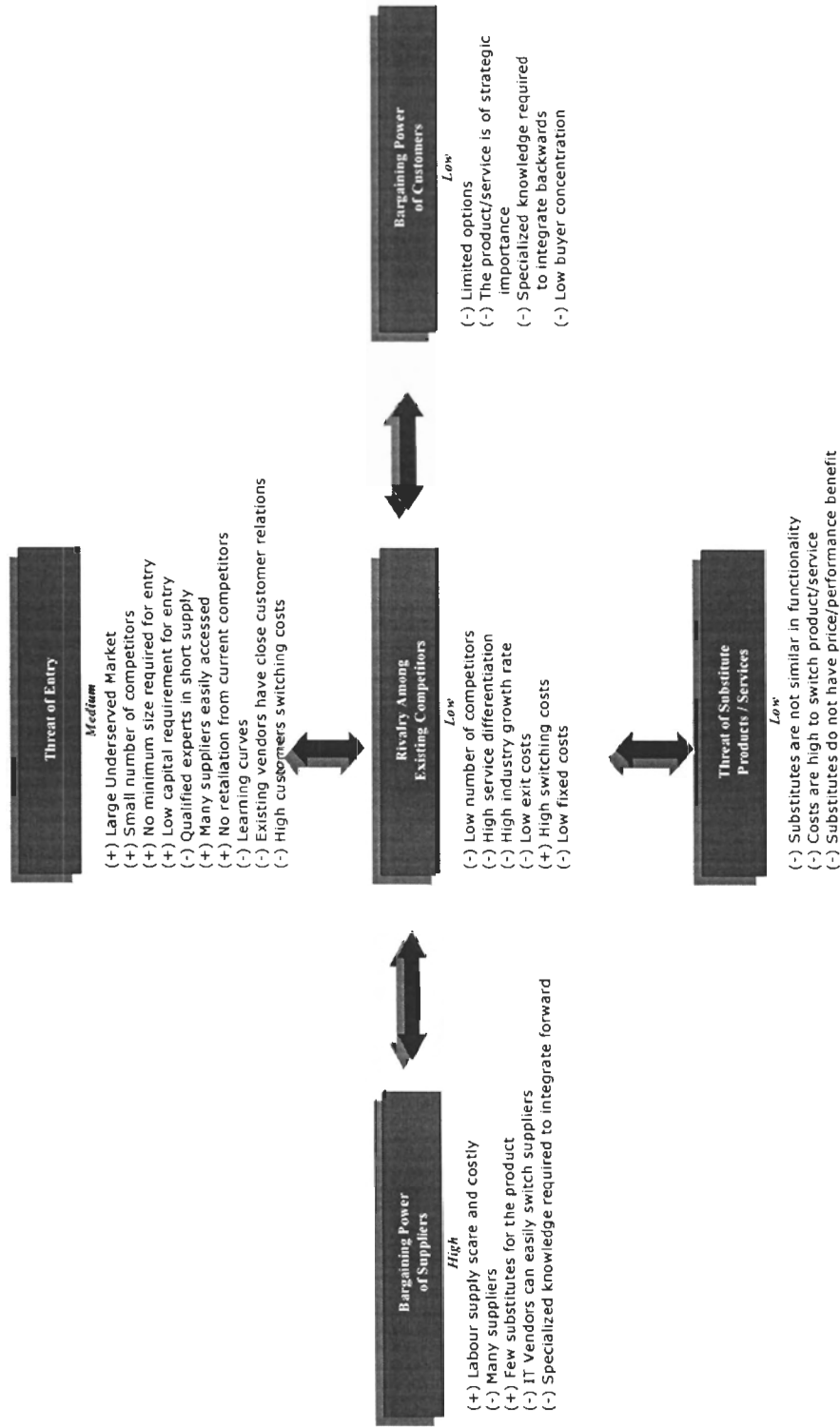
competitors, no size and capital requirements and easy access to non-differentiated products from many suppliers, you would expect a large influx of competitors willing to enter the market to earn easy profits resulting in a high threat of entry. However, the key variable restraining the entry of competitors is the lack of qualified network technicians able to implement and support information technology. This is a problem not only within the SCIT market but also in the general Information Technology industry worldwide. There is an existing shortage of qualified personnel and small numbers of potential new personnel entering the industry. Large companies are willing to pay large salaries for qualified personnel and these same large companies are willing to train new potential personnel entering the general Information Technology industry. The lack of qualified personnel and competitors in the SCIT market is acute. In addition, a large percentage of the competitors within the SCIT market are highly qualified independent consultants and are usually between large salaried positions with the large companies. This constant turnover keeps the number of competitors small and fragmented as these highly qualified independent consultants leave their customers for better paying positions.

2.1.2 Bargaining Power of Suppliers

The bargaining power of suppliers in the Small Corporate Information Technology (SCIT) industry can be categorized as **HIGH**. In the SCIT market, there are a large number of suppliers selling hardware or software products to a small number of buyers, forcing the suppliers to be very creative with promotion and pricing. Conversely, there are a small number of highly skilled professionals to implement and maintain these hardware and software products, forcing the customers to be creative with recruitment and retention.

The suppliers are volume dependent with very thin margins. Collaborating with the suppliers and allowing them to capture incremental profits from the customers will imbed a mutual respect between the company and the suppliers. Very thin margins of 1% are the norm

Figure 2-1 - Small Business Information Technology Industry Structure



Adapted from Bukszar, Class Notes, January 2005 and Porter, Competitive Strategy 1980

and results in intensive competition between suppliers for any incremental sale to the small number of buyers to increase their volumes. Some suppliers have tried to integrate forward, but do not have the specialized knowledge needed to implement and maintain an information technology infrastructure and business application solutions. Even if the supplier has limited success trying to integrate forward, the buyers can switch suppliers instantly, as other suppliers are selling the same homogenous products. This in effect cannibalizes the supplier's main business as the buyers switch to other suppliers. It is very common for a buyer to acquire product from many suppliers whenever the price and promotion is better at the time the product is needed. As Perceptron Technology does not sell hardware or software directly, but allows the supplier to sell directly to the customer; it is not intruding into the supplier's industry. This strategy allows the customers third tier pricing, the supplier incremental profit without marketing expenditure and there is no need for the company to carry inventory. This process depends entirely on customer loyalty.

With the large number of suppliers selling product into the SCIT market and a low number of buyers, the bargaining power of suppliers would be expected to be characterized as low. This is counteracted by the severe lack of highly skilled labour providing the specialized knowledge to the SCIT market that is needed to implement and support an information technology infrastructure and business application solutions. Any small company, including Perceptron Technology, has a very hard time recruiting qualified personnel to implement and maintain these sophisticated business solutions as large companies are looking to retain these professionals as well, and are willing to give large scale compensation packages to retain them. When small companies in the SCIT market are able to retain these professionals, the resulting compensation packages are even higher, dramatically increasing the cost of the business solutions to the customers.

2.1.3 Threat of Substitute Products/Services

The threat of substitute products/services in the Small Corporate Information Technology (SCIT) industry can be categorized as **LOW**. For small companies, there are very few substitutes. Services from large vendors are not available. The only viable substitutes are doing it oneself or managing an independent group of consultants on an adhoc basis, neither is particularly viable. Specialized knowledge is needed to implement and support an information technology infrastructure and business application solution. Acquiring the specialized knowledge needed to in source the information technology infrastructure and the specialized personnel to implement and maintain this infrastructure is very expensive. This places severe limits on companies trying to do the implementation themselves and again results in a dependency on highly skilled knowledge specialists. Eventually, user friendly technology will be created that will mitigate the specialized knowledge needed to implement and maintain the information technology infrastructure and business application solutions the small companies need, causing the niche to disappear.

2.1.4 Bargaining Power of Customers

The bargaining power of customers in the Small Corporate Information Technology (SCIT) industry can be characterized as **LOW**. In the SCIT market, the number of customers dwarfs the number of companies offering services. With very few vendors, the customers are constantly looking for vendors that can solve their problems. The specialized knowledge required to implement and maintain the information technology infrastructure and business application solutions is very scarce. Even if customers are able to implement solutions by themselves, maintaining the solution is even harder without the required skill set. Trying to integrate backwards is very difficult for these customers as they would need the same expertise and this expertise is very costly. With the high costs for the needed expertise, a large number of the small customers can not afford to implement and maintain a complete solution. They implement a

partial solution that does not fulfil their needs, hoping to complete the implementation at a later date. This partial implementation usually costs them more in the long run, but they try and muddle through as best they can.

2.1.5 Rivalry Among Existing Competitors

Rivalry in the Small Corporate Information Technology (SCIT) industry can be characterized as **LOW**. The SCIT market is a high growth industry with differentiated services, low fixed costs and low exit costs and high service differentiation. With a low number of competitors in the industry along with a chronic under-supply of personnel with the required knowledge to implement and maintain the information technology infrastructure and business application solutions, the industry is highly fragmented. The suppliers and the customers gladly welcome any new entrant with the required skills.

2.2 Information Technology Industry Assessment

The Small Corporate Information Technology market (SCIT) in B.C is a very attractive industry to enter. A very large number of small companies, 359,600, and growing by >13,000 small businesses a year, is a large potential market for a company entering into the SCIT market (Government of BC, 2005). This part of the information technology industry has been largely ignored by large management consulting and service companies as these small businesses have not had enough resources to implement the information technology infrastructure and business application software they now need to survive in the cutthroat business style of today. Many of these small businesses try to implement their own information technology infrastructure and fundamental business applications by themselves. Without the ability to implement or maintain this sophisticated infrastructure, they depend on many independent consultants and contractors from many different industries to provide the service and support required to achieve their corporate goals. This costs them tremendous amounts of money and time, with sub par results.

However, why has no one entered this market to capture the revenue stream potential in a large way?

The fundamental issue unearthed is the specialized knowledge required to enter the industry and needed to implement the information technology infrastructure and business application solution. All the customers in the industry are potentially in need of the product and/or service but without the required expertise, the customers are unable to successfully implement and maintain any solution. The suppliers are in need of someone with the required expertise to implement and maintain solutions the customers are demanding. Integration forwards by the supplier has the same problem as integration backwards by the customer, a severe lack of qualified personnel.

This lack of qualified personnel able to implement and support information technology greatly inhibits potential competitors from entering the industry. This problem exists in the entire general Information Technology industry. Large companies are willing to pay high salaries for qualified personnel and willing to train new personnel entering the general Information Technology industry. This drains the SCIT market of qualified personnel causing an acute shortage, leaving the SCIT market wide open for someone able to provide management consulting services with the specialized knowledge and expertise required by the large number of customers.

2.3 Information Technology Industry Key Success Factor

Any company competing in the Small Corporate Information Technology market (SCIT) in B.C. has one very critical success factor: highly skilled professionals with the specialized knowledge required to manage, implement and maintain information technology infrastructure and business application solutions.

These highly skilled professionals are Microsoft Certified System Engineers (MCSE) and are critical as they are the professionals the company sends to the customers to implement and maintain customers business infrastructure and business solutions. These experts will be attracted to the size, responsibility and pay levels in the larger industry and will be hard to recruit and retain. Without these key professionals, a company will not be able to compete successfully.

The company must lock in key senior technical managers who possess very high levels of expertise, and place these technical managers in key positions to manage Microsoft Certified System Engineers (MCSE). These key technical managers also need to be certified as MCSEs as they are responsible for the successful product implementation and support which creates customer loyalty as well as the management of highly skilled MCSE teams.

3 INTERNAL ANALYSIS

3.1 The Corporate Strategy

The goal of Perceptron Technology Inc. is to become established as the leading Business Services Information Technology Management Consulting and Service Provider in the Small Corporate Information Technology market within the general Information Technology Industry. Perceptron Technology will focus on an information technology management consulting and services niche with a focused differentiation strategy providing information technology management consulting, services and products. This niche focused differentiation strategy creates a high degree of customer loyalty and this entrenched loyalty discourages other companies from competing directly.

To understand how Perceptron Technology Inc. (Perceptron Technology) activities align to the corporate strategy, a strategic analysis was conducted using a strategic fit chart (Figure 3-1). This strategic fit chart shows a differentiation-based organization with three cost based strategic fit variables. Perceptron Technology must provide customers with the best service and support on products being implemented and new products in the pipeline from major industry players such as Microsoft and Intel. The customers will feel they are getting the best products for an exceptional price along with exceptional service and support allowing them to utilize the company as their internal information technology department. This will engender a relationship of respect and mutual understanding that will provide a loyal base of customers.

The niche market Perceptron Technology is in consists of Small Corporate businesses (2 to 50 users) and Small Office Home Office (1 to 2 users) (SOHO) customers. Through its research and development, Perceptron Technology maintains a technological lead in the market

and provides the best quality care for its customers. Transparency in all dealings with key stakeholders is of vital importance along with a collaborative approach to help the customers deal with new business requirements they foresee in the future. Perceptron Technology has extensive in-depth understanding of the Information Technology industry which allows it to understand what is required by small companies to manage and grow their businesses. Perceptron Technology is able to advise small corporate companies in what is available, when and if it is needed and how to implement the information technology products they require. This understanding gives Perceptron Technology a corner stone competency in small corporate management consulting along with a service and support competency in PC hardware and Microsoft based business applications.

Utilizing these competencies, Perceptron Technology is positioned as a business solution aggregator in the information technology Business Services Value Chain (Gartner, 2003). Perceptron Technology possesses a bundle of core competencies in common infrastructure, business applications, business processes and business strategies to deliver pre-engineered and configurable business solutions in a timely and cost-effective manner to Small Business Information Technology customers.

3.2 The Corporate Strategic Fit

To understand how Perceptron Technology Inc. (Perceptron Technology) activities align to the corporate strategy, a strategic analysis was conducted using a strategic fit chart (Figure 3.1). This strategic fit chart shows a differentiation-based organization with three cost based strategic fit variables, a centralized structure, decision making with very little autonomy and very little innovation risk.

Figure 3-1 - Perceptron Technology Inc. Strategic Fit Chart

Perceptron Technology Inc. Strategic Fit Chart												
★ - Current ☆ - Future	Cost Based					Differentiation						
	Low Cost / Adequate Quality					High Quality / Adequate Cost						
		1	2	3	4	5	6	7	8	9	10	
Strategy	Rapid Follower										★	Innovative
R & D Expenses	Low R & D										★	High R & D
Structure	Centralized	★										Decentralized
Decision Making	Less Autonomy	★	→			☆						Autonomy
Scale	Economies of Scale					☆	←	★				Economies of Scope / Flexible
Labour	Mass Production								☆	←	★	Highly Skilled / Flexible
Marketing	Comparative / Push	★	→			☆						High Cost / Pioneering / Pull
Risk Profile	Low Risk	★										High Risk
Capital Structure	Leveraged					★						Conservative

Adapted from Bukszar, Class Notes, January 2005

3.2.1 Strategy

Perceptron Technology’s strategy is to utilize highly trained networking and communications information technology professionals to provide management consulting and support services. It specializes in the retention and delivery of services by these highly skilled information technology professionals to customers when the need arises. These professionals are retained as personnel or contractors and are used by customers on an hourly basis to support and deliver services the customers would not otherwise be able to implement. They have the specialized knowledge and the skill set needed to implement sophisticated business infrastructure and business application solutions.

These highly skilled information technology professionals are experts in common products within the information technology industry and are able to implement the solutions these small business need. But with an increasing number of businesses trying to implement the infrastructure and solutions; the pool of highly skilled professionals with the specialized

knowledge is becoming ever rarer in the information technology industry. As a result, small businesses are increasingly unable to afford the professionals they need to implement their solutions. Providing these specialized skills to companies when they need them provides a critical service to these companies and allows them to implement and maintain their business solutions.

Perceptron Technology does not sell the needed products to the customer but is aligned to major suppliers for these products and introduces the customer to these major suppliers so they may purchase the recommended products. In turn, the major suppliers work with Perceptron Technology to provide the customer with the right products at the right time without the customer needing to understand the product requirements. The value added for the customer is a standard set of business software and infrastructure that is a proven solution.

This concentration on management consulting, implementation services and down stream support requires extensive research and development. Perceptron Technology is aligned with Microsoft and Intel as a registered partner providing Perceptron Technology with all the information, materials and support to build and extend the skill sets needed to effectively market, sell, service, and support small business. This direct conduit into these two major industry players allows Perceptron Technology to concentrate on technology and customer needs while being able to research and develop new business solutions for the customers.

3.2.2 R&D Expenses

The information technology industry is constantly changing with an extensive stream of fixes, patches, upgrades and new innovations occurring every day. Researching these new developments and investigating the implementation strategies required to execute these changes at customer sites requires an extensive amount of time and money. The information technology business services value chain depends entirely on customer loyalty to Perceptron Technology which provides recommendations to help them grow their business. This necessitates high quality

service and support on products being implemented along with research and development on new products in the pipeline from major industry partners such as Microsoft and Intel. The value added is in the ability to advise and recommend information technology services and products and the integration of these standard products and services into the customer infrastructure. Research and development in this constantly changing information technology industry is a critical function of the company. Not all customers need every innovation and development, but approaching all customers with fixes, patches or innovations helps customers be proactive concerning the infrastructure and applications the customer has implemented.

3.2.3 Structure and Decision Making

Perceptron Technology structure is very centralized with the Owner being the final decision maker for all corporate and customer decisions. All personnel and contractors directly report to the Owner and have preliminary decision-making authority, but all current customers rely on the Owner to make the final decisions. As the company grows this is will change, as the customers trust other senior personnel allowing more autonomy in the company. This will also give future customers an understanding of trust and stability within the overall customer base allowing these new customers not to fear the future.

3.2.4 Economies of Scale / Scope

Labour economies of scope are achieved by using highly skilled information technology professionals with expertise in all common products within the information technology industry. This is achieved by certifications, such as the Microsoft Certified System Engineer (MCSE) certification, allowing them to perform multiple tasks over a broad range of customers. The company has great flexibility in assigning these highly skilled professionals too many different customers or tasks. Using this highly skilled labour and the same standard product for many different customers allows the company to acquire many customers per associate. Using the

knowledge and experience gained in selling and implementing this standardized product, a learning effect is created, allowing the company to gain new customers quickly and implement business solutions easily.

External Relations economies of scope are achieved by the sharing of the suppliers with the customers. Perceptron Technology works with the customer to acquire needed products from suppliers instead of acquiring the products for the customer. This also increases the synergy between the customer and Perceptron Technology by reinforcing the bond between all parties; Perceptron Technology, the customers and the suppliers.

An economy of scale effect is achieved by the use of industry standard business infrastructure and business application solution packages produced by the major suppliers in the information technology industry for small businesses. Then these small business customers implement, maintain and utilized these business solutions in similar ways.

As Perceptron Technology grows, the economy of scale will increase, as it recruits and retains more highly skilled professionals. The required skill set of these professionals will be lowered as more specialization will be needed instead of general expertise. This division of labour will increase the effectiveness of the company with the customers and reduce the expertise requirement of all the personnel.

3.2.5 Labour

A highly skilled and flexible labour pool with the specialized knowledge required to manage, implement and maintain information technology infrastructure and business application solutions is very detailed, sophisticated and very costly to maintain.

The highly skilled network technicians and the technical managers must be certified as Microsoft Certified Systems Engineers (MCSE) or be in the process of certification. The

Microsoft Certified Systems Engineer credential is the premier certification for professionals who analyze the business requirements, design and implement the infrastructure for business solutions based on the Microsoft Windows® platform and Microsoft Windows Server System™.

Implementation responsibilities include installing, configuring, and troubleshooting network systems. The MCSE credential is one of the most widely recognized technical certifications in the industry. By earning the premier MCSE credential, individuals are demonstrating that they have the skills necessary to lead organizations in the successful design, implementation, and administration of the most advanced Windows operating system and Microsoft Windows Server System. As an MCSE, the associate has at least one year of experience implementing and administering a network operating system in environments with 200 to 26,000 users in 5 to 150 physical locations. The associate also implements typical standard network services and applications including file and print, database, messaging, proxy server or firewall, dial-in server, desktop management, and Web hosting. Connectivity is another important aspect including connecting individual offices and users at remote locations to the corporate network and connecting corporate networks to the Internet along with the implementation and administration of desktop operating system and network infrastructure designing.

The technical managers must be Project Management certified. This project management certification is for professionals who analyze the business requirements, initiate, plan, execute, control and close projects. The primary skills are *scoping* (i.e., describing and agreeing on project objectives and requirements), scheduling, and estimating. Added to these core skills are managing risk and uncertainty, managing quality, communicating, managing ourselves, and collaborating with others, including suppliers of goods and services and everyone else who works on or is affected by the project. As the technical managers guide the projects from inception to completion they develop timelines, manage budgets, coordinate product purchases, select resources, report project status and ensure all resources are there to complete the projects. They

must be technically literate, have excellent oral and written skills and the ability to manage highly skilled technical professionals to meet the business deadlines.

The entire labour pool must have effective communication skills as this is the critical contributor to every aspect of corporate performance with the customers as everyone is in essence a sales person. Simple facts get distorted or overlooked until they become the center of large conflicts or errors. Those who assume that consensus has been reached regarding the definition of objectives, requirements, or other critical issues may discover later that no real agreement had been reached. Huge amounts of time may be spent in meetings that provide no meaningful results. This communication skill set is candid, clear, at the right level of detail, timely, relevant to the interests and needs of the participants, involves the right people, and ensures mutual understanding of content and conclusion. Much communication is informal and oral; however, written communications are needed to document issues, understandings and action plans. Each project or customer problem needs a consciously planned communication process with clearly defined expectations, roles and responsibilities. Written documentation needs to be kept to a minimum but there is a need for critical information to be in writing.

These fundamental skill sets within the labour pool will allow the company to prosper. The current labour pool has these skill sets and is very effective with the current customer base. Any new professionals hired into the labour pool need to have these skill sets or be capable of being trained. As new customers are acquired, these high level skills will be employed to enhance the corporate image and growth. It is foreseen the company will need to train new employees in all the critical skills as the company grows as it is not always possible to find new labour with the exact skill sets required given the general lack of qualified personnel able to implement and support information technology. The single largest financial expenditure the company has is the salaries and contractor fees that are needed to employ and hire these highly skilled professionals and as such the recruitment and retention of these personnel is of critical importance.

3.2.6 Marketing

Perceptron Technology's marketing is a low cost push strategy and is not likely to change in the foreseeable future. A single commission based sales person promotes the company to small businesses and has a high level of technical skill with over 15 years of technical sales. This person works for a major supplier of the company and is essentially in a conflict of interest. During his normal duties with the major supplier selling hardware and software, he steers new customers to Perceptron Technology when the customer is in need of the specialized knowledge services Perceptron Technology can provide. This sales person receives 20% of all profit from these customers to supplement the income he receives from the supplier. This incentive encourages the sales person to actively market the company to his customers and allows the company to grow incrementally. The major supplier does not know about this arrangement, but it has major benefits to all sides. Perceptron Technology also has arrangements with other major suppliers to pass on customers that are in need of implementation and support services, but none as lucrative, as they are only interested in selling hardware and software, a very small margin business.

When the company grows to a large enough size to support a permanent sales position, this individual will be retained permanently as the full time direct sales person. This sales person is ready and willing to move permanently to Perceptron Technology and bring his customer database of over 10,000 companies he has dealt with over the last 15 years. The owner of Perceptron Technology initially placed him in an information technology sales position 15 years ago with a hardware and software sales company.

This sales person broadcasts the advantages of the company with its highly trained personnel, the specialized knowledge the company maintains and the business solutions it provides. The key message presented to prospective customers is that the company is a specialist in small corporate information technology management consulting and information technology

products, allowing the prospective customer to have an internal information technology department without the tremendous expenditure needed to create the infrastructure and maintain the business applications themselves.

When Perceptron Technology retains this direct sales person permanently, the current low cost push strategy will shift to a high cost pull strategy and signal the start of a search for new customers outside these arrangements, however, presently Perceptron Technology has more business than it can handle.

3.2.7 Risk Profile

Perceptron Technology's Risk Profile is low as the company does not perform any large scale innovation. The company takes proven information technology from large development companies, i.e. Microsoft and Intel, and packages it into a standard business solution for implementation within small companies. The only innovation risk the company has is the research and development required to make sure all the components fit together in a cohesive manner.

3.2.8 Capital Structure

Perceptron Technology's Capital Structure is strictly equity based but is under funded at this time. The Owner provided the initial capital to establish the company in 2001 and has been very successful establishing a small customer base of 12 customers. The company is constrained by the lack of capital to further growth to handle the increase in current customer demands. Even more disastrous is new customers being turned away that would bring ideal future revenue growth. A capital infusion from an investor would allow the company to increase the highly skilled, flexible and costly labour pool to handle this greatly increased demand.

3.3 The Strategic Fit Assessment

Perceptron Technology's niche focused differentiation strategy is used to address a focused segment in the marketplace and is employed because it is not appropriate to attempt an across the board application of cost leadership or differentiation. It is based on the concept of serving a particular target in such an exceptional manner, that others will have a hard time competing. This means addressing a substantially smaller market segment than others in the industry, but because of minimal competition profit margins are very high. The advantages of this niche focused differentiation strategy include the power over the customers as Perceptron Technology is their only supplier while customer loyalty protects Perceptron Technology from new entrants and substitute products allowing Perceptron Technology to stay close to the customers and monitor their needs.

This strategy involves a service that is perceived as unique. Highly skilled professionals providing the specialized knowledge to customers that do not need or want to understand information technology, but require it to succeed in today's breakneck pace of business if they are willing to pay for the services. These unique benefits provide superior value to the customer because customers see the service as unrivalled and unequalled resulting in customer loyalty. This provides considerable insulation from competition. However there are additional costs associated with this differentiating service and requires a premium pricing strategy. To be able to maintain this strategy, Perceptron Technology has strong research and development skills, strong engineering skills and strong creativity skills. Good cooperation with distribution channels, strong marketing skills, being able to communicate the importance of the differentiating product characteristics are also evident, but in some cases are hidden. The company stresses continuous improvement and innovation and attracts highly skilled, creative people to the team.

The strategic fit chart fits the company fairly well. The only issue that will inhibit this strategy is the capital constraints. The company is constrained by the lack of capital to further

growth to handle the increase in current customer demands. A capital infusion from an investor would allow the company to increase the highly skilled, flexible and costly labour pool to handle this greatly increased demand.

3.4 Perceptron Technology Incorporated Company Value Chain

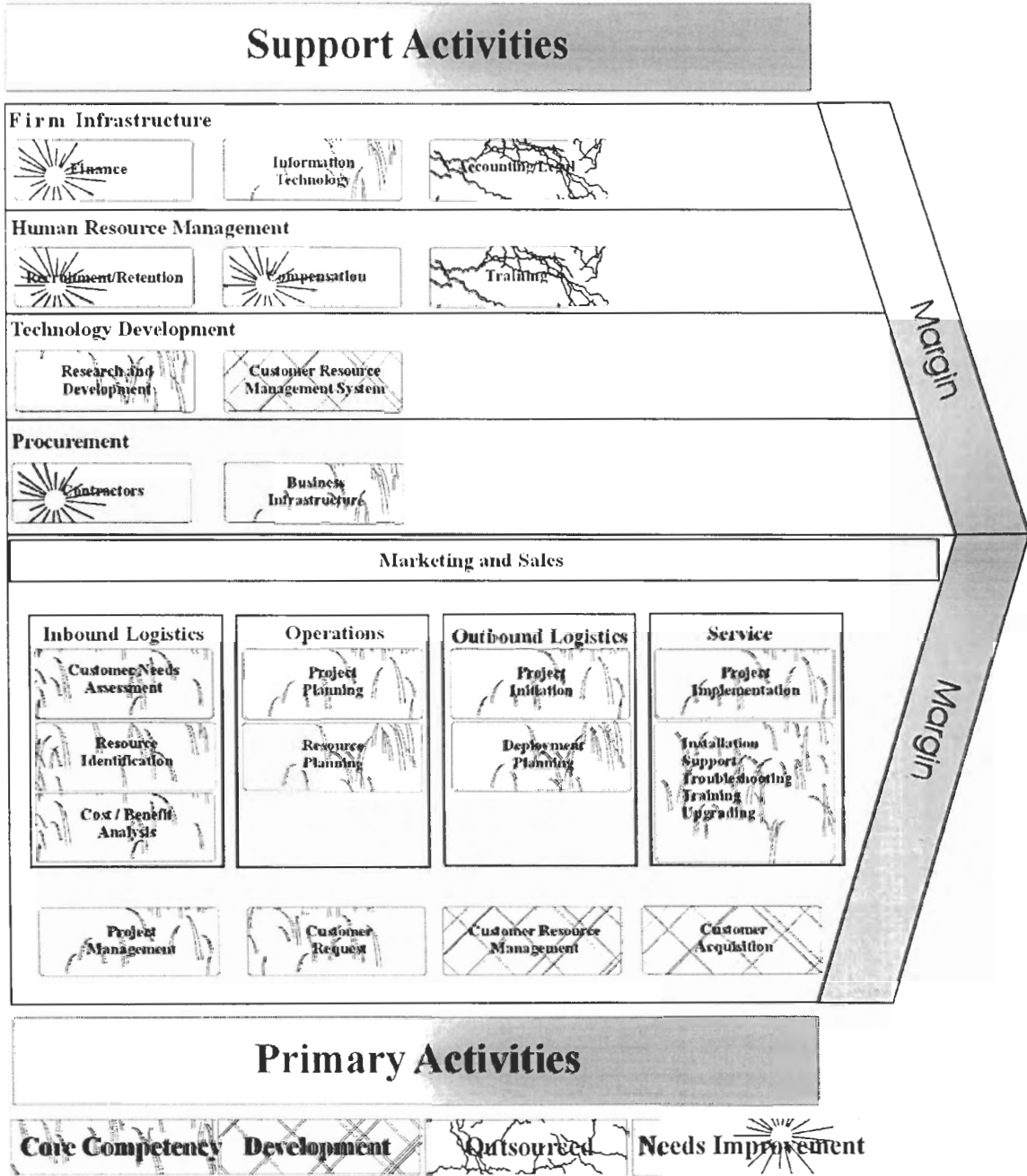
The company value chain for Perceptron Technology Inc. is shown in Figure 3-2 below. This chart is based on the model discussed in Bukszar's class of 2005 and is adapted from Porter's 1985 text, *Competitive Advantage*. The model has been altered to account for Perceptron Technology's flow of primary and support activities.

3.4.1 Primary Activities

The Primary Activities process flow map is shown Figure 3-3 below details the steps taken to process a new customer request for infrastructure and any current customer's new requests for services. The steps are the same for all requests from new or current customers with the exception of the project plan for existing customers. This project plan document already exists and contains all the details pertaining to the customer business infrastructure and business application solutions.

The flow of activities starts with the acquisition of a new customer request. The sales person introduces the customer request to the senior management who meet with the customer to discuss the needs and wants. The customer is then introduced to a tiger team manager and his network technicians. This tiger team learns the customer's business and designs a system the customer needs to grow his/her business. When this design is finished and the customer approves of the design the tiger team works with the customer to acquire the needed products from the suppliers. This is accomplished by introducing the customer to the suppliers and having the suppliers work directly with the customer. When all products are in place, the tiger team

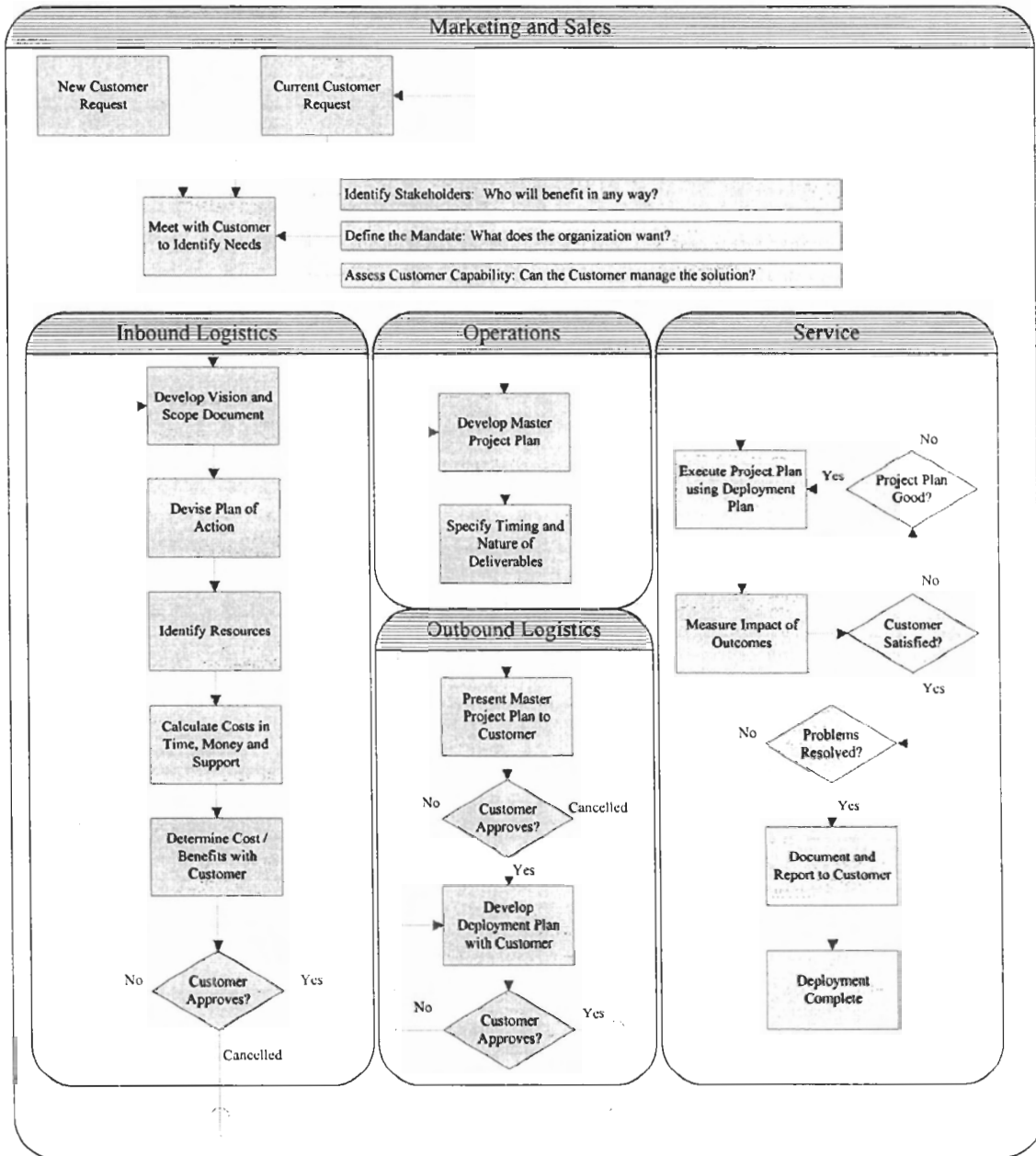
Figure 3-2 – Perceptron Technology Inc. Firm Value Chain



Adapted from Bukszar, Class Notes, January 2005 and Porter, Competitive Advantage 1985

implements the proposed business infrastructure solution with constant customer interaction. There is a constant stream of feedback between the customer, the tiger team and the senior management of Perceptron Technology until the implementation is complete.

Figure 3-3 - Perceptron Technology Inc. Primary Process Map



When the business infrastructure is operational, the tiger team continues this consistent contact with the customer, responding to new customer requirements and issues unforeseen in the design or new business goals. This feedback loop is critical to the customer and to Perceptron Technology, enabling Perceptron Technology to ensure the best solutions are working properly. Perceptron Technology enhances this feedback loop by having the sales person introduce the customer to new innovations and products which are pertinent. This knowledge enables the customer to make sound decisions now and into the future and helps Perceptron Technology understand the customer as he/she grow his/her business.

The primary activities are divided into five categories in the company value chain; marketing and sales; inbound logistics; operations; outbound logistics and service. The marketing and sales category encompasses the other four categories as this category provides the essential feedback loop a Perceptron Technology depends on.

3.4.1.1 Marketing & Sales Activity

The marketing and sales activities of Perceptron Technology's business, deals with the dissemination of technological information and business process, much of it proprietary, sensitive and of strategic competitive advantage to Perceptron Technology Inc. and to the customers. This activity is critical to the overall functioning of the company at every stage of the Primary Activities process flow, as the amount of information is very large and grows exponentially. Marketing and sales needs to deal with this information flow and disseminate this information to the customer in many different ways.

- Inbound logistics information acquisition needs to interact with the customer to make sure the right information is acquired for problem resolution or new technology investigation.

- Operations need to interact with the customer to make sure that the information acquired for problem resolution or new technology investigation is correct and accurate.
- Outbound logistics needs to interact with the customer to make sure that the information acquired for problem resolution or new technology investigation actually solves a perceived problem or issue.
- Service needs to interact with the customer through marketing and sales to make sure the customer is satisfied with the resolution of the problem or issue.

This multi-process feedback loop binds the customer and Perceptron Technology tightly together and is captured in a customer relationship management system. The sales person, the senior management, the technical management and all personnel input any information obtained from customer or supplier interaction. This customer relationship management system enables a complete record of new innovations in the information technology industry discovered from the suppliers and records any new requirements, issues or problems from the customer base. This enables the company to manage the high volumes of information and innovations that is typical in the information technology industry. At any stage the customer interactions are available to the management allowing them to monitor the customer base and any new technology that could be available to them.

All personnel, in effect, are sales personnel as they all interact with the customer. The direct sales person visits existing customers to inform them of new innovations and products and also informs new prospective customers how Perceptron Technology can help them solve their problems with these innovations. All other personnel must also be aware of these innovations as the customer is in daily contact with them and they need to advise new solutions when they discover problems with the customer. The ideal customer is a customer who knows they need the service, has the money, is ready to buy, and just wants to find out how much it will cost. Other

prospects are interested in seeing a brochure on your company and asking questions about what you do.

Once the prospect has expressed interest, it must be determined if there is a good fit between Perceptron Technology and the prospect. Questions must be asked such as what is the business problem they are encountering, how much can they afford to spend, who is the decision maker, and can Perceptron Technology help? If the prospect is difficult to deal with, can't afford the service, or can be better served by another provider, the prospect needs to be informed that Perceptron Technology is not a good match for their business. If there is a good match then an initial meeting either in person or on the phone is conducted.

In this initial meeting the customer's needs are discussed and how the solutions can solve the problem. Whether the meeting is on the phone or in person, the result is a tentative commitment to retain the services of Perceptron Technology. This time spent is not considered a "sales call", rather a needs assessment. A technical resource may not be necessary to complete a simple proposal, but for a more complicated deployment or customization, a technical manager will be needed. For Perceptron Technology the real work now begins.

To look after the customers, Tiger Teams are required; lead by a Technical Manager and 2 to 5 MCSEs. These tiger teams have the front line responsibility for all technical customer requirements. Each of the technical managers is responsible for the corporate relationship with the customers and the MCSEs within the tiger team. The manager can merge one tiger team on a temporary basis with another tiger team to implement or solve a major customer implementation or problem resolution. This matrix approach to the tiger teams and the company overall will allow for even greater flexibility in the labour pool within the company. Each of these tiger teams reports to the senior management on both the corporate customer relations and the technical

customer relations. This will allow senior management to track, analyze and effectively manage the company and the overall customer base.

3.4.1.2 Inbound logistics Activity

The main process within the inbound logistics activity is the understanding of the new or current customer's needs and requirements of a new business infrastructure solution or additional business infrastructure capability. When a customer request is passed from the Marketing and Sales activity to the inbound logistics activity, a Tiger Team Technical Manager in charge of the customer converts these needs into detailed requirements. This envisioning phase defines the goals and limits of the customer requirements. The customer is consulted to investigate all possible issues the customer has or requires. This might happen over a long period of time or just a few hours depending on the size of the requirements. Products are investigated that might solve the new issue or request. It might be that the new issue does not need any new products, but is a function of the currently installed hardware, but the customer is not aware of the capability of what is in place. The technical manager may discuss these requirements with the suppliers to understand what is new or innovative that will solve the customer request.

After the requirements are detailed, the technical manager devises a Vision and Scope document. This Vision and Scope document details what products are needed, what skills and capabilities are required to implement the products, what involvement is needed from the customer, what resources are required and what plan of action is needed. It identifies the specific business objectives and how the solution can help the customer achieve them. This is written up and used as the base document with the customer. This Vision and Scope document discusses the fine points of the customer requirements. It contains

- A definition of the project. The goals, scope, constraints and assumptions of the project.

- A definition of the requirements. The description of what the solutions must do.
- A conceptual design of the proposed solution.
- A high level assessment of the risks.
- A definition of the team structure needed to implement the proposed solution.
- A high level plan of action to complete the proposed solution.

When the Vision and Scope document has been created, the technical manager decides what resources are needed to move the plan of action forward. The technical manager needs to define what internal resources, external resources, customer resources or mix of resources the plan of action requires. At minimum, the plan of action needs at least one internal resource and one customer resource to liaise throughout the projects life, and as such, the plan of action cannot be implemented if these critical resources are not available.

After the Vision and Scope document is finalized, the requirements are specified, the plan of action is completed, the critical resources are identified, and then the technical manager calculates all the costs in time, money and support. When these preliminary costs are calculated, a cost / benefit study is done with the customer. This enables the customer to investigate the costs, resources needed and the benefits resulting from implementation of the proposed solution.

This is the first major milestone and requires the customer to understand all the nuances of the proposed solution. The customer then makes a decision to proceed with the proposed solution, rework the plan of action with different or updated requirements or cancel the proposed solution. If the proposed solution is approved, the Vision and Scope document and proposed resource allocations are passed to the Operations activity.

3.4.1.3 Operations Activity

The main process within the operations activity is the creation of a project plan that will be able to implement the proposed business infrastructure solution detailed in the Vision and Scope document received from the inbound logistics activity. This again is handled by a Tiger Team Technical Manager and establishes the order the tiger team specifies, implements, tests and performs the required activities to complete the proposed infrastructure solution. This project plan contains all the required minutiae to serve as the guide to setting up, managing and completing the proposed solution specified in the Vision and Scope document. This project plan details:

- The design objectives. A detailed description of the different types of users, the key tasks they perform, how these tasks are currently performed, and how performance can be improved in the new environment.
- Any coexistence strategies. The identification of interoperability issues within the customer's organization, with partners and any third-party vendors.
- The current environment. The customer's current computing environment must be thoroughly understood. Network layout or system design diagrams are used to deal with current complexity.
- The project team and role definitions. The technical resources and the roles of the technical resources needed to complete the project.
- The test lab environment. The needed lab environment isolated from the customer's production environment so the design can be verified without affecting productivity.
- The communication strategy. A detailed communications plan to enhance the effectiveness of the project. This communication strategy will build enthusiasm and

support for the project, the new technologies, and the business processes that the technologies support by keeping people informed and involved.

- The education/training strategy. The education of the customer about the product's features and functions before deployment and specification of formal training so that the customer can gain expertise and confidence.
- A risk assessment. To prepare for the unexpected impacts of changes in business needs, economics, user requirements, or disruptions such as power outages or storms.
- The acquisition timeline. Hardware or software product purchases may require lead times of several weeks or longer.
- The detailed project timeline. The detailed timing of the resources and activities needed to be performed to complete the proposed project.

A separate action in the operations activity is the proof of concept lab. This lab verifies the design without disrupting the customer environment. This lab establishes a representative sample of the customer's environment within an isolated lab away from the customer's premises. Though not every project requires an extensive lab and testing process because the same products are utilized in all customer environments, it is a very useful to include in the planning process for complicated projects. A key factor in the success of the project is a thorough testing based upon realistic scenarios. These realistic scenarios require a test environment that simulates the customer's production environment as closely as possible. In this test environment, members of the planning team can verify their assumptions, uncover deployment problems, optimize the deployment design, and improve their understanding of the technology. These activities reduce the risk of errors and minimize downtime in the production environment during and after deployment.

Fundamentally, the technical manager gathers all the needed information about the customer's environment, defines and designs the new service offering in a functional specification, assesses the resource needed to complete the project, builds the master project plan and drafts a project schedule. The second major milestone is reached when this project plan is complete thus enabling Perceptron Technology to understand all the minuscule details of the proposed solution and the customer's environment. This master project plan is then passed to the outbound logistics activity.

3.4.1.4 Outbound logistics Activity

The two main processes within the outbound logistics activity are the detailed discussion and understanding of the proposed business infrastructure project plan with the customer and the development of a deployment plan with the customer. The Tiger Team Technical Manager involves the customer in analyzing the project plan received from the operations activity. The customer needs to agree with the proposed project plan before any project activities can be started. This agreement is the third major milestone and signals the start of the project. At this time the customer may decide to modify what is really needed, how to proceed or even cancel the project. The customer's business goals may have changed and need to be reflected in the master project plan.

With the acceptance of the master project plan the customer and the technical manager develop a deployment plan. This deployment plan details the product features that will be implemented, how they will be configured and deployed. It is essential that all of these elements align with the scope and objectives of the project plan be agreed too. The customer must agree with the key tasks to be performed, how these tasks are currently performed, and how performance can be improved in the new environment. This deployment plan details:

- The migration strategies. The migration planning reflects the business-related goals that will drive the initial migration decisions and are involved when making implementation choices.
- The customer's strategy, standards, and management. To enhance user productivity and reduce the costs associated with managing client computers are company primary goals.
- The current application compatibility with proposed business infrastructure solution. A critical step in the project is to identify the applications that could cause problems during deployment and resolve the issues before deployment begins.
- The security considerations. Security planning is an essential component of the deployment plan. A security plan that is designed to meet the needs of the organization must be established. It is easier and more efficient to include the security planning during development than to add it after deployment.
- A deployment risk assessment. A schedule that considers risk assessment can minimize the likelihood of serious setbacks as a deployment can do more to create risks than a poorly conceived schedule.
- The communications plan. A detailed communication plan to enhance the effectiveness of the deployment project. With a proper communication plan, the deployment will be able to meet the customer's expectations.
- The education/training plan. Educate the customer's users about the features and functionality that the solution will offer before it is deployed. A successful initiative balances technical challenges with the usability challenges and mitigates them through training.

The fourth major milestone is reached when this deployment plan is completed and is agreed too by the customer. This enables Perceptron Technology and the customer to understand all the elements needed to implement and successfully migrate the company to the new business infrastructure solution. At this point the master project plan and the deployment plan are then passed to the service activity for the final stage of the project.

3.4.1.5 Service Activity

The main action within the service activity is the execution of the master project plan using the deployment plan to implement the business infrastructure solution for the customer. The Tiger Team Technical Manager is the project manager of the deployment; he/she directs the tiger team in each step of the deployment plan and constantly monitors the results. These results are communicated to the customer in a feedback loop to make sure the customer is aware of what is happening in the deployment. Any concerns are fed back into the master project plan and the schedule which then are modified to reflect them.

The final major milestone which signals the end of the project is when the customer accepts the solution and agrees it is complete. At this point, a post-implementation review is conducted. This is a comprehensive review of the project concerning the overall process, the team, and the results. Included in this review are any future applications and development needs that may have been discovered during the implementation process. Customer feedback is solicited and any mistakes that were made during the rollout are evaluated. This is fed back into the company to modify items in the project plan as needed, and structures ongoing planning as a part of customer management. The completion of a project is an opportunity to gather and record project information and share it with the customer. Additional services are suggested that can be supplied by the organization to further the customer's business goals.

With this in mind, the sales person, the managers, the executive secretary and the network technicians must be professional, respectful and competent in their duties. All of the personnel and subcontractors are at the customer's site via phone or in person. The company has agreements with most of its current customers detailing access to the businesses after hours. Building keys and security card keys are provided to Perceptron Technology to allow the timely problem resolution of new product implementation to be done without forcing the customer to stop their business activities.

The executive secretary handles the constant support phone calls from the current customers and hands them off to a sales person or one of the technical managers. The sales person is usually the contact that finds out about the customer problem or issues first, performs the initial investigation and informs the technical manager about the basic problem. The technical manager investigates and decides the level of network expertise the problem requires and what technical information is required to solve the issue. He/she then selects a network technician, describes the problem and the customer who is in need of service. The network technician researches the problem and develops a possible fix, patch or change to satisfy the customer issue.

The direct sales person is the conduit through which this feedback loop works. It is the direct sales person that implements the smooth transition of information through the company while moving within the research and development environment. Resolutions can then be completed on time and the delivery of resolutions to customers can be conveyed as promised. Perceptron Technology Inc.'s reputation is enhanced by the increased reliability of being able to deliver quality services continuously.

3.4.2 Support Activities

The support activities are divided into four broad categories; Company Infrastructure; Human Resource Management; Technology Development and Procurement. In Perceptron

Technology the two most critical activities are Finance and Human Resource Management because of the need for highly skilled labour as the company provides highly detailed technology to customers that do not understand this technology.

3.4.2.1 Company Infrastructure Activity

The finance activity is a critical area in need attention as the company does not have any financing arrangements. The company uses funds from operations to finance any growth. All customers are billed by the number of hours spent and by the resources committed. This is a time and materials business model and places a ceiling on how much the company can make without hiring more personnel. The company is unable the charge more per hour or hire and sell more professionals, limiting revenue growth. With the high costs of personnel, margin growth is limited by the inability to raise the hourly rate relative to the effective hourly pay rate or reduce the costs associated with delivering the services and managing the business. The company is currently at this maximum revenue potential and needs to hire more personnel to handle the increased demand from customers. This necessitates an infusion of capital to finance any future growth.

The information technology activity is a core competency in Perceptron Technology, as the company is highly skilled in this area and provides this service to small corporate business. The company is able to setup and maintain its own business infrastructure and business applications and uses this as a demonstration platform for prospective customers. This includes wire-less connectivity to mobile devices over the internet into the companies' own servers via VPN technology, currently the cutting edge in the industry of real-time communications for executives and sales personnel on the road. This core competency also provides in-depth knowledge of customer problems as the company is using the same highly sophisticated technology the customers are using.

Perceptron Technology does not maintain an in-house accounting service. The Owner and the executive secretary perform the fundamental bookkeeping and payroll functions and pass this information to an external accounting company. The bookkeeping and payroll functions were initially set up with this accounting company and were in-sourced by the Owner as the company has a competency in this area with both the Owner and the executive secretary skilled in these functions. The number of financial transactions is not numerous at this time but when the company grows and the number of financial transactions increases to where the Owner and the executive secretary are not able to handle them, the company will hire a bookkeeper. This is an ideal situation as the company understands the monthly financials but does not need to perform any detailed year-end or tax accounting functions.

The legal function is out-sourced to professionals in their respective legal areas as needed. With no competencies in these areas Perceptron Technology hires other companies to perform these functions lowering the costs. With little need for on-going legal counsel the company does not foresee any future need to change this out-sourcing model.

3.4.2.2 Human Resource Management Activity

Perceptron Technology employs a small number of full-time people, and contracts most of the work to outside consultants and contractors. The few people the company employs are very highly skilled with each having over 25 years of experience in the information technology field and are experts in many different areas. The three principals in the company are experts in the information technology field with competencies ranging from general management, customer relationship management, knowledge management, technical development, human resource management and project management. The owner specializes in project management, customer relationship management and technical deployment. The VP of Operations specializes in procurement, knowledge management and human resource management. The VP of Sales

specializes in customer relationship management and sales management. The executive secretary also has over 25 years of experience in the information technology industry and has extensive experience in human resources, customer relationship management and business management. She also has extensive experience in technical documentation development and customer training as a junior engineer in a very large company.

This set of skills gives the company a competency in human resource management but the principals are extremely busy dealing with customer issues. These issues deal with the highly skilled labour and detailed technology the company provides to the customers. The company recently lost an employee that was the primary MCSE for the customer base. This employee found a new position with a large company offering a greatly enhanced position for his skill set. Instead of looking after companies with 2-50 users he is now looking after companies with 250 to 25,000 users. Perceptron Technology is unable to offer this scale of challenge but is capable of matching the retention, compensation and training the larger company was offering. As a result the principals are handling the technology details themselves and are actively looking for a new staff member. Losing this employee has made the company realize it needs to improve the recruitment, retention and compensation activities. The company needs to figure out how to boost these competences to enable career path growth of future employees.

The Manger of Technical Services and the Network technicians are required to continually update old skills, and research new skills. This will keep the company on the leading edge of the specialized knowledge needed to implement customer solutions and solve customer issues. Continual training of the personnel within the company is of utmost importance and this is out-sourced to many specialized companies. E-training is used extensively over the internet from companies that specialize in this type of delivery. Blocks of time for external courses are purchased by the company and are used by everyone to upgrade old skills, develop new skills and refresh current skills. If a skill set is deemed to be of critical importance, an employee is sent to

external courses. Currently these courses are MCSE courses to further the critical skills needed in the company. This provides the training to allow the managers and network technicians the required skill sets needed to meet the constantly changing challenges within the customer base and the information technology industry. A Microsoft Certified Systems Engineer (MCSE) certification is of utmost importance as this demonstrates the ability of the network technicians to the customer.

Perceptron Technology spends a tremendous amount of time and money acquiring highly skilled professionals with MCSE certifications. These professionals are not easy to find and even harder to employ. The principals of the company have extensive experience in recruitment and retention and management of consultants, but are unable to perform the activity to a high level of satisfaction. The day to day needs of managing the customer base and the company leave little time to actively search for new staff. This activity needs to be improved a great deal.

3.4.2.3 Technology Development Activity

A customer relationship management system is used to record all information from research and development, customer issues, new customer projects or suppliers. This system is used extensively in a number of ways throughout the company. It is used:

- As an incident tracking system is to capture, manage and report customer issues.
- As a tracking system to help monitor testing progress and the success rate of tests.
- As a customer sales and marketing database.
- As a management reporting, trend review, and validation of staffing levels database.

- As a customer change management system to identify the flow of information and the sequence of activities from the time a change is proposed to the time it is implemented.
- As a research and development management system to identify the critical information needed to be disseminated to all personnel and customer.
- As a time and materials tracking system for customer billing.

This system is extensive and is constantly being developed. As the company uses the system more, new ways to use the information are being discovered. Perceptron Technology is developing a core competency in information management. This competency depends on the types of changes performed, the teams involved, and the corporate culture.

Perceptron Technology has a core competency in the Research and Development activity. The entire labour force has a specialty in the services and products the company markets and maintains. This ability allows the personnel to easily weed out information that is not pertinent to the products or services the company is responsible for. Keeping on top of the industry is a skill the highly skilled labour force acquires to be able to grow in their careers. Perceptron Technology takes advantage of this by having the managers and the network technicians share this research and development information openly and freely. This enables everyone to see what is new with the suppliers not only with the customers, but also with the suppliers. The problem with this is that the amount of information is overwhelming for the number of personnel the company has in its labour force.

Perceptron Technology receives a large amount of detailed information of current product fixes, new product capabilities and proposed product innovations from Microsoft and Intel, among others, for example. The manager of technical services, network technicians and the

direct sales person receive this information, then sort and classify the information as to its importance to the customers. Critical information is passed up to the senior management who disseminate the information to the customer as needed. Non-critical information is collected and passed to the Operations activity for further investigation. Perceptron Technology excels at this activity and would not be able to solve customer problems, correct issues and help them investigate new technology solutions without this ability.

This ability to classify and reach preliminary conclusions on problems and customer issues is critical. These problems and issues are looked at by each tiger team responsible for the customers involved. These teams are the first response line for the customer and have an in-depth understanding of the customer requirements and environments. Using their knowledge of the customer infrastructure and the business applications they are able to point at possible solutions that will be investigated in the operations activity. The network technician has the resources to investigate the problem in real time with Microsoft, for example, while at the customer site if the problem is critical. The network technician will record the resolution to the problem and loop this back into the inbound logistics activity for recording and dissemination to the other tiger teams by using the customer relationship management system.

3.4.2.4 Procurement Activity

Perceptron Technology has a competitive advantage in the procurement of business infrastructure products from suppliers. These products are obtained from suppliers for a minimal charge to enable the company to investigate new technologies being introduced into the market. By having these hardware and software products in the company's lab before they are available to the general market, the company is able to research the interactions between existing products and these new products. It is then able to develop strategies to enhance customer's infrastructure before the customers are aware of their need. This allows the company to stay ahead of the curve,

understand new technologies and not be blindsided. This core competency has grown out of the experience of the principals of the company. They have seen technology grow and change over 30 years and almost instinctively understand what technology will work and which will not.

3.5 Value Chain Assessment

From this analysis a sustainable competitive advantage can be obtained with the core competencies it has achieved, project management and technical resource management by utilizing the competencies in information technology, research, development and business infrastructure procurement. The value chain shows a solid link between these activities and the ability to perform these activities differently than rivals. The company has configured a way to conduct service and technical delivery differently from rivals and has tailored it to its unique value proposition.

Customer relationship management needs to be developed further as this activity controls the flow of an increasing amount of detailed technical information the company and the customer depend on. This activity would enhance the core competencies it currently enjoys and could be another core competency the company could use to further differentiate itself from its rivals.

But, Perceptron Technology has a tremendous reliance on outside consultants to support the company's activities. This needs to be a core competency and currently is not. The principals have the experience and knowledge to be able to perform the Human Resource Management activities but the current customer base takes all their time. They need to do something else to attract the required highly skilled personnel the company depends on for operations. The company may need to outsource these activities and figure out what compensation is needed to retain these professionals

Perceptron Technology has made choices throughout the value chain that are interdependent; all a company's activities are mutually reinforcing. A company's research and development reinforces the approach to customer project management. The project management is intertwined with the customer relationship management at all stages of the chain. This leverages the way it conducts after-sales service. But without the highly skilled professional to implement the strategy and to make the value chain work, the company will not prosper as rivals copy the strategy and beat Perceptron Technology to the customers.

3.6 Perceptron Technology Inc. Culture

The culture of Perceptron Technology Inc. is entrepreneurial and was created from the entrepreneurial mindset of the owner. This entrepreneurial culture evolved by means of the owner's powerful vision and combines the collective energies, resources and talents of its personnel in order to create, innovate and exploit opportunities in the Small Business information technology market place. This culture is one in which the personnel think and act as entrepreneurs and encourages individual diversity and variation of thought. With consistent challenges and rewards it nurtures the entrepreneurial spirit which constantly seeks to exploit new sources of opportunity and encourages the personnel to create new possibilities (Wexler, 2004).

This entrepreneurial vision attracts commitment and energizes people by challenging them to create new possibilities, helps people to discover their meaning and intrinsic motivation, creates standards by which the organization and customers can determine its worth and is the engine that drives the organization's evolution. Perceptron Technology's growth and success over the last few years is due in large part to this culture.

This entrepreneurial culture demands the company and individuals within the company deliver on their promises - both stated and implied promises and stand behind their promises when an error is brought to their attention. They do what they say they will do with honesty and

integrity and people who deal with the company will be treated with respect; whether associate, business associate, supplier, vendor, client or customer.

Products work the first time and perform their intended function, without hassles for the buyer and services are sold at a reasonable price (not necessarily the lowest price). Services are delivered within the time promised or the buyer is notified of any delay and the company can be reached in a reasonable way when a problem does arise, when a customer has follow-up questions or wants to order additional products or service.

Ultimately the customers, vendors, suppliers, business personnel and clients perceive the company as having a quality culture. Does this imply that a company never makes mistakes or that individuals within that company never make mistakes? NO! It does mean that each and every person within the company constantly strives to give the best possible service at every moment. It also means that when a problem occurs or an error is made, they will correct it as quickly as possible.

This entrepreneurial corporate culture is based on, respect for others, a sense of community, and plain hard work. It is hoped a fierce company loyalty will develop among the personnel with the owner's intervention becoming unnecessary. These personnel will constantly discuss how to improve productivity, deliver more value to the customer with a resulting increase in profitability, to the point that all personnel receive greater compensation.

3.7 Financial Assessment

Perceptron Technology's Pro Forma Financial Statements (Appendix 1 – 3) show a simple equity based capital structure with a total capitalization of \$101,805.00 and a net income of \$1,804.80 at the end of 2004. Comparing these figures with the industry average figures from a May, 2005 Small Business Financial Analysis Profile report from BizMiner containing the

financial data from 13,329 small businesses suggests the company is performing similarly to other companies in the computer maintenance and repair (SIC 7378) industry (BizMiner, 2005).

Table 3-1 - Perceptron Technology Inc. Financial Summary

Income Statement Summary	Perceptron Technology	Industry 1 Yr	Industry 3 Yr
Sales	\$261,858.80	\$222,646.00	\$205,377.00
Cost of Sales	185,000.00	114,551.00	74,880.00
Gross Profit	76,858.50	108,095.00	130,497.00
Net Income	1,804.80	3,907.00	17,589.00
Balance Sheet Summary			
Total Assets	\$109,693.10	\$48,314.00	\$37,173.00
Total Liabilities	7,888.30	22,203.00	23,443.00
Total Shareholders Equity	101,804.80	26,111.00	13,730.00
Total Liabilities and Shareholders Equity	109,693.10	48,314.00	37,173.00

Table 3-2 - Perceptron Technology inc. Financial Ratios

Capital Structure	Perceptron Technology	Industry Ratio 1 Yr	Industry Ratio 3 Yr
Debt to Equity Ratio	0%	85%	171%
Debt	\$0.00	\$22,203.00	\$23,443.00
Equity	\$101,804.80	\$26,111.00	\$13,730.00
Assets (capitalization)	\$101,804.80	\$48,314.00	\$37,173.00
Financial Ratios			
ROE	2%	7%	47%
Profit Margin	1%	2%	9%
Asset Turnover	2.4	4.6	5.5
Current Ratio	8.3	2.1	1.8
AR Turnover	17.24	12.22	14.85

With a Return on Equity (ROE) of 2%, the company is a cash creator and is making two cents for each dollar invested, but comparing this to the one year industry average ROE of 7%, the company is not performing as well as the industry. This performance gap greatly increases comparing the company's ROE of 2% to the three year industry average ROE of 47%.

Looking into the ROE ratio, the profit margin of 1% compared to the industry average of 7% (one year industry average) suggests the company is not pricing the service correctly. The company currently charges an hourly rate of \$120.00 compared to the industry average hourly

rate of \$155.00. Increasing the hourly rate by 30% to match the average industry hourly rate would increase the profit margin but this increase may result in some customers decreasing spending and slow overall sales revenue. The company would need to acquire new customers to grow the sales revenue to compensate for the hourly rate increase. If the company charged an hourly rate of \$155.00 instead of \$120.00, and demand had remained the same, the company would have sales revenue of ~\$338,000.00 for the same number of hours worked. This would have increased the net income to ~\$60,000.00 and the ROE to 55%, comparable to the three year industry average ROE of 47%.

A second reason for the low ROE is that three of the principals are withdrawing profits from the company as commission for actively growing the company. They will continue to be involved as consultants with Perceptron Technology and other companies in different industries until the company has grown enough to support the high salaries they command.

Looking even deeper into the ROE, the company has an asset turnover ratio of 2.4 times and is not utilizing its assets as effectively as the industry when compared to the one year industry average of 4.6 times. This gap can be explained by realizing the company is in its initial stages of growth and has not expanded beyond its capability to service the current customers. For example, the company does not have an office but utilizes a virtual office concept to keep expenses and assets down. All the current assets in the company are the basic infrastructure assets needed to start the business plus excess cash and accounts receivable. Removing the ~\$50,000.00 in cash from the assets would increase the asset turnover ratio from 2.4 times to 5.1 times, inline with both the one year and three year industry averages.

The company has a current ratio of 8.3, signifying slack resources and is higher than the one year industry average of 2.1. This also can be explained by the ~\$50,000.00 of cash left over

from the initial investment by the owner. If you remove this cash from the calculation, the company would have a current ratio of 2.0, the same as the one year industry average.

Further investigation shows the company collects outstanding credit accounts 17.4 times a year or every 21 days with only ~\$15,000.00 in accounts receivables outstanding. This is better than the one and three year industry averages signifying most of the customer's pay quickly for services rendered.

The Debt to Equity (D/E) ratio is 0%, signifying the company may be missing an opportunity to increase earnings, may not be realizing the full potential of the business and may actually be hurting overall profitability. But the company is not yet large enough to be able to acquire debt.

The company needs to grow to handle the increase in current customer demands and the resulting increase in personnel. It needs to look at increasing the hourly rate it charges for services to the industry average hourly rate and balance this with the customers' ability to pay. However, with no ability to acquire debt and only a small amount of profit from operations, a capital infusion is required to expand sales and hire more personnel to handle the current customers and a large number of new customers that are interested in Perceptron Technology's services. To this end, the owner is pursuing a capital infusion of \$250,000.00 US from an angel investor to allow the company to grow faster than the funds on hand will allow.

4 KEY ISSUES

Perceptron Technology is encountering a large number of small companies that want to implement this information technology infrastructure and are looking for a company that will help them setup and maintain the needed infrastructure. The specialized knowledge required to implement and maintain the information technology infrastructure and business application solutions is very scarce. Even if companies are able to implement the solutions by themselves, maintaining the solutions is even harder without someone with the required skill set. Without the ability to implement or maintain this sophisticated infrastructure, they depend on many independent consultants and contractors from many different industries to provide the service and support required to achieve their corporate goals. This costs them tremendous amounts of money and time, and usually provides sub par results. As a result, many small businesses have been slow to adopt the necessary information technology infrastructure and fundamental business software applications to enable them to expand their businesses and many are still reluctant to spend the money.

Perceptron Technology Inc. is a company that has the required expertise to handle these company's needs and requirements. But the company requires a personnel expansion to be able to handle increased demands from current customers and potential new customers that are being turned away.

4.1 Capitalization of the Company

The first key issue is the capitalization of the company. The company does not have enough funds from operations to hire any new personnel to support any new increase in sales. Financing new personnel is costly as the compensation packages for a Manager of Technical

Services is in excess of \$143,000.00 US or \$172,000 CAN and a compensation package for a Network Technician is an average of \$91,000.00 US or \$109,000 CAN (Janco, 2005). At this time the company needs to hire 3 new network technicians. The current technical manager would then have 4 network technicians plus a small number of subcontractors to handle the excess load. This would allow the company to expand its sales and reach a point of profitability to be able to finance new personnel from its funds from operations.

4.2 Recruitment, Retention and Compensation

The second key issue is the recruitment, retention and compensation of highly skilled personnel with the specialized knowledge required to implement and maintain network infrastructure and the business application solutions. Perceptron Technology must lock in key personnel with very high levels of expertise and place these personnel in key positions to handle many MCSEs. These key managers will be responsible for not only the product implementation and support successes the company needs to create customer loyalty, but must handle the inevitable turnover of junior personnel as they move on into the general information technology industry. These MCSEs will be attracted to the size, responsibility and pay levels in the larger industry. Without these personnel, Perceptron Technology Inc. will not be able to compete successfully.

4.3 Corporate Business Model

As Perceptron Technology's business model is time and materials, all customers are billed by the number of hours spent on the project and by the resources committed. This model is efficient when the scope of the project is vague or if there is high risk of scope creep, but this puts a ceiling on how much the company could make without hiring more people. Multiply the number of resources by the number of hours they can work by the hourly billing rate gives the maximum revenue potential for the year. Revenue growth is limited to the company's ability to

charge more per hour or hire and sell more bodies. Margin growth is limited to the ability to raise the hourly rate relative to the effective hourly pay rate or reducing the costs associated with delivering the services and managing the business.

On top of this, Perceptron Technology goes in and does whatever the client asks. There is a constant learning curve being climbed, whether it is related to the customer's industry, the customer's processes or the specific type of project. This takes time, costs either the customer or the company money, slows things down and limits the revenue potential. Basically, Perceptron Technology is a glorified temp agency renting out highly skilled information technology professionals with no guarantee of being able to retain these professionals.

The customers see the hourly billing rates as excessive in relation to their own staff and try and limit the involvement of Perceptron Technology in their business infrastructure to keep the costs down. This causes problems as this prevents Perceptron Technology from understanding the customer's needs, requirements and the current business infrastructure to help them grow their business. Without the customer understanding the dramatic shortage of the highly skilled professionals and the need for the professionals to implement and maintain their business infrastructure the business model does not work. There is a disconnect between what the customer is willing to pay and what the information technology industry can supply.

5 RECOMMENDATIONS

5.1 Capitalization of the Company

A capital infusion of \$250,000.00 US is being pursued from an angel investor to allow the company to grow. This angel investor and the owner have an agreement in principal pending resolution of due diligence items and the final terms and conditions of this investment.

With a substantial capital injection, the company would be ready to pursue an increase in sales. Managed carefully, the incremental investment requirement is sufficient to support a high sales growth rate. As the sales growth rate comes down, the funds from operations will be sufficient to finance further sales growth into the future. This will result in a positive growing free cash flow in the company and a sustainable growth rate. This strategy has tremendous benefits to the shareholders. Shareholders wealth is increased greatly in all areas except dividends. There is positive growth in earnings per share, positive growth in total profits and positive growth in shareholders' equity. As the company does not payout dividends, there is zero growth in dividends per share, all the profit is used as an incremental investment into the business.

5.2 Recruitment, Retention and Compensation

Perceptron Technology Inc. next needs to address the recruitment, retention and compensation of highly skilled personnel with the specialized knowledge required to implement and maintain business infrastructure and the business application solutions. Perceptron Technology Inc. must lock in key personnel with very high levels of expertise and place these personnel in key positions to handle many MCSEs. These key managers will be responsible for not only the product implementation and support successes the company needs to create customer

loyalty, but must handle the inevitable turnover of MCSEs as they move on in the general information technology industry. These MCSEs are attracted to the size, responsibility and pay levels in the larger industry.

The senior management of Perceptron Technology must realize that this function is not one of their core competencies. It needs to be outsourced to a company that specializes in human resource management and is capable of teaching the senior management how and what to do to attract and retain the highly skilled people the company needs. At first the human resources company will function as human resources department of Perceptron Technology and will provide all the interviewing, compensation and training information needed. After the company grows to a critical mass where the company is able to hire new personnel through funds from operations, this function will be in-sourced with a single person but with a connection to this external human resources management company. This will keep the company from spending time and resources on learning a new core competency when it is not needed until the future. The senior partners can concentrate on what they do best, helping small business customers.

5.3 Corporate Business Model

The final recommendation is to change the corporate business model from a time and materials pricing model to a fixed price project pricing model evolving into a long-term subscription pricing model. This will allow the company to increase margins and grow revenue. By only specializing in certain types of projects and doing these projects enough times in enough different situations, the company will know how long it will take and which variables effect the schedule and the costs. After a period of time there is no more learning curve, the projects are done quickly, and the company is able to quote a competitive, yet profitable price. The specialized expertise will enable the company to adhere to a very high standard of quality, so all

the customers will be happy and this will lead to more referrals for similar projects. This will stabilize both revenues and costs and make future revenues and costs predictable.

Turning this strong stream of referrals into long-term contracts that pay a monthly subscription fee to provide ongoing maintenance and management services would further enhance the bottom line. By the end of a given year, at least half of the following year's revenues would be known. This would enable the company to grow from funds from operations without the need for further capital infusions.

With this in consideration, the company needs to systematize the approach and teach most of the techniques to less skilled, less expensive personnel. This would enable the company to handle a large number of projects at once, each involving only a fraction of the time and resources. A steady stream of revenue from these long-term subscriptions would allow the company to retain a few highly skilled technical managers with all the needed skills to implement and maintain the business solutions for many customers. These managers would hire and supervise many less skilled personnel and nurture them into the highly skilled professionals the company needs to overcome the scarcity of these personnel in the industry. These less skilled personnel will inevitably move to bigger companies, but the company must realize this is the industry cycle of a scarce resource.

This would allow the company to rely less on the economy of scope from highly skilled personnel and move to economy of scale from standardized business solutions with a small set of highly skilled personnel and a larger set of transient network technicians who can be easily replaced. The required skill set of these professionals will be lowered, as the specialization comes from the general expertise of the few highly skilled professionals. This division of labour will increase the effectiveness of the company with the customers and reduce the expertise requirement of all the personnel.

APPENDICES

Appendix 1 – Pro Forma Income Statement

Pro Forma Income Statement	CURRENT		FORECAST			
	2004	2005	2006	2007	2008	2009
Sales	261,858.8	275,475.5	289,800.2	304,869.8	320,723.0	337,400.6
Cost of sales	185,000.0	190,000.0	195,000.0	200,000.0	205,000.0	210,000.0
Gross profit	76,858.8	85,475.5	94,800.2	104,869.8	115,723.0	127,400.6
Operating expenses:						
Selling, general and administrative	62,479.0	64,000.0	66,000.0	68,000.0	70,000.0	72,000.0
Research and development	2,546.0	6,812.6	7,534.8	7,926.6	8,338.8	8,772.4
Depreciation expense	9,643.0	18,532.0	17,670.0	17,798.0	17,986.0	18,296.0
Total operating expenses	74,668.0	89,344.6	91,204.8	93,724.6	96,324.8	99,068.4
Operating income	2,190.8	(3,869.1)	3,595.4	11,145.2	19,398.2	28,332.2
Income before taxes	2,190.8	(3,869.1)	3,595.4	11,145.2	19,398.2	28,332.2
Provision for income taxes	386.0	(681.7)	633.5	1,963.8	3,418.0	4,992.1
Income before extraordinary items	1,804.8	(3,187.4)	2,961.9	9,181.4	15,980.3	23,340.1
Net income	1,804.8	(3,187.4)	2,961.9	9,181.4	15,980.3	23,340.1
Net income available for common dividends	1,804.8	(3,187.4)	2,961.9	9,181.4	15,980.3	23,340.1
Earnings per share - basic	\$ 0.02	\$ (0.03)	\$ 0.03	\$ 0.09	\$ 0.16	\$ 0.23
Common shares outstanding - basic	100,000.0	100,000.0	100,000.0	100,000.0	100,000.0	100,000.0
Number of Employees	5	5	6	7	8	9

Appendix 2 – Pro Forma Balance Sheet

Pro Forma Balance Sheet	CURRENT			FORECAST		
	2004	2005	2006	2007	2008	2009
<i>Assets</i>						
Current assets:						
Cash	50,187.8	58,702.3	68,226.9	81,026.4	99,069.1	123,621.8
Accounts receivable	15,187.8	15,977.6	16,808.4	17,682.5	18,601.9	19,569.2
Total current assets	65,375.6	74,679.9	85,035.3	98,708.9	117,671.0	143,191.0
Gross property, plant and equipment	56,451.0	64,851.0	73,251.0	81,651.0	90,051.0	98,451.0
Accumulated depreciation	12,133.5	32,913.5	47,707.0	59,599.2	69,981.1	79,561.0
Net property, plant and equipment	44,317.5	31,937.5	25,544.0	22,051.8	20,069.9	18,890.0
Total assets	109,693.1	106,617.4	110,579.3	120,760.7	137,740.9	162,081.0
<i>Total liabilities and shareholders' equity</i>						
Current liabilities:						
Accounts payable	7,888.3	8,000.0	9,000.0	10,000.0	11,000.0	12,000.0
Total current liabilities	7,888.3	8,000.0	9,000.0	10,000.0	11,000.0	12,000.0
Total long-term liabilities	0.0	0.0	0.0	0.0	0.0	0.0
Shareholders equity:						
Common stock	100,000.0	100,000.0	100,000.0	100,000.0	100,000.0	100,000.0
Retained earnings	1,804.8	(1,382.6)	1,579.3	10,760.7	26,740.9	50,081.0
Total shareholders' equity	101,804.8	98,617.4	101,579.3	110,760.7	126,740.9	150,081.0
Total liabilities and shareholders' equity	109,693.1	106,617.4	110,579.3	120,760.7	137,740.9	162,081.0
Working capital	57,487.3	66,679.9	76,035.3	88,708.9	106,671.0	131,191.0
Working capital - operating	7,299.5	7,977.6	7,808.4	7,682.5	7,601.9	7,569.2
Net assets	101,804.8	98,617.4	101,579.3	110,760.7	126,740.9	150,081.0
Net assets - operating	51,617.0	39,915.1	33,352.4	29,734.3	27,671.8	26,459.2
Common equity	101,804.8	98,617.4	101,579.3	110,760.7	126,740.9	150,081.0
Capitalization	101,804.8	98,617.4	101,579.3	110,760.7	126,740.9	150,081.0

Appendix 3 – Pro Forma Cash Flow Statement

Pro Forma Cash Flow Statement	CURRENT	FORECAST				
	2004	2005	2006	2007	2008	2009
Cash flow from operating activities:						
Net income	1,804.8	(3,187.4)	2,961.9	9,181.4	15,980.3	23,340.1
Depreciation and amortization	9,643.0	18,532.0	17,670.0	17,798.0	17,986.0	18,296.0
Change in working capital:						
Change in accounts receivable	(15,187.8)	(789.8)	(830.8)	(874.1)	(919.4)	(967.3)
Change in accounts payable	7,888.3	111.7	1,000.0	1,000.0	1,000.0	1,000.0
Change in working capital	(7,299.5)	(678.1)	169.2	125.9	80.6	32.7
Net cash provided by operating activities	4,148.3	14,666.5	20,801.1	27,105.3	34,046.8	41,668.8
Cash flow from investing activities:						
Capital expenditures	(56,451.0)	(7,200.0)	(7,200.0)	(7,200.0)	(7,200.0)	(7,200.0)
Other changes in net property, plant and equipment	2,490.5	1,048.0	(4,076.5)	(7,105.8)	(8,804.1)	(9,916.1)
Net cash used for investing activities	(53,960.5)	(6,152.0)	(11,276.5)	(14,305.8)	(16,004.1)	(17,116.1)
Cash flow from financing activities:						
Change in common stock	100,000.0	0	0	0	0	0
Net cash provided by financing activities	100,000.0	0	0	0	0	0
Change in cash	50,187.8	8,514.5	9,524.6	12,799.5	18,042.7	24,552.7
Beginning cash	0	50,187.8	58,702.3	68,226.9	81,026.4	99,069.1
Ending cash	50,187.8	58,702.3	68,226.9	81,026.4	99,069.1	123,621.8

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