

STRATEGIC ANALYSIS OF ABC SYSTEMS AND ITS POTENTIAL FUTURE PRODUCT

by

Nancy M. Lam
Certified General Accountant 1997

PROJECT SUBMITTED IN PARTIAL FULFILLMENT
OF THE REQUIREMENTS FOR THE DEGREE OF

MASTER OF BUSINESS ADMINISTRATION

In the
Faculty
of
Business Administration

EMBA

© Nancy M. Lam 2006

SIMON FRASER UNIVERSITY



Summer 2006

All rights reserved. This work may not be reproduced in whole or in part,
by photocopy or other means, without permission of the author.

APPROVAL

Name: Nancy M. Lam

Degree: Master of Business Administration

Title of Project: Strategic Analysis of ABC Systems and Its Potential Future Product

Supervisory Committee:

Neil Abramson, Ph. D.
Senior Supervisor
Associate Professor of Strategic Management

Ed Bukszar, Ph. D.
Second Reader
Associate Professor of Strategic Management

Date Approved:

August 11, 2006



SIMON FRASER
UNIVERSITY **library**

DECLARATION OF PARTIAL COPYRIGHT LICENCE

The author, whose copyright is declared on the title page of this work, has granted to Simon Fraser University the right to lend this thesis, project or extended essay to users of the Simon Fraser University Library, and to make partial or single copies only for such users or in response to a request from the library of any other university, or other educational institution, on its own behalf or for one of its users.

The author has further granted permission to Simon Fraser University to keep or make a digital copy for use in its circulating collection, and, without changing the content, to translate the thesis/project or extended essays, if technically possible, to any medium or format for the purpose of preservation of the digital work.

The author has further agreed that permission for multiple copying of this work for scholarly purposes may be granted by either the author or the Dean of Graduate Studies.

It is understood that copying or publication of this work for financial gain shall not be allowed without the author's written permission.

Permission for public performance, or limited permission for private scholarly use, of any multimedia materials forming part of this work, may have been granted by the author. This information may be found on the separately catalogued multimedia material and in the signed Partial Copyright Licence.

The original Partial Copyright Licence attesting to these terms, and signed by this author, may be found in the original bound copy of this work, retained in the Simon Fraser University Archive.

Simon Fraser University Library
Burnaby, BC, Canada

ACKNOWLEDGEMENTS

I would like to thank everyone at ABC, current and past, for all the encouragement and support, you have given me throughout this program.

I would like to thank my family, Kerry, Judy, Gary, Angela, Gordon, Debbie, Grant, Bonnie, Gregory and Winnie, for all the emotional and babysitting supports you have given me. I would also like to thank you for taking care of grandma, mom and dad when I was unable to do my share. Judy and Grant, thanks for all your help during the last 2 years and especially during the last stretch.

I would like to thank my father, Joe W. Chan and mother Shui Ha Chan for helping with the girls on those Friday night overnights.

Special thanks to Gordon for helping me understand all the techno-jargon and for playing a significant part in my successful completion of this project.

Special thanks to Debbie J. Mazo, who dropped everything every time I needed help.

TABLE OF CONTENTS

Approval	ii
Abstract	iii
Dedication	iv
Acknowledgements	v
Table of contents	vi
List of Figures	viii
List of Tables	ix
Glossary	x
1 INTRODUCTION	1
1.1 ABC Systems Ltd.....	2
1.2 Current Industry: Transaction Networks	2
1.3 Current Strategy.....	4
1.3.1 Product Strategy	5
1.3.2 Research and Development Expenditure	6
1.3.3 Organizational Structure	7
1.3.4 Decision Making	7
1.3.5 Software Development.....	7
1.3.6 Labour	8
The Problem.....	10
2 EXTERNAL ANALYSIS OF BUSINESS ACTIVITY MONITORING	13
2.1 New Market Definition.....	13
2.2 Industry Analysis.....	18
2.2.1 Threat of Entry – Moderate to High.....	21
2.2.2 Lack of Dominant Player	24
2.2.3 Bargaining Power of Customers – Low to Moderate.....	24
2.3 Threat of Substitutes – Low	26
2.3.2 Bargaining Power of Suppliers – Moderate	29
2.4 Value Chain Analysis – Business Activity Monitoring.....	30
2.4.1 New Product Research and Development	31
2.4.2 Manufacturing	33
2.4.3 Marketing and Branding.....	33
2.4.4 Sales and Distribution	34
2.4.5 Technical Support and Training.....	36
2.5 Industry Attractiveness.....	37
2.6 Summary of Key Success Factors	38
2.6.1 Rivalry Among Existing Competitors - Low to Moderate.....	40

2.7	Competitive Rivalry: ABC vs. Potential Competitors.....	42
2.7.1	Integrated Research.....	42
2.7.2	Celequest.....	44
2.7.3	Competitor Comparison.....	45
2.8	Opportunities and Threats.....	48
2.9	Strategic Alternative.....	51
3	ANALYSIS OF INTERNAL ENVIRONMENT, CAPABILITIES AND RESOURCES.....	53
3.1	Management Preference.....	53
3.1.1	Decision criteria.....	53
3.1.2	Capabilities.....	55
3.1.3	Mind-sets.....	57
3.2	Organizational Capabilities Analysis.....	58
3.2.1	Structure.....	58
3.2.2	Systems.....	59
3.2.3	Culture.....	61
3.3	Resource Analysis.....	63
3.3.1	Human Resources.....	63
3.3.2	Technological Resources.....	65
3.3.3	Financial Resources.....	66
3.4	Summary.....	70
4	RECOMMENDATIONS.....	71
4.1	Marketing.....	71
4.2	Research and development.....	73
4.3	Customer Relationship Management.....	74
4.4	Presales and support personnel.....	75
4.5	Systems and structure.....	75
4.6	Summary.....	77
5	REFERENCE LIST.....	79

LIST OF FIGURES

Figure 1-1 GPRS for Bisync ATMs	3
Figure 1-2 ABC Systems Limited's Strategy	4
Figure 1-3 ABC's Distribution of Expenditures.....	6
Figure 1-4 ABC Systems Revenue.....	10
Figure 2-1 BAM: Part of an Enterprise Nervous System.....	15
Figure 2-2 BAM Composite Market	17
Figure 2-3 Business Activity Monitoring Porter's Five Forces	20
Figure 2-4 Industry Value Chain - ABC Systems Limited	30
Figure 3-1 Organization Chart.....	58
Figure 3-2 BAM Revenue Projections	70
Figure 4-1 ABC Systems Revenue Distribution	74
Figure 4-2 Gartner Hype Curve.....	76
Figure 4-3 Revenue Projections	78

LIST OF TABLES

Table 2-1 Gartner Research: The Strategic Value of Business Intelligence	14
Table 2-2 Contribution of Value Chain Activities to the KSFs.....	41
Table 2-3 Competitor Comparison on KSFs	46
Table 3-1 Allocation of Resources	68
Table 3-2 ABC Customer Distribution.....	69

GLOSSARY

ATM	Automated Teller Machine
BAM	Business Activity Monitoring
BI	Business Intelligence
CEP	Complex Event Processing
CRM	Customer Relationship Management
ENS	Enterprise Nervous System
GPRS	General Packet Radio Service
IP	Internet Protocol
KSFs	Key Success Factors
KPI	Key Performance Indicators
SDTN	Short Duration Transaction Networks
SCM	Supply Chain Management
SI	Systems Integrators
POS	Point of Sale

1 INTRODUCTION

The purpose of this document is to analyze the current strategy of ABC Systems Limited and align its core competencies with a potential new product and market. The company developed a complex event processing (CEP) technology that was applied to the quality control process in the production of computer chips. This hardware and software product line was a custom job used to generate revenue while continuing to develop its CEP expertise. To capitalize and leverage ABC's previous efforts in the development of CEP and other technologies as well as its transaction network knowledge, a market that uses these technologies needs to be identified. CEP technology allows extracting and analyzing information from any kind of distributed message base system.¹ CEP allows processing of information from several transactions that are occurring simultaneously. Since "basic BAM uses simple event or very simple collection of events to trigger rules that notify you of situations on your information technology (IT) that may affect your business".² ABC can apply its CEP technology and legacy knowledge along with its transaction network experience to a business activity monitoring (BAM) product for the transaction processing industry. The focus of this paper will be to identify and mitigate any internal capability gaps that may prevent ABC from being successful in the BAM industry. It will also identify any opportunities in this new area, of which ABC may take advantage.

¹ <http://pavg.stanford.edu/cep>. (accessed July 2006)

² David Luckman, "The Beginning of IT Insight: Business Activity Monitoring", (2004) <http://www.ebizq.net/topics/bam/features/4689.html?page=3> (accessed July 2006)

1.1 ABC Systems Ltd.

ABC was formed in 1997 as a privately-owned data communication systems company. ABC is a provider of software and hardware for short duration transaction networks (SDTN) and e-transaction processing. More specifically, it delivers multi-protocol network products for real-time transaction enterprises.³ ABC has remained in the protocol conversion industry for transaction networks since its inception but has been unable to move beyond its niche market. Currently, ABC is not involved in the BAM market but has developed some complementary technologies that can be used in a potential BAM product. However, ABC is designing and developing a BAM product.

1.2 Current Industry: Transaction Networks

As part of the data communication systems industry, ABC provides SDTN—these are quick connections between devices. SDTN are separated into two segments: mission critical and best effort to delivery.

ABC specializes in the mission critical area. The main characteristics of mission critical transactions are: 1) they have high call rates; 2) they have short call durations and; 3) they may have high peak loads. SDTN are crucial for businesses since failure can result in loss of sales, damage of equipment, or even loss of life. All types of industries use short duration networks including banking, retail operations, healthcare, and inventory management. For example, a banking automated teller machine (ATM) network consists of several smaller parts that run different protocols. However, in order for the network to function together, the protocols must be

³ www.abcsystemslimited.com This company website does not exist as it is a pseudonym.

converted to the same software language. Figure 1-1 shows an example of ABC's current product.

Figure 1-1 GPRS for Bisync ATMs⁴

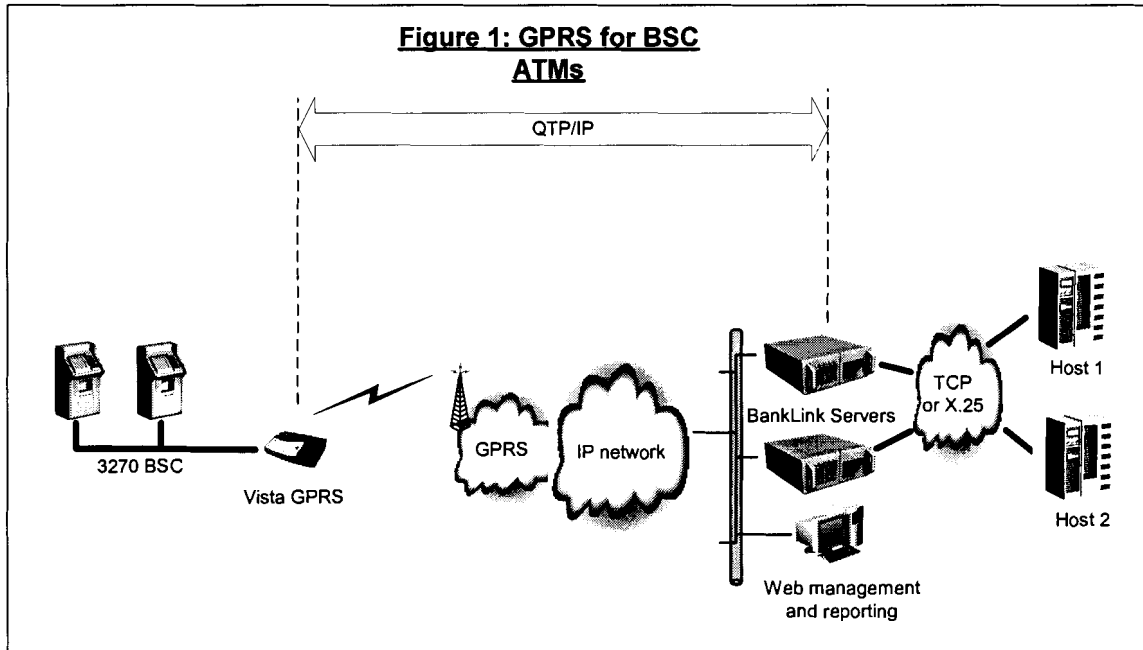


Figure 1-1 shows two areas where protocol or software language conversion is required. In this example, the host runs on TCP or X.25 (which are languages or protocols) and must communicate to the Internet Protocol (IP) network. Meanwhile, ABC's software, installed on the servers that are located in between the hosts and the IP network, allows the two protocol languages to communicate. In addition, ABC's protocol conversion software sits on the Vista GPRS terminal adapter to allow the ATM's running on the 3270 bisync protocol to communicate with the IP network.

ABC is a known player in the transaction networking industry. It has developed numerous partners and relationships with resellers and has customers in 48 countries from

⁴ Adopted from ABC Systems Limited with permission

Australia to Zimbabwe. ABC has worked on numerous configurations of the transaction networks for the different countries. Customers include systems integrators (SI), financial institutions, switch providers, telephone companies, and multi-chain retailers.

1.3 Current Strategy

Software companies typically follow one of two strategies: differentiation or cost-based. While most software companies follow a differentiation strategy, ABC's has traits of both differentiation and cost-based strategies. Figure 1-2 illustrates the quasi-differentiation strategy, which shows that ABC is skewed towards differentiation. To help analyze and identify the strengths and weaknesses of ABC's differentiation strategy, this paper will examine ABC's current footprint within the key indicators of strategy.

Figure 1-2 ABC Systems Limited's Strategy⁵

		1	2	3	4	5	6	7	8	9	10	
	Cost Based	-----										Differentiation
	<i>Low Cost/ Adequate Quality</i>											<i>High Quality/ Adequate Cost</i>
Product Strategy	<i>Rapid Follower</i>							*				<i>Innovative</i>
R & D Expenses compared to sales	<i>Low R&D</i>									*		<i>High R & D</i>
Organizational structure	<i>Centralized</i>				*							<i>Decentralized</i>
Decision Making	<i>Less Autonomy</i>			*								<i>Autonomy</i>
Software development	<i>Economias of Scale</i>								*			<i>Economias of Scope/Flexible</i>
Labour	<i>Mass Production</i>									*		<i>Highly Skilled / Flexible</i>
Marketing	<i>Comparative / Push</i>			*								<i>High Cost / Pioneering / Pull</i>
Risk Profile	<i>Low-Risk</i>									*		<i>High-Risk</i>
Capital Structure	<i>Leverage</i>						*					<i>Conservative</i>

⁵ Adopted from Bukszar, E. 2006. Course notes from Bus607 EMBA Program Simon Fraser University

1.3.1 Product Strategy

ABC's product strategy is classified as innovative. Products are developed with focus on technology gaps and future technology needs. In the past, ABC has demonstrated its ability to identify and address technology needs by using the following leading edge technology-based products and concepts:

- a. Developed open platform software products. While other companies developed their software products on proprietary software platforms, ABC used a Windows-based open system platform that offers compatibility with other operating systems. This is attractive to customers because they did not have to learn a new protocol and could continue using existing and readily available skills to manage ABC's products.
- b. Developed software products that addressed the growing number of protocols used in the banking industry, and anticipated the need for the different platforms to communicate with each other. ABC identified this 'niche' market and built its first conversion software over 20 years ago.
- c. Developed a simple interface of TCP protocol into transaction communications when other solutions were more complex and less ubiquitous.
- d. Recognized that new transaction applications are all TCP-based, but still needed to communicate to the existing non-TCP networks.

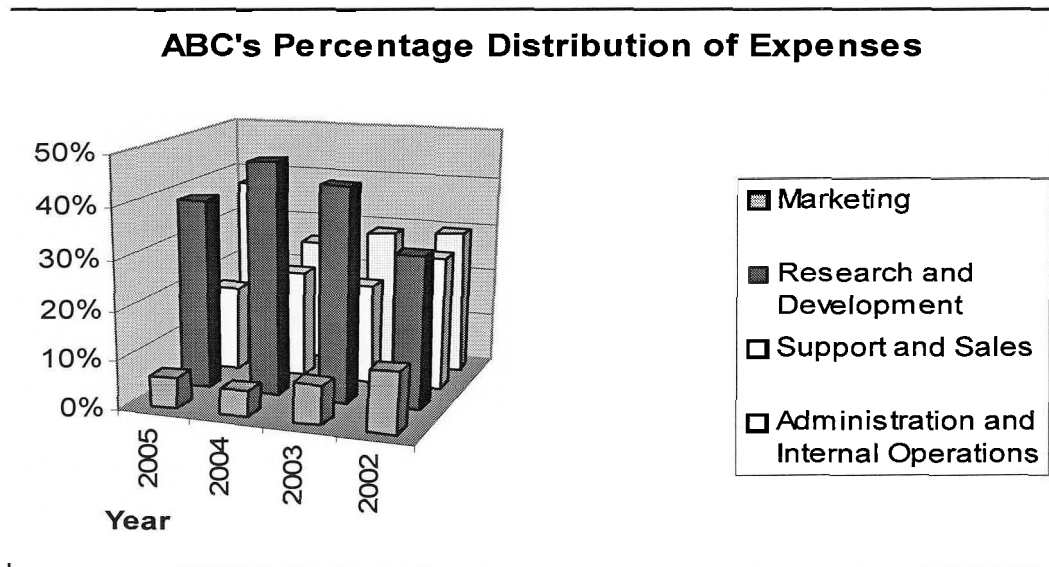
1.3.2 Research and Development Expenditure

As a research and development (R&D), intensive organization, ABC invests an average of 45 percent of its revenue on R&D, which accounts for an average of 50 percent of total expenses—R&D accounts for an average of 30 percent of total expenses for other software companies. ABC measures its R&D success on products meeting market needs with feedback from customers.

Although ABC invests heavily in R&D, some products were unsuccessful and were developed at a very high opportunity cost. For example, although ABC developed specific features for its software, the target market did not see the value of the additional functionality and was unwilling to pay the extra price.

Figure 1-3 shows ABC's distribution of expenditures from the years 2002 to 2005.

Figure 1-3 ABC's Distribution of Expenditures



1.3.3 Organizational Structure

ABC continues to be a private, employee-owned company. Originally, one of the founders (the VP of R&D) owned 65 percent of the shares. Due to its size and culture, ABC has a flat organizational structure. The company has only a few tiers of management and encourages direct reporting. Consequently, the company is very centralized and the majority shareholder and the president have complete control. According to Figure 1-2, this lack of autonomy indicates a cost-based strategy.

1.3.4 Decision Making

Like other small companies, there is little autonomy within ABC. Major financial and strategic decisions are made quickly by the president and the major shareholder resulting in a short turnaround time between decision making and execution.

Centralization can mean decisions are always made in the same conservative manner. In addition, a problem with centralized decision making and control is that employees do not have autonomy, which is recommended for a differentiation strategy with highly skilled employees. This type of decision making also affects the quality of employees willing to work in a company. Creative R&D differentiated employees do not want to work in such an environment; therefore, ABC employees may not be as autonomous, creative, or capable.

1.3.5 Software Development

When ABC created its AB Connect software, it adopted an open system platform and developed a flexible software architecture. Although this software was initially developed for the financial market, its open system and flexible architecture has allowed ABC to apply the protocol

conversion software to different vertical markets. These markets include retail, healthcare, and loyalty program industries. Due to the similarities in the networks of the different verticals, ABC was able to capitalize on the economies of scope. In the past, the norm was for software to be developed as proprietary software that may not be compatible with other platforms. However, ABC did not go this route and decided the open source platform would be more adaptable.

1.3.6 Labour

ABC requires that the labour force be at least computer literate—from administration positions to software programmers. The skill set required in the R&D department, is highly technical and employees must be proficient in many protocol development languages, including legacy software. Meanwhile, sales people and customer support staff must have people skills and technical skills—in addition to dealing with technical customers like the SI and the end users, they must also deal with the less technical business decision makers. Maintaining a constant labour force is a major ongoing concern because training is costly and time-consuming. The knowledge of legacy technology is also becoming obsolete because newer graduates study the most current protocols.

1.3.6.1 Marketing

ABC has done little in the form of marketing and advertising, which is likely due to the lack of resources (see Figure 1-3). ABC's past efforts have included mail outs, press releases, and Internet storefronts such as ATMarketplace. Its software is very specific and not classified as an impulse buy, which means that increased expenditure on advertisement may not lead to increased sales. Sales are rarely made directly to the end users; software is normally sold through Tier 2 channels such as SI or switch providers. This low expenditure on marketing reflects a cost-

based strategy and is in conflict with ABC's primary differentiation strategy. Unfortunately, the financial resources and lack of marketing has limited ABC's growth, reach, and penetration into its transaction processing industry.

1.3.6.2 Risk Profile

The financial risk involved is considered average because little inventory and overhead costs are required. The business risk of such a niche area is moderate to high as niche market players eventually are squeezed out or are integrated into the surrounding pieces of the overall network infrastructure. The overwhelming risk is the technology risk—more specifically, the risk of the legacy technology that is currently used in business networks, becoming obsolete at a faster than expected rate. ABC's current products allow the legacy protocols to connect to the newer Internet Protocol (IP) devices. As companies move to an all IP network, the need for ABC's protocol conversion product is eliminated.

1.3.6.3 Capital Structure

ABC's current capital structure is considered conservative—it has little debt and one non-employee external investor. ABC has experienced declining revenue for the past five years and has exhausted its equity base, resulting in the need to introduce some debt in the form of bank loans. The reliance on debt is intended to be temporary and it is expected to revert to conservative capital structure that does not rely on debt financing. Profit from its next star product should allow ABC to revert to its conservative capital structure.

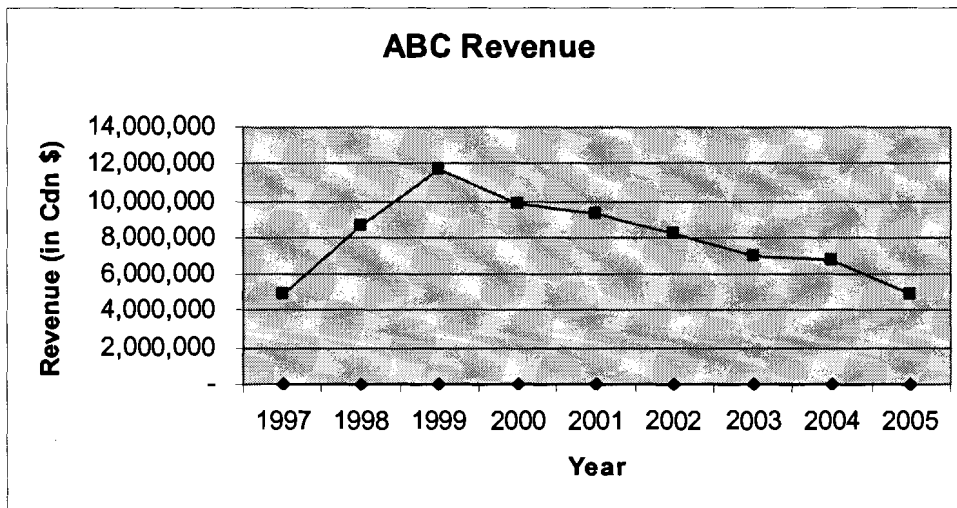
1.3.6.4 Summary

In summary, like most software companies, ABC follows a differentiation strategy but also shows some traits of a cost-based strategy due to its private ownership. This hybrid strategy does not appear to be working for ABC and its lack of funds and focus has caused the company to grow and shrink several times in the past eight years. Also, ABC's lack of marketing and its centralized decision making process is preventing it from fully realizing a differentiation strategy. In order for ABC to succeed in the future, it must address these two areas. Otherwise, the two strategies will interfere with each other and make the ultimate strategy less efficient and effective.

The Problem

Figure 1-4 shows that ABC's revenue has declined for six consecutive years.

Figure 1-4 ABC Systems Revenue



The main factor contributing to ABC's falling revenue appears to be the decline in the demand for ABC's product. As companies are initiating a full IP network, the protocol conversion market will continue to decrease and ultimately disappear in the local and more developed markets.

Due to the decline of its target niche industry, ABC must apply its resources to develop products for growing and profitable industries, such as the BAM market. After gathering feedback from current protocol conversion customers, ABC has recognized the need for a BAM-like product for transaction network customers. These customers have been unable to find a product on the market that meets their needs or afford the existing products that are still unproven to meet their needs.

ABC must develop its next product line while its current products are still profitable. Time is running out as the acceptance and adoption of the TCP/IP standard becomes the norm. The company has dabbled in hardware products in the past but these have not been as profitable as its software products.

ABC must focus on creating the best BAM product based on the feedback it has gathered. Using its transactions knowledge and CEP technology, ABC is developing a BAM product for transaction networks.

1.3.6.5 DECISION CRITERIA

When ABC's management team evaluated this potential BAM product, it based the product on the following decision criteria:

1. The product must consist of software only.
2. Investment capital must be minimal and capped at \$1,500,000 Canadian.

3. ABC must use its past knowledge and core competencies relating to low latency, transactions networks, high volume, and mission critical transactions⁶
4. ABC must take advantage of its existing customer base and contacts.

The BAM product appears to meet the above criteria. As part of the business intelligence area, BAM allows real-time transaction processing and monitoring, which are areas in which ABC has developed some expertise. Using Porter's Five-Force Industry Analysis model to analyze this industry as well as a value chain analysis, key success factors (KSFs) can be identified for the BAM industry. The KSFs can be used to evaluate ABC's new BAM product against existing, rival products helping to identify opportunities and threats. ABC must be competitive in the external environment to succeed once the competitive plan is established and the internal capabilities are evaluated.

A proposal at the end of this analysis will be made on the different options available to increase ABC's chances of success in the BAM industry. In Chapter 3, ABC's internal capabilities for implementing the proposed options will be discussed and the strengths and weaknesses will be identified. The final chapter will suggest ways to align and change ABC's current hybrid strategy to one that is more effective and more likely to succeed in the BAM market.

⁶ Low latency –low latency allows human-unnoticeable delays between an input being processed and the corresponding output providing real time characteristics. Transaction network – computer networks specifically for transactions Mission critical transaction – a transaction that cannot fail

2 EXTERNAL ANALYSIS OF BUSINESS ACTIVITY MONITORING

2.1 New Market Definition

BAM is real-time reporting, analysis, and alerting of significant business events, accomplished by gathering data, key performance indicators, and business events from multiple applications.⁷ BAM is used alongside an enterprise's current application systems, although some vendors have integrated BAM functionalities in their software solutions. BAM assists managers and operational staff in their daily decision making activities. Table 2-1 shows that BAM is used with other tools like spreadsheets and reports and is considered of medium to high strategic value. Many companies are adopting BAM products to manage their businesses and business units more proactively. BAM products help functional managers predict failures before they are escalated to cause serious damage.

When designing and implementing a BAM solution, rules are determined with respect to key performance indicators (KPI) which need to be monitored. KPI data is gathered and monitored simultaneously and compared to the established rules. If there are discrepancies from the rules, an alert is sent to the designated people responsible. Plans of action are outlined with each different alert received.

⁷ H. Dresner, "Business Activity Monitoring: BAM Architecture", (Gartner Symposium ITXPO 2003), 3

Table 2-1 Gartner Research: The Strategic Value of Business Intelligence⁸

Gartner Research: The Strategic Value of Business Intelligence

	IT	Power Users	Executives	Functional Managers	Occasional Information Consumers	Extranet, Partners, Customers
Number of Users	Few	Dozens	Dozens	Dozens to Hundreds	Hundreds to thousands	hundreds to thousands
BI Tools and Functions	Developer, Admin, Metadata, Security, Data management	ad hoc query, OLAP, Reports, Data mining, Advance analysis	Dashboard, scorecard, Reports, CPM,	Reports, Spreadsheets, OLAP views, BAM , CPM,	Reports, Spreadsheet	Report
Strategic Value		High	High	Medium	Low	High

←----- Intranet -----→ Extranet

BAM: Business Intelligence CPM: Corporate Performance Management
 BI: Business Intelligence OLAP: Online Analytical Processing

Enterprises have numerous applications that assist managers and line operators. In the past, event data is gathered and then analyzed after the fact by comparing current to historical data. Problems or deficiencies are identified after the fact. A delayed response or action is then taken to address the abnormal event or activities. With BAM, ongoing or real-time monitoring is in place. BAM provides real-time access to critical business performance indicators to improve the speed and effectiveness of business operations.⁹ Meanwhile, BAM gathers its information from multiple application systems and other internal and external (inter-enterprise) sources, which should enable a broader and richer view of business activities.¹⁰

⁸H. Dresner, B. Hostmann, *Magic Quadrants for Enterprise BI Suites and Platforms, 2H04I*, (Gartner Research, November 29th, 2004), 3 as quoted in P. Clark, *Strategic Analysis of Business Objects Versus Cognos Incorporated, Providers of Business Intelligence Software*, (2005), 53

⁹D. McCoy, *Gartner Business Activity Monitoring: Calm Before the Storm*, (Gartner Research, April 1, 2002), 1

¹⁰D. McCoy, *Gartner Business Activity Monitoring: Calm Before the Storm*, (Gartner Research, April 1, 2002), 1

Figure 2-1 shows that BAM fits well into an enterprise with different layers of systems. BAM is used in conjunction with business monitoring, integration brokering, and messaging gateway. It draws its information from all of the different layers.

Figure 2-1 BAM: Part of an Enterprise Nervous System¹¹

BAM : Part of an Enterprise Nervous System

Business Activity Monitoring	Event and State Monitoring	Security and Directory	Management Tools	Development Tools	Metadata Management
Business Monitoring	Business Process Management				
Integration Broker	Intelligent Routing				
Messaging Gateway	Communcation Data Movement				

Business Activity Management : BAM Architecture, Gartner Symposium ITXPO 2003, Dresner, Howard

Figure 2-1 also shows that BAM is used in conjunction with an enterprise's other applications and systems. BAM is not a stand-alone solution. For example, the historic data gathered from the monitoring of an ATM's transaction network might reveal that there are typically 10 transactions that take place at location A between the time of 1 am and 2 am. However, if there are no transactions between 1 am and 2 am on a particular day, the BAM system could be programmed to send an alert to investigate whether this ATM is off line, out of bills, and so on. A non-functioning ATM is loss of business to the ATM provider. In this

¹¹ H. Dresner, "Business Activity Monitoring: BAM Architecture", (Gartner Symposium ITXPO 2003), 7

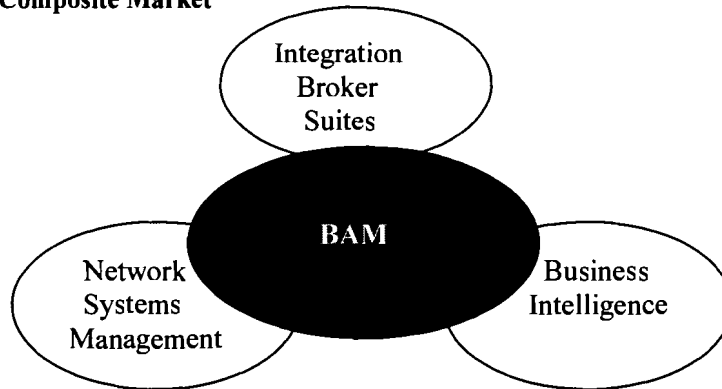
example, the activity that is being monitored is the number of ATM transactions, and the key performance indicator is the ten transactions that normally take place between 1 am and 2 am.

The rule is if there are fewer than the 10 transactions that normally take place within this time period, then an alert is sent to the person in charge of this area. The person in charge has certain rules that must be followed to look into what is happening with this particular ATM. This immediate alerting of a malfunctioning ATM decreases the downtime and the loss of revenue provided by that particular ATM. This example outlines the rules for the KPI and the actions taken if the rules are not met.

BAM is not a solution to integrate an enterprise's numerous applications. BAM gives management a tool to combine all the information from the applications within all the various departments and allows for a proactive and predictive management style. With BAM, management is able to predict and take preventive means to mitigate any potential losses or inefficiencies. Furthermore, BAM can be used to detect potential opportunities. While alerting is one part of the BAM solution, the key to capitalizing on BAM is its immediate and timely response to problems.

BAM is a composite market and not a market by itself, according to the Gartner Group. Figure 2-2 shows the three areas of the BAM composite market.

Figure 2-2 BAM Composite Market



Source Gartner Dataquest (February 2002)¹²

Enterprise integration broker suites will gain a large part of the BAM market as the events that are being monitored flow through its products. Meanwhile, business intelligence and data warehousing vendors will also do well because they provide reporting and analytical functionality. Finally, network systems management or information technology operators will be able to capitalize on this market because their products already work with events and rules in real time. SI will also benefit since they are the experts doing the migration work. “Pure-play vendors with stand-alone and complete solutions will be an important early adopter source of technology, and will feed the acquisition hunger of well-established software vendors that intend to add BAM functions to their products.”¹³

The need for BAM will be different for each user. BAM is a tool to optimize an enterprise’s performance and correlate business events to key performance indicators. BAM solutions currently provide the following features:

- a) Real-time monitoring of business events related to key performance indicators;
- b) Analytical capabilities and management dashboards;

¹² J. Correia, N. Schroder, *BAM: A Composite Market View*, (Gartner Research, April 1, 2002), 3

¹³ H. Dresner, “*Business Activity Monitoring: BAM Architecture*”, (Gartner Symposium ITXPO 2003), 5

- c) Complex event correlation; and
- d) Predictive capabilities.

Purchasers of BAM products are looking at ways of being more responsive. They prefer to move from a reactive to a more predictive management style where they can anticipate irregular activities before they escalate to full-blown problems. BAM solutions have the following functions. They 1) connect into enterprise applications; 2) collect data as they occur (real-time); 3) monitor or watch for problems and opportunities and; 4) notify the process owners.

The BAM market appears to be a good fit for ABC because it is an emerging market with great potential. According to Gartner analyst, Bill Gassman, "... BAM could be a \$2B business by 2008, up from \$100M today" (July 26, 2005)¹⁴. This represents substantial growth over these three years. An industry analysis will be conducted to determine if ABC will be able to succeed in the BAM market

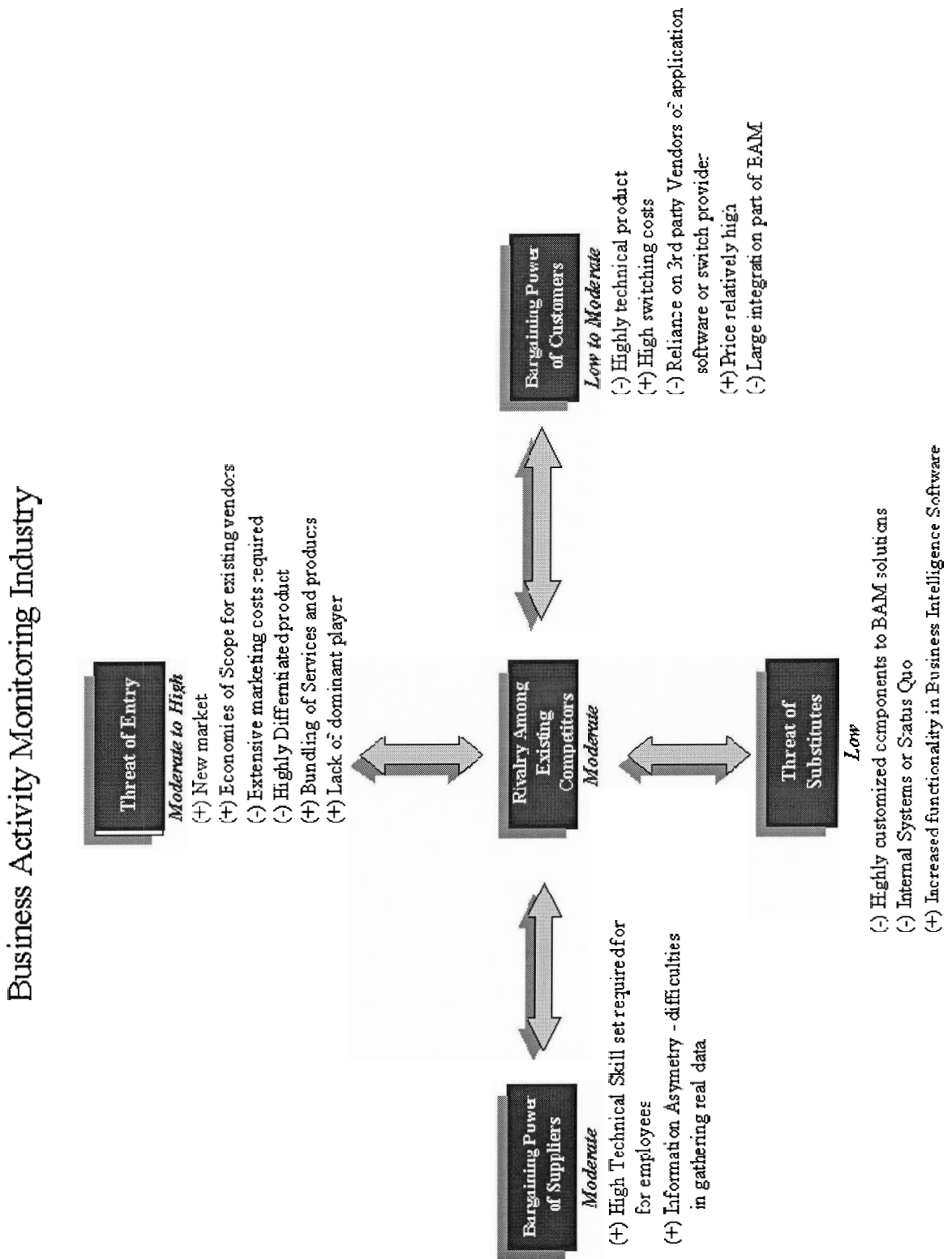
2.2 Industry Analysis

To determine the opportunity and threats of this newly identified market, Michael Porter's Five Force Industry Analysis model will be used. This model analyzes the five forces that influence the market. These factors are threat of entry, bargaining power of buyer, threat of substitutes, bargaining power of supplier, and rivalry among existing competitors. The five forces independently affect the market: the higher or stronger the affect, the less desirable the market is;

¹⁴O. Kharif, "The CEO's Tech Toolbox" *BusinessWeek Online*, July 26, 2005, http://www.businessweek.com/technology/content/jul2005/tc20050726_8027.htm.

the lower or weaker the effect, the more opportunity there is for vendors to profit. Figure 2-3 shows Porter's Five Forces affecting the BAM industry.

Figure 2-3 Business Activity Monitoring Porter's Five Forces



2.2.1 Threat of Entry – Moderate to High

Analysis of the threat of entry determines how desirable the industry is to current and new entrants, or how easily it is for new entrants to become players in this industry. The higher the threat, the more competitors there will be or already are.

2.2.1.1 New or Relatively New Market

“BAM will grow to become the major force driving application integration’s deployment and benefits. Vendors will depend on BAM for survival and enterprises will tout BAM for its competitive advantages. BAM is the next big thing that application integration vendors want and need”.¹⁵ BAM is a new and growing market, which makes it an attractive target for new start-ups. According to the Gartner Group, the BAM market is just starting to take off and will likely peak in 2008, when it will probably level off as more and more companies adopt BAM.

The relatively new and growing market increases the threat of entrants. One key barrier to entry is the extensive capital and human investment required to start up, as well as the research to develop a BAM architecture product. BAM solutions integrate and draw from several enterprise applications and a “one size fits all” blanket approach will not be appropriate for all users. Therefore, customization is important. Another barrier is the difficulty for small, unknown companies to earn confidence and trust from potential buyers. Having past business relationships add value when enterprises are building on to their current information systems. Finally, a lack of relationships and brand awareness might prevent new competitors from entering this market.

¹⁵D. McCoy, *Gartner Business Activity Monitoring: Calm Before the Storm*, (Gartner Research, April 1, 2002), 1

The passing of the Sarbanes Oxley (SOX) Act in the United States, which holds executives liable for actions and results of their companies, has fuelled and made this market even more attractive. BAM products are well received as key performance indicators are recognized and rules and actions are documented. Disasters can be avoided with the initial detection of a potential problem. Although BAM's alerting function is more geared to the operations and the managerial levels, and not the executive level, the executive level will likely use the dashboard capabilities to get a customized snapshot of how the company is doing. This allows problems to be identified quicker and earlier. For example, if certain transactions are taking place in a certain predetermined sequence, it may mean something illegal is happening. Managers are alerted before any real harm or further harm has taken place, such as in fraud detection.

2.2.1.2 Economies of Scope for Existing Vendors

A number of pure play vendors will see this as an opportunity to enter into an emerging market. Similar to ABC, existing business application providers will see an opportunity to tap into another revenue stream and will build BAM functionalities and capabilities into their current products as features to address the increased BAM awareness and need. These companies have capital infrastructure and human capital in place and, therefore, adding a new functionality or capability should not be as costly as new start-ups. Incorporating BAM capabilities as an add-on to existing applications will secure a smoother transition than if a third-party BAM product is introduced. On the other hand, since these BAM products are not developed by BAM experts, they may not be as good as ones developed by a third-party specialist.

2.2.1.3 High Marketing and Branding Cost

Differentiated products tend to have high marketing costs. Companies interested in investing in enterprise software, such as BAM, will be highly attracted to vendors they are

familiar with, or will tend to go with the “name brand” of the industry. For example, companies may choose Business Objects for a Business Intelligence application.

Because enterprise software affects many departments and reaches many users, purchasers try to mitigate their chances of incompatibility and increase their probability of a successful implementation and working solution by using solutions provided by known vendors. Regardless of size, a history or relationship with potential target users or key players in the business application market or switch provider market is advantageous.

2.2.1.4 Differentiated Products and Services from Vendors

The number of different players addressing the demand for BAM products is considered moderate. There are several pure play vendors currently in this space and this number is likely to grow as the market is still in its early stages according to ebizQ's.¹⁶ The current pure play vendors are focusing on a limited functionality of BAM, such as the monitoring of specific key performance indicators. Moreover, BAM solutions are not one size fits all, which has led to the establishment of specific players that address certain industries. For example, the financial market's needs for monitoring are different from those of a computer chip manufacturing plant.

2.2.1.5 Service and Product Bundling

The numbers of integration platform vendors that are extending their capabilities to include BAM functionality are considered moderate. Nonetheless, integration platform vendors continue to add the latest market demands to their product lines. For example, when the market demanded business processing management, integration platform vendors added this function to their products.

¹⁶ B Gold-Bernstein, “Speeding Toward Business Visibility,” *ebizQ*, January 29, 2006, http://www.ebizq.net/hot_topics/bam/features/6666.html?&pp=1 (assessed June 13, 2006)

2.2.2 Lack of Dominant Player

The competition in the BAM market and the transaction payment industry does not consist of any one dominant provider. Vendors are providing different BAM products; they are not exactly the same. Vendors have not captured a significant piece of this particular vertical. Although, there are a number of larger players, like Tibco, that have adopted BAM-like functionalities into their existing lines.

Overall Key Success Factor: Threat of Entry. Companies must have the following attributes: 1) Companies must have a good track record and a good reputation (branding) in the software industry and more specifically in the targeted vertical, and; 2) Companies must have and retain excellent customer and business relationships.

2.2.3 Bargaining Power of Customers – Low to Moderate

The higher the bargaining power of customers, the less power the vendor has. Again, the less power the vendor has, the less profit and less desirable the industry is.

2.2.3.1 Highly Technical Product May Limit Customer Power

BAM solutions integrate and draw information from numerous applications that enterprises may have. This may limit customer choices, as different vendors may not have the ability and expertise in all necessary applications. Although, start-ups may try to address and compete with the larger, established players, customers may not have confidence in using a new company for such an important aspect of their information system.

A high level of customization is necessary in BAM implementations. BAM providers may have expertise in certain industries, and this limits customer choices. There may be industry and enterprise specific applications that the BAM architecture must draw its information from. For example, the applications and software for manufacturing plants differ from those of an alarm monitoring company.

2.2.3.2 High Switching Cost Limits Customer Power

Switching costs for customers are considered moderate to high as time and design work is necessary in customizing the KPIs as well as the rules and actions that are taken. Once a working solution is in place, enterprises are unlikely to switch. Switching systems can be disruptive and can cause unnecessary down time to the enterprise's application and systems or the enterprise's "nervous system", according to the Gartner Group.

2.2.3.3 Large Integration Solutions Lower Customer Power

BAM is part of an enterprise's overall information system and, therefore, choosing and integrating a solution is costly and time-consuming. Purchasers take business relationships and cultural fit into consideration when choosing vendors. Using a single provider decreases disruption and unpredictability and increases confidence of having fully integrated and working solutions. Moreover, when a company decides to choose a different solution provider, the look and feel of the solution may not be what it is accustomed to.

Successful suppliers must take a proactive role in their customers' information technology requirements and try to foresee potential customer problems. Once a problem is identified, the vendor can derive a solution that can be smoothly integrated. For example, vendors can suggest ways to better manage and monitor their customer's data.

2.2.3.4 Reliance on Third-Party Vendors

Systems integrators are important and highly involved in the customization and implementation of a BAM solution. SI have preferred vendors that they choose to deal with. The involvement of the SI limits the choices of the customers. SI have built up relationships with certain suppliers and are more familiar and comfortable with these products. Since customers rely on the SI and their expertise, they will most likely choose whomever the SI recommends which, again, limits their choices.

2.2.3.5 Price of BAM Products Increase Customer Power

The price of BAM products, \$100,000 – \$500,000, is high as they are relatively new tools. The purchase and implementation of a BAM tool is costly and the return on investment is difficult to quantify. For example, how do you quantify the benefits from the early detection of a potential E.Coli problem in the water supply?

Overall Success Factors: Bargaining Power of Customers. Vendors must have the following: 1) A high level of technical experience as different verticals may limit company choices when they require additional IT capabilities, and; 2) A competitively priced product as the return on the investment is difficult to quantify and not immediately apparent.

2.3 Threat of Substitutes – Low

Substitutes are products that can take the place of the BAM solution. The more substitutes there are, the more competition the BAM product will have. If there is more

competition, the vendor will make less profit. With fewer substitutes, there will be a higher demand for BAM and thus more profitable for the vendors.

2.3.1.1 Highly Customized Components to BAM Solutions

BAM solutions are now considered tools to monitor and alert any trends in a company's business. The solution must be customized in several areas. The applications used by each enterprise run different protocols and, therefore, BAM must allow all the applications to communicate. Another area that must be customized involves rules and KPIs, which are different for each company and industry.

Moreover, BAM solutions require ongoing professional services such as customer support and customer training. BAM is relatively new, and those that are using BAM products are not publicizing this fact in an attempt to maintain a competitive advantage. Nonetheless, case studies are starting to be published describing BAM's effectiveness. According to the Gartner Group, businesses will adopt at a higher rate by 2007. With company's ongoing challenges to keep ahead of their competitors, the substitutes of BAM solutions are limited.

2.3.1.2 Internal Systems or Status Quo

Another substitute may be backward integration, which occurs when internal staff builds its own version on top of current business intelligence applications. Some companies maintain a "not invented here" syndrome as they feel their business is unique. As mentioned in the customers bargaining power section, this internal development takes time and capital investment.

Others may not adopt a BAM solution since its immediate value is not abundantly clear. For example, a transaction switch provider can implement a BAM solution to detect faulty cash dispenser machines by monitoring its lack of transactions over a certain period. Historic data

may show that the cash dispenser is normally used 15 times between 1 am and 3 am. If the BAM solution records that the dispenser is only used twice, as opposed to 15 times, an alert is sent to the cash dispenser company. The lack of transaction or usage may mean the machine is out of cash, it may be broken, or the network connection is faulty. The value of the BAM solution is difficult to quantify but “ATM outages can cost a financial institution an estimate of \$14,500 per hour”.¹⁷

2.3.1.3 Increased Functionality in Business Intelligence Software

Currently, business intelligence software is used to interpret data from a wide number of databases. The reports are based on historical data and offer little value for predictive management. BAM solutions are real-time where they read the current data as it is happening and compare it to the rules the company set up. If the data is out of whack with the rules, then an alarm is sent out to the person monitoring the data, which can be a line manager, operator, and so on. The increased functionality of the business intelligence software may decrease the lead-time to “close” to real time. This will pose a low threat to BAM vendors.

Overall Key Success Factor: Threat of Substitutes. Substitutes do not appear to pose a threat to BAM. Because the adoption of BAM decreases cost and increases reliability and services to customers, companies will continue to incorporate these functions to increase their bottom line. BAM’s market and adoption is expected to grow. As the adoption of BAM increases, the price will have downward pressures.

¹⁷ T. Kitten, “Real-time transaction fault alerting”, *ATM Marketplace*, (2005), 1

2.3.2 Bargaining Power of Suppliers – Moderate

The more suppliers there are the less power they have and again the more profitability and control their buyers have. The bargaining power of suppliers is considered moderate since a high level of technical skill is required for software companies' employees.

2.3.2.1 Technical skill set of employees

Like software companies, BAM vendors will be human capital intensive. Product managers and developers will need to be versatile in several protocols, fault tolerance, and low latency networks. Hiring and retaining the developers may be a challenge as industry specific knowledge will be required. For example, in the banking and payment industry, an understanding of the different applications is required when developing the architecture, customizing, and implementing the BAM solution.

Sales people and technical support staff also require a higher level skill set as they must have knowledge of the customer's business as well as the customer's technical demands. A BAM system must be integrated into an enterprise's existing systems, which may include any business intelligence systems such as customer relationship management (CRM), supply chain management, or network security management.

2.3.2.2 Information Asymmetry – Potential Customers Supplying Real Data

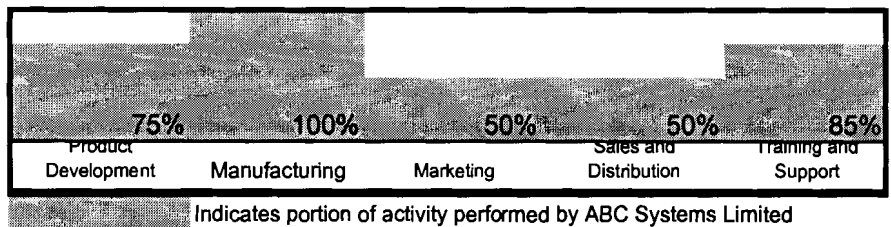
Understanding the BAM market requires input from potential customers or users. Despite the benefits to developing a better BAM solution, companies may not be willing to supply vendors with live data or their specific needs. For example, companies that deal with financial information may be breaking the law if they supply a BAM vendor with live data according to the Personal Information Privacy Act.

Overall Key Success Factors: Bargaining Power of Suppliers. Companies must do the following to succeed: (1) Hire and retain key employees, as the technical and non-technical skill set required is abundant. For example, developers must be proficient in different programming languages; (2) Ensure sales and presales people understand and translate the business problem and demonstrate the corresponding technical solution; (3) Obtain and retain competent marketing personnel and systems. The sales cycle can be as long as 18 months for some larger companies and customers feel more comfortable with the same contact and; (4) Maintain a good relationship with key prospects and third-parties, such as switch providers. This is important, as a BAM product is not a stand-alone product.

2.4 Value Chain Analysis – Business Activity Monitoring

The value chain is a complementary method of identifying competitive forces in the industry. The following is a value chain analysis, which is used to identify the main activities of the BAM Industry. The value chain consists of the following five activities: 1) Product research and development; 2) Manufacturing; 3) Marketing; 4) Sales and distribution and; 5) Training and support. Figure 2-4 shows ABC’s footprint in these activities.

Figure 2-4 Industry Value Chain - ABC Systems Limited



In Figure 2-4, the purple area represents ABC's footprint and shows the percentage of the activity that is performed in-house. The remaining portion represents the activities performed by strategic partners, distribution channels, and other external parties.

2.4.1 New Product Research and Development

Development of new products is key in sustaining a competitive edge and in maintaining market share. Companies must proactively and continuously differentiate their products from those of their competitors. Development of products consists of several activities including product specification, design, documentation, and development, as well as quality testing and assurance. Companies must have the infrastructure, technical expertise, and business relationships to allow for the continued creation of leading-edge software products. In addition, they must have the open communication channels in place for the presales and technical support people to relay the current and future customer needs to the development team.

Product development teams must be proficient in several programming languages and keep up to date with the latest trends and developments in the software industry. In addition to technical expertise, companies must also have vision and the ability to identify business opportunities as a result of problems that businesses may face. For ABC, using an open architecture in the development of its protocol conversion product was key in keeping future development cost down. This also allowed for changes and additions to be made quickly to meet customer needs.

Although creating a new product is essential for new market development, ongoing troubleshooting, upgrading, and bug fixes are also essential to retaining current customers. Customer satisfaction will also lead to repeat business for other network and IT needs and a

willingness to listen to proposals on new products. ABC tries to determine problems and develops software accordingly.

ABC expands its product lines in two ways. Firstly, it may expand by interviewing and conducting case studies on current customers to understand their businesses and current procedures. Discussing their current frustrations and software and hardware limitations help to derive a better solution. At this point, a product specification sheet is produced and then a software development process is determined. At times, ABC produces a working prototype for demonstrations that is modified to address deficiencies.

Secondly, ABC conducts its own external research to identify potential problems or needs that will enable managers to make their businesses more efficient, cost-effective, and productive. When ABC identifies a potential solution, a requirement specification sheet is created before moving onto the development process. The new technology is demonstrated to existing and potential customers. With their feedback, the new technology is turned into a product.

Overall Key Success Factors: Product Development. Companies must have: 1) Good business and customer relationships, as previously mentioned; 2) Staff with technical expertise, as previously mentioned and; 3) Internal infrastructure to allow for the quick turnaround of customer requirements, not previously identified.

2.4.2 Manufacturing

Manufacturing for software firms is very different from that of a traditional manufacturing company. For software companies, the main cost is wages for the programmers and other staff members, since the software manufacturing consists of burning the software onto a CD and labelling it. Instruction manuals are printed and included in the product being shipped to the customer. These simple tasks are performed in-house as there is insufficient volume to warrant outsourcing. Looking forward, manufacturing is changing and electronic distribution of software products and its corresponding instructions is becoming more common, which can lower costs even more.

Overall Key Success Factors: Manufacturing. Software companies usually have few hard manufacturing costs. This includes either electronic distribution or physical delivery of a CD.

2.4.3 Marketing and Branding

Marketing is a crucial activity in the business intelligence industry and will likely be crucial in the BAM market. Marketing promotes and manages the company image. Customers tend to choose reputable vendors with good track records. Effective marketing also enhances business relationships, as customers are more comfortable with a well-known solution provider. Highlighting strategic partnerships in marketing efforts, or co-marketing can help smaller vendors tap into a new market. In addition, co-marketing is emphasized as BAM draws on several databases and integration is important.

Marketing also encompasses product management. Both marketing and sales staff act as the liaison or communicator between the current customers, potential customers, and the development team. They help gather information on the technical and business difficulties that users are experiencing and help direct the development of product capabilities of the current or future products. In addition, marketing assists in determining which markets the company should focus its efforts on.

Another important marketing function is promoting the current and future products of the company, which creates awareness and ultimately sales leads. The marketing department also develops literature and case studies and gathers reference accounts to assist in the sale of products. Marketing must keep the company's presence known in the industry by attending tradeshow, participating in special industry events, and by publishing articles in industry media to raise the company's profile.

Overall Key Success Factors: Marketing. Companies must have: 1) Key marketing personnel; 2) Ongoing marketing efforts including research and promotion to build product awareness; 3) A good reputation; 4) Business relationships that are retained and fostered and; 5) Infrastructure to allow the product manager to better service the customers.

2.4.4 Sales and Distribution

Sales cycles for business intelligence software, and more specifically for BAM, will be long since these products run alongside an enterprise's existing IT platform, i.e., it is an added layer onto the existing enterprise network that uses data from the network with no room for down time or error. The presales technical support will need to work with the customer or its

consultants to determine the need and fit of the BAM solution. Thereafter, a proof of concept is derived, which is then followed by a demonstration of the proposed solution. Finally, a trial agreement is set up and the customer can test the working solution on its network with live data prior to the final sale.

Since the BAM solution is not a stand-alone system, the presales and the sales people will work closely with third-party business intelligence vendors or service providers and consultants. This tier 2 type sale is beneficial, as opposed to Tier 1 which involves selling directly to the end user, as the BAM system is a value-added function to the current or future business intelligence system.

A number of partnerships and strategic alliances are beneficial as the BAM solution works on top of or alongside an existing enterprise system. Partnerships with application platform and integration vendors (such as Tibco), business process management vendors (such as Microsoft) and business intelligence and data warehousing vendors (such as Business Objects) would be ideal alliances, as they do not have their own BAM offerings. If the BAM product is directed at a specific or niche market then industry specific partners or alliances would be better. Industry specific partners, such as switch providers, will be a good fit for ABC since its expertise is in this area. Presales and sales must manage the relationships and strategic alliances to ensure the products are not in competition with, but complementary to, their existing lines.

The sales cycle of enterprise systems is a long and drawn out process. The time from initial interest to closing of the sales often exceeds six months; some cycles are as long as 18 months. Because a BAM system works with the existing enterprise system, and it affects a number of units in a company, it is a strategic as well as an IT investment. The sales department must have a database or CRM system in place to properly document the ongoing development of the prospects.

Overall Key Success Factors: Sales and Distribution. Companies must have: 1) Highly technical staff and; 2) Systems and infrastructure in place to keep track of and document the sales process, which may take a long time.

2.4.5 Technical Support and Training

Pre and post sales technical support is provided to the sales team and its customers. Presales technical support is required to help determine technical details regarding the customers' requirements. Meanwhile, post-sales support and maintenance is provided during and after system implementation. The BAM solution is an add-on tool and must be integrated into a company's existing enterprise system, which may be more lengthy and difficult than purchasing a stand-alone product. "Integration is key... the ability to bring all this disparate information together for real-time analytic purposes is only now possible through integration technology perfected in the last few years. Integration can exist without BAM, but BAM can't exist without integration."¹⁸

Technical support is crucial to both the success of the sale and the customer satisfaction with the product. This function and expertise is best kept in-house. A BAM system is not a one-size-fits-all product and customization is involved prior to and during implementation of the system. Again, it is good to have the in-house ability to troubleshoot, adjust, or customize the solution to fit the customers changing needs.

Technical training creates revenue and adds value to the system as a BAM system is used by a wide range of people, from executives to unit and line managers. Training is required to

¹⁸ D. Linthicum, "BAM by Any Other Name", Intelligent Enterprise, October 16, 2004, <http://www.intelligententerprise.com/showArticle.jhtml?articleID=49401229> (assessed June 2006)

reveal the BAM solution's capabilities and functionality. The training sessions can be done through classroom-type settings, on-site training sessions, or through online demonstrations.

Overall Key Success Factors: Technical Support and Training. Companies must have: 1) Technical staff that are able to understand the customer needs in both a business and technical sense.

2.5 Industry Attractiveness

The BAM industry is still relatively new and growing, which makes it very attractive. The industry analysis above shows that there are few substitutes as more and more companies require BAM tools to enhance their current management tools. Customer power is limited as BAM tools are highly technical and require in depth knowledge of both the customers' business and existing technical infrastructure and applications. The influence of suppliers' power and barriers to entry on the market are moderate and may limit the BAM vendor's profitability.

Although there are several players in this market, none have specifically identified the transaction networks and processing market. The adoption of BAM as a tool to maintain competitiveness will likely be the norm by 2007. It will allow for proactive and predictive management instead of reactive. This attempt to stay ahead of the competition should keep the BAM industry growing and make it attractive and lucrative.

2.6 Summary of Key Success Factors

To summarize Porter's Five Forces Analysis model and the Value Chain Analysis, the following key success factors and a description of their impact on the industry have been identified:

1. Product design and architecture, along with functionality and capabilities are needed to differentiate BAM offerings in the current marketplace;
2. Sales and support must have technical expertise in integration, networking, or business intelligence;
3. Marketing must be able to identify and define target markets and verticals where BAM products are not yet addressed;
4. Strategic partnerships and alliances must be established and fostered;
5. Technical and marketing personnel need to be hired and retained;
6. Infrastructure and systems must be in place to monitor sales on an ongoing basis;
7. Price must be competitive and;
8. A good reputation in the industry must be established to give potential clients confidence.

Design and architecture will be the key for vendors when providing BAM offerings. Specific functionality and features include low latency and the ability to process complex events from numerous data streams. Architecture is important since BAM works with the enterprise nervous system (ENS) and must be flexible and expandable. The dashboard snap shot view of how the company is doing in a particular activity or transaction is a common feature.

Important technical capabilities are required by management. These include complex event monitoring and reporting (first choice at 31%), management dashboards (second choice, percentage unknown) and predictive capabilities and analytics (tied at third choice at 11% each).¹⁹ A vendor's ability to demonstrate a pilot project, especially with live data, is also important since the return on a BAM initiative is hard to quantify.

In-house technical expertise is essential in the BAM market. From development to sales to support, the in-house technological expertise in networking, integration, and business intelligence is beneficial as the purchasers are buying a solution that works with their current suite of software systems.

Extensive marketing is required to communicate product offerings and features to customers. In addition, marketing gathers and relays all the features required by customers or the marketplace to the product management team. BAM is an emerging market and, consequently, there are not too many case studies published. Therefore, to increase exposure, marketing will need to leverage the successful implementation of the BAM offering with references and case studies. Also, articles in industry magazines and online print will be useful in promoting the corporate identity and product offerings.

Building and maintaining strategic partners and alliances is another key for small BAM players. The BAM solution is reliant on third-party enterprise software such as CRM and supply chain management (SCM). Since BAM uses the data from the ENS, having relationships with third-party providers are necessary for troubleshooting and integrating the BAM solution into the ENS.

¹⁹ B Gold-Bernstein, "Speeding Toward Business Visibility," *ebizQ*, January 29, 2006, http://www.ebizq.net/hot_topics/bam/features/6666.html?&pp=1 (assessed June 13, 2006)

The hiring and retaining of technical and marketing personnel for this industry is essential since the technical skill set for sales, support, and development is high. Meanwhile, product awareness is important and, thus, marketing personnel must be hired and retained.

Companies must have the proper infrastructure for departments to communicate and quickly react to changing customer demands. Companies must have the proper systems to allow employees to use their time effectively and efficiently. Product sales cycles are long, therefore, companies must have proper customer tracking tools such as a CRM system.

Pricing of a BAM solution is critical. The return on investment for buyers is not immediate and may not be quantifiable. For example, the monetary value of intercepting a faulty point of sale device before it completely fails is difficult to quantify. It is difficult to quantify the loss of business due to upset customers and cashiers waiting for a payment to clear.

Reputation and a good implementation record are essential in this industry. Companies that are known players and have proven successful implementation of BAM products have better chances of succeeding with future customers.

2.6.1 Rivalry Among Existing Competitors - Low to Moderate

The rivalry among existing competitors will determine the success of BAM vendors. If rivalry is high, the industry may be very cut throat with customers substituting competitive products. Low to moderate rivalry gives vendors a better chance at being successful in the chosen industry.

Table 2-2 outlines the percentage distribution of KSF and Value Chain activities.

Table 2-2 Contribution of Value Chain Activities to the KSFs

	Value Chain					Total
	Product Development	Mfg	Marketing	Sales and Distribution	Support and Training	
K S F	Product Functionality and Design	15%		5%		20%
	Sales and Support Technical Knowledge				10%	10%
	Marketing Expertise			10%		10%
	Partnership Relations (payment industry)	10%				10%
	Hiring and retaining technical and marketing personnel	10%				10%
	Company Infrastructure and System	5%		5%		10%
	Price				10%	10%
	Reputation and known player in the industry			5%	5%	10%
Total	40%		25%	25%	10%	100%

Table 2-2 shows the Value Chain activities relative to the key success factors ranked by percentages. For example, the product development activity encompasses hiring and retaining technical personnel to develop the product functionality and design. The partnership relationships are used to determine which features are required. This information is channelled through the company's infrastructure set up through its marketing department or sales department to the product manager. The total percentage of importance of product development is 40 percent. Table 2-2 also shows that product functionality and design, marketing, and sales are the key areas of success for BAM.

2.7 Competitive Rivalry: ABC vs. Potential Competitors

The following section will discuss and assess two potential vertical industry specific vendors of BAM offerings. The industry ABC would likely introduce their first BAM product would be in the financial payments market, in which it has a 8 year history. It has built up alliances and partnerships with SI, and switch providers. ABC has developed its SDTNs for the payment industry and is very familiar with low latency, high-volume networks.

Also according to the Gartner Group, the primary vertical market adopting BAM is the financial sectors, including banks, brokers, and insurers. Using the previously identified KSF, ABC will be evaluated against Intregrated Research Incorporated and Celequest Corporation.

2.7.1 Integrated Research

Integrated Research was selected for evaluation because of its current product offering. It provides products that monitor ATMs and POS machines, and their activities and transactions. This is the primary target of ABC's initial product offering. Since Integrated Research is a software company, it is likely that it follows a differentiation strategy. Integrated Research is a publicly traded company listed on the Australian Stock Exchange. It is an established player in the monitoring business offering a wide range of monitoring products including IP telephony, IT infrastructure, and Web application monitoring. It appears to be a financially sound enterprise with 18 years of experience and several key partners including Cisco, Hewlett Packard, and IBM. Its clients include health care, telecommunications, retail, and financial institutions. Its future product offerings include performance management for Web application.

Integrated Research currently can monitor the performance of ATMS and POS networks. Its current offerings are for BASE24 and for Postilion. BASE24 is a transaction switch offered by ACI Worldwide. Postilion is a transaction switch offered by Mosaic, an S1 company.

Integrated Research financial market product offerings include:

Prognosis ATM Transaction Manager – This product identifies real-time ATM transaction trends, monitors total ATM transaction and interchange response time in real-time, and identifies the activity an ATMs is performing.²⁰

Prognosis ATM Incident Manager – This product monitors the most important ATM problems by flagging and escalating tickets that have exceeded the defined Service Level Agreements. The process is tracked and is therefore easier to audit. It automatically dispatches tickets in a two-way email process that allows service personnel to acknowledge receipt and therefore respond.²¹

Prognosis POS Transaction Manager – Similar to an ATM, this product monitors and identifies trends in POS transactions, manages the POS resources, and identifies any excessive transaction times or abnormal transaction response codes.²²

Prognosis Transaction Surveillance – This product allows access to real-time POS and ATM transactions. It utilizes pattern-matching techniques with each transaction monitored and analyzed. When a problem or suspect transaction occurs, PROGNOSIS creates an exception that can be automatically conveyed to a relevant business group for immediate action.²³

XPNet Manager – This product allows real-time monitoring of the BASE24 application. It can display, graph, summarize, and analyze historical data. The product monitors BASE24 and XPNET operations to help in optimizing the availability and performance of the environment. It provides the key information needed to pinpoint problems, improve decision making, and deliver service.

²⁰ http://www.prognosis.com/products/atm/_pos_monitoring/products_and_solutions/page_1383.aspx

²¹ http://www.prognosis.com/products/atm/_pos_monitoring/products_and_solutions/page_1384.aspx

²² http://www.prognosis.com/products/atm/_pos_monitoring/products_and_solutions/page_1385.aspx

Prognosis Realtime Framework Manager for Postilion - This product provides real-time, up to the minute status reporting of the switch transaction responses and request response times among other features.²⁴ It also provides visibility, centralized monitoring, availability, and service level management fault alerting, as well as remote access Web reporting for the Postilion application and infrastructure.

In summary, the Integrated Research financial market offering is very switch specific. Currently, the company offers solutions that run on only two of North America's largest switch providers. The solutions provide dashboard visual capability, monitoring, and limited analytical capabilities and alerting capabilities, which currently are used for BAM.

2.7.2 Celequest Corporation

Celequest was founded in 2002 and is a privately held company based in Redwood City, California. Its current product offering provides financial performance management such as Value at Risk Status, risk exposure, and external market events across all lines of businesses. Celequest focuses on risk management in the financial market. It offers other products for retail and manufacturing. Since Celequest is a software company, it is likely that it follows a differentiation strategy as well.

Celequest offers performance dashboards so managers and operators can see their company's activities. These products include an application workbench which allows systems administrators to quickly and easily set up data integration, analytical models, end user dashboards, and its Analytical server for continuous data integration.²⁵

²³ http://www.prognosis.com/products/atm/_pos_monitoring/products_and_solutions/page_1381.aspx

²⁴ http://www.prognosis.com/products/atm/_pos_monitoring/products_and_solutions/page_1939.aspx

²⁵ www.celequest.com

Celequest has several partners including technology partners such as Hewlett Packard, IBM, SAP, and solutions provider such as Bristlecone and Carnation. Its financial customers include Citigroup, Fifth Third Bank, and Jefferies. Although Celequest is not in the exact area in which ABC would like to offer its product, it is a good benchmark in functionality and capabilities.

Celequest's LAVA technology is the backbone of its product offerings. LAVA's key features include extensive data integration, an analytical server, performance dashboards, and scalable product architecture. It offers three versions of the LAVA appliance: Small/Medium Business Edition, Standard Edition, and Enterprise Edition. For database, LAVA connects to XLM, JMS, and JDBC and connects to many enterprise applications including Oracle, SAP, Siebel, and Peoplesoft.

In summary, Celequest's LAVA products appear to have the current common BAM features such as the dashboard, analytical tools, and alerting capabilities. Its solutions are currently used in financial, retail, and manufacturing environments.

2.7.3 Competitor Comparison

Table 2-3 was compiled by the author with the information on the companies' Web sites, product descriptions, and target markets.

Table 2-3 Competitor Comparison on KSFs

	Integrated Research	Celequest	ABC
Key Success Factors			
Product Functionality and Design	75	75	95
Sales and Support Technical Knowledge	80	80	80
Marketing Expertise	70	85	50
Partnership Relations (payment industry)	80	80	85
Hiring and retaining technical and marketing personnel	75	75	50
Company Infrastructure and System	75	75	50
Price	50	50	90
Reputation and known player in the industry	75	75	80
	580	595	580

Initially, Integrated Research and Celequest will be assessed to identify potential opportunities for ABC. Thereafter, ABC’s ratings in the key success factors will be assessed and used to determine whether it should launch a BAM product.

Although both Integrated Research and Celequest focus on the BAM financial and retail market, they address them in different ways. The BAM solutions are differentiated by capabilities, functionalities, and architecture. Integrated Research has differentiated its product by focusing on a niche in the financial and retail markets. Its retail and financial offering is limited to ACI’s BASE24 transaction switch and Mosaic’s/S1’s Postilion transaction switch. The limitation of the switch allows for other niche players, like ABC, to take advantage of this opportunity. Integrated Research products monitor the individual transaction and not the entire transaction activity. However, monitoring of the entire transaction activity has been on the wish list of Calypso, one of Canada’s largest transaction processors.

Integrated Research’s Prognosis product is limited to current and new customers of the BASE24 and Postilion switches. The monitoring product appears to depend on the information

provided by the switch application and, therefore, it may not be able to monitor the information independently. The independent monitoring may be beneficial for SOX or for determining whether there are problems related to the switch.

Celequest appears to be a “plug and play” solution as it works with several enterprise applications. The “self-serve” dashboard design is suitable for customization and its low-cost scalability makes this product unique. However, the events that the solution appears to be monitoring are individual transactions rather than the entire transaction activity. Pricing for Celequest 3.5 is based on the number of CPUs and users²⁶, and starts at \$150,000 for an entry-level system.

Celequest’s product is a horizontal solution which addresses the needs of several markets with the same product. This solution requires a significant amount of customization to meet the needs of end users in each specific industry, and this customization can be more costly than the product itself. For example, the product may only cost \$150,000, but it may require another \$400,000 to adapt it to the needs of users in the financial transactions industry.

Information regarding sales and support technical expertise is limited and subjective. Using its customer base and solutions provided to clients, both Integrated Research and Celequest seem to be well prepared and have adequate technical expertise. There is limited information as to whether technical expertise is available in-house or is outsourced.

Marketing expertise is crucial in the BAM market as it is emerging with several players including pure play vendors, SI, business integrators, business integration and business process management solution providers. Marketing is handled differently for Integrated Research and Celequest. Prognosis’ BASE24 and Postilion offerings are more focused on customers who use

²⁶ G. Variar, “Make the Leap to Real-Time Decision Making”, *Intelligent Enterprise*, January 2006, <http://www.intelligententerprise.com/showArticle.jhtml?articleID=175002451>

these switches whereas Celequest is marketing its solutions as a more scalable and economical solution that works with several applications and databases.

Both Integrated Research and Celequest have identified the need for BAM solutions for financial verticals. Both companies are marketing their products and corporate image well with articles in Intelligent Enterprise and eBiz as well as other leading enterprise solutions information and research providers. Integrated Research is a global player with over 18 years experience that offers several monitoring products, whereas Celequest is a local pure player vendor.

Strategic partnerships are important as BAM is a composite market (not a stand-alone product) and needs to work with an enterprise's existing network applications. Alliances and partnerships make implementation and development of the products easier. Integrated Research has listed Cisco, Hewlett Packard, and IBM as partners. Unfortunately, it doesn't indicate the nature of the partnership and whether it is in specific financial market offerings. Celequest lists several solutions, technology, and OEM partners. Both companies appear to have good partnership portfolios.

2.8 Opportunities and Threats

Based on the Competitor Comparison of KSFs above, several threats have been identified that would make it more difficult for ABC to be successful in the BAM market. The overarching threat appears to be marketing expertise. Both Integrated Research and Celequest are recognized as BAM players. Integrated Research is recognized in the monitoring industry, and has a global access and reach. The company recently won the prestigious 2005 Consensus Software Award with its "Prognosis For Web Applications" software. Celequest is recognized and included in the Gartner Group reports as a pure play vendor of BAM. ABC continues to be weak on the

marketing front and this will pose its biggest threat. Although, this is mitigated, as ABC is highly recognized in the payment industry, where it will launch its BAM product.

The second threat is the partnership and relationships that Integrated Research and Celequest currently have. They both have a wide range of partners including technical and solutions partners. Partnerships take time to foster and must be a win-win for both parties to be successful. ABC can leverage its current relationships with ACI Worldwide, Mosaic (S1), and Siemens Nixdorf that it has developed in the payment arena.

The third threat is the hiring and retaining of technical and marketing personnel. Software companies are labour intensive and it is imperative to hire and retain the best employees. Retaining staff is just as important as hiring the right employees because constant turnover of personnel can be demoralizing and costly. In addition, the learning curve in the highly technical BAM industry is very steep.

The fourth threat, although not as strong, is company infrastructure and systems. For example, companies with effective reporting and direct communications with marketing and product development will allow the research gathered from marketing to flow quickly to product development.

The main opportunity identified is the specific niche market ABC would like to initially address, the transaction processing industry for financial markets. In its initial research of current ABC customers, the market has yet to come up with an end-to-end transaction monitoring tool. This functionality is where ABC would stand to win. Firstly, ABC's product is completely transaction switch independent and is not reliant on any specific switch like Integrated Research's Prognosis solution. ABC's independent solution provides a larger market opportunity as it is developed to work with any manufacturer's switch. Secondly, ABC's product will not be

installed on the same hardware as the switch, which will allow it to provide an independent view of the transaction activity.

In general, most BAM products rely heavily on SI, however, in the transaction activity area where ABC has extensive experience; there are standards that are independent of the application. In this case, the application is the switch software. ABC understands and adheres to these standards and, as a result, developed its product for this first vertical to be independent of the application—this minimizes the need for the SI. ABC has strong partnerships and the technical expertise to develop an independent BAM product. Meanwhile, several processors have expressed their concerns regarding their lack of monitoring capabilities and have indicated that they need this type of BAM product.

The other opportunity identified is price. Since the benefit of a BAM product is hard to quantify and is not obvious, price is a major concern making it hard to justify this investment. Determining a return on investment may not be quantifiable and, therefore, justifiable. For the white label ATM's transaction processor where transactions are their business and revenue is generated and calculated per transaction, it is losing revenue and customers if an ATM is malfunctioning. That lost revenue may be easily measured using past data, but the customer retention and satisfaction figures are difficult to determine.

The current price for fully installed BAM software is approximately \$500,000. However, a large amount of cost is due to product customization. For example, the software may cost \$150,000 but labour customization for the end user may cost \$350,000, which represents twice the cost of the software. The opportunity for ABC is to develop a plug and play solution for the transaction network industry where there is limited customization necessary, resulting in a lower overall ownership cost.

ABC must focus on functionality for its BAM entry into the payment industry market and ensure that users are aware of the product's capabilities. Price is an area where ABC can successfully compete, especially since Celequest's BAM product costs at least \$150,000. Pricing must be reasonable and flexible to suit the different sizes of payment processors. Eventually, ABC can consider cross-selling its technology to other industries such as retail and healthcare, in which it already has good business relations.

2.9 Strategic Alternative

Based on the analysis of the key success factors and the identified threats and opportunities, the author suggests ABC follow a differentiation strategy. ABC must focus on functionality, which has been identified as an opportunity for its BAM offering.

ABC must continue to build and develop its BAM product to address problems in the payment processing industry, and focus on real-time monitoring of transaction activity. The current prototypes have dashboard displays and Web-based applications that allow executives and other managers to see a snap shot of how the company is performing against its defined KPI. The prototypes also allow users to access this information from several outlets, including computer screens, personal digital assistants (PDAs), cell phones, and so on.

The alerting functionality is necessary and can encompass two-way alerting when a response or action is expected. ABC's BAM architecture should be one that is scalable and adaptable to address the needs of other markets. Its BAM product should be similar to its "information bus". This product has been a proven success due to the easy addition of protocols and its open architecture, which made integration and expansion easier for growing companies. In developing the BAM product, ABC must focus on providing users with the ability to easily define and customize the unlimited number of KPI and rules.

The key threat that ABC faces appears to be product marketing, which has been an area of weakness in the past. The existing in-house marketing skills and the available marketing resources are limited. Product marketing may not be as difficult since there are already several current customers that see the BAM product as a value-added tool. Eventually, if ABC wanted to reach a global market, it can set itself up to be acquired by a larger player in and around the BAM area like Tibco, Cisco, or Business Objects.

Pricing for the BAM offering will depend on the number of users and licenses or can be offered as a monthly subscription. The pricing would need to be lower than Celequest's \$150,000 per server cost. ABC is a new, smaller player in this niche market and its pricing will need to be justifiable to the customers in a short period of time. The total cost of ownership and the return on investment will need to be clear and preferably easily measurable. The product should be priced at \$25,000 to \$100,000.

Chapter 2 identified KSF of the BAM industry and proposed marketing, pricing, and product strategies. To successfully implement the previously proposed strategic alternative, ABC must align their existing resources and capabilities with the new product. The following chapter will examine the company's management preferences, organizational capabilities, and resources.

3 ANALYSIS OF INTERNAL ENVIRONMENT, CAPABILITIES AND RESOURCES

In the previous sections, key success factors for ABC to become a BAM product provider were identified as well as a strategic alternative to become a successful niche provider. For the latter, ABC's internal environment is assessed using Crossan, Fry and Killing's (2005) Diamond – E Framework.²⁷ The purpose of conducting this analysis is to identify gaps in the resources and capabilities within the company.

3.1 Management Preference

To determine if the proposed strategy is consistent with the strategic preferences of the two main decision makers, three aspects of the management preferences are analyzed: a) the decision criteria, b) the capabilities, and c) the mind-sets. The two main decision makers within ABC are Bronson Sam, the new president and Arnold Tang, CTO and one of the founders of the company.

3.1.1 Decision Criteria

Both Mr. Sam and Mr. Tang require little convincing to adopt this BAM product strategy, because the demand for protocol conversion in the payment industry continues to decline. As the industry standards move toward IP, ABC's current suite of products will become obsolete.

²⁷ M. Mary Crossan, N. Joseph Fry, Peter J. Killing, *Strategic Analysis and Action*, 6th ed. (Toronto: Pearson Prentice Hall, 2005), 42.

Legacy systems are being replaced as technology becomes less expensive. It is suggested to the key decision makers that ABC channel its resources into scalable products that are part of a growing market. If the company does not adopt the proposed strategy, it may miss a promising business opportunity and may suffer further financial strain. The author believes that choosing this direction will ultimately bolster ABC's revenue and turnaround the decline in profit.

The management's preference of developing only software products is consistent with the proposed strategy for the BAM market. Although ABC has developed several hardware products, its current preference to develop only software products stems from the fact that the software products have higher margins. Software products require minimal capital investment in inventory as compared to hardware products. Furthermore, software companies save time usually required for processes such as disassembling, repairing, and assembling hardware products.

The management preference of investing a limited capital of \$1,500,000 in ABC's new product line would be met, as this proposal requires less funds. Further details of the budget will be addressed in the financial resource section [section 3.3.3].

To support the BAM product strategy that is geared towards the niche market, the Product Development team can leverage its core competency in the transaction networking industry. ABC has accumulated over eight years of experience in the transaction network and, specifically, in the development of the industry specific applications. CEP and expertise in the team's specialty is functionality and architecture development in the transaction network related products. CEP and expertise in architecture development would allow ABC's product development team to develop a plug and play BAM product with minimal customization required.

In relation to the strategic alternative proposal, the management team has adopted a conservative approach as it has expressed concerns regarding penetrating a new market.

However, the prospect of this strategy is a promising one given that some of ABC's current customers have already expressed interest in the BAM type product. The author believes that the management team should adopt a less conservative strategy as it is in the best interest of ABC to develop a new and successful product.

The sales team welcomes the new business proposal, as it will provide the sales team with fresh opportunities. Selling a newly developed product may help ABC capture a niche segment of the BAM market. The new business proposal will allow the sales team to leverage its current customer base by cross-selling the new BAM product. The team can work with the already established strategic partnerships, alliances, and distribution channels which have been identified as a KSF. As BAM products integrate with other enterprise applications they create opportunities to build target market-related partnerships with switch providers, transaction processors and SI. An example of ABC previously leveraging its alliances occurred when a switch provider partner required its end user to adopt ABC network communication product.

3.1.2 Capabilities

Several capability gaps have been identified in ABC's internal environment, including:

- **Product Development: Lack Of Bam Knowledge And Its Specification**

Requirements

Although the development team has adequate technical expertise in transaction networks, it only has limited knowledge of required BAM functionalities. One way to close this gap is for the development team to gather market information through interviews with current and potential ABC customers. This would eliminate the need to hire an in-house BAM expert.

- R&D: Lack of Personnel

Due to lack of financial resources, ABC development team has an understaffed development team. Management can address this gap by hiring part-time consultants.

- Sales and Marketing: No Personnel with BAM knowledge

Product marketing is a major concern for two reasons: (1) marketing is crucial for penetrating the BAM market, and; (2) ABC historically has not channelled sufficient resources into marketing.

Presently, the sales team has a cross functional role whereby team members conduct market research while making cold calls and relationship maintenance calls to clients. According to the rivalry analysis, ABC performed satisfactorily in maintaining its relationships with existing customers but less so in all other areas of marketing. ABC's sales team is generally pre-occupied with its role in selling and maintaining relationships with clients than in the promotion of the company and its products. In addition, the sales team lacks marketing expertise for the BAM market.

ABC and has expressed its intention to hire a new marketing manager to address its insufficient BAM knowledge. It has agreed that this new hire have sufficient authority to make marketing-related decisions and change the current autonomy of decision making to a differentiation strategy.

Ideally, the marketing manager should have in-dept knowledge of Business Intelligence software and applications. The marketing manager must have strategic and tactical experience in the BAM. As Western Canada has several BI software companies such as Business Objects/Crystal Decisions this should not pose a problem. The overall compensation package of the marketing manager should consist of a base salary, a performance amount, and share options.

Depending on experience, the base salary should be in the range of \$85,000 to \$150,000 with company share options in the range of .05 percent to 2 percent.

In summary, the author has determined the main weakness of ABC's internal environment is marketing. This weakness must be addressed immediately by hiring an experienced senior marketing manager. The manager must be provided with sufficient decision making powers as well as a budget for marketing activities such as research, tradeshow and online advertisements.

3.1.3 Mind-sets

Although the general mind-set of ABC's management team can be considered as complacent, it has an optimistic attitude. Since ABC's decision makers frequently provide direction across all areas of the organization, department heads must adopt a working attitude where they need to be told what to do. This highly centralized decision-making policy has resulted in a lack of initiative among the management team. In addition, management often are shunned from opportunities to get more involved in the company.

The main challenge will be to convince management to move from a "nice to have" marketing function to a mandatory marketing strategy that reaps BAM returns. The view of marketing as a sunk cost must move to view marketing as an investment.

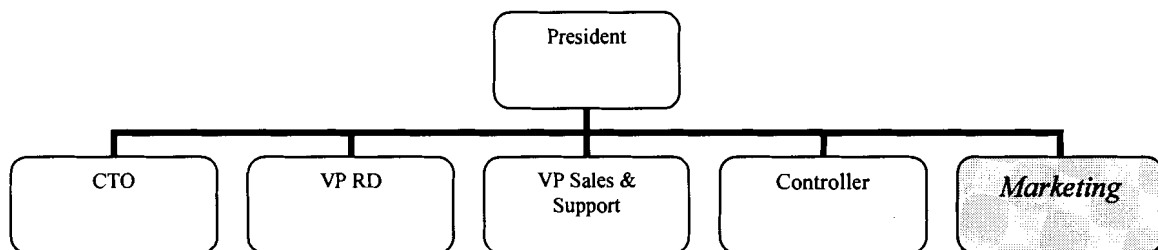
3.2 Organizational Capabilities Analysis

The following section identifies the gaps in ABC's structure, systems, and culture that must be addressed to implement the proposed strategy.

3.2.1 Structure

Marketing has been identified as a key success factor that is required for the successful release of the BAM product line. Before downsizing in 2005, the President of ABC was in charge of the marketing department (see Figure 3-1, Organization Chart). For the organization to succeed, marketing must be independent from other departments. The newly appointed independent and experienced marketing officer must have sufficient decision making powers to carry out marketing functions—this should allow the company to make informed decisions and take full advantage of the BAM market.

Figure 3-1 Organization Chart



Hiring marketing personnel to fill the existing gap will be the most significant change in ABC's structure. The need for marketing personnel is crucial in the product development and

the promotion of the new BAM product. Marketing must promote the corporate image and manage business relationships, such as strategic partnerships and alliances. The capital structure will eventually change as the company grows and requires external financing. Previously, ABC had one majority shareholder and several smaller employee shareholders. The company is currently experiencing a restructuring with the majority shareholder selling 50 percent of his shares to the new President. The two equal partners will push the autonomy of decision making to one that is more consistent with a differentiation strategy. If external financing is required to fund growth, decision making will be even more decentralized. The current shareholders will need to give up between 10 to 15 percent of the company, if venture capital funds are sought.

In summary, the most significant change to the organizational structure will be adding a senior marketing officer. The need for an independent marketing department is critical for the successful implementation of the BAM strategic alternative proposal.

3.2.2 Systems

Currently, ABC lacks formal systems, procedures, and documentation because the company is small and flexible—this allows for a quick turnaround time when customer feedback is received regarding product specifications and requirements. The company recognizes the need to formalize its procedures as it grows and is introducing a comprehensive policy and procedures manual.

While it is developing the new technology and architecture necessary for the BAM product suite, ABC must consider patents. Patents not only protect intellectual property but also add value to software companies. ABC currently does not have any patents and external patent lawyers and consultants must be approached to address this issue.

Regular performance measuring mechanisms will need to be re-introduced with performance rewards. Clear goals must be set for all departments and personnel with a reward system that will be linked to both the achievement of individual goals and the performance of the company as a whole. For example, R&D can use goals such as milestone completion.

ABC's current reporting structure is very relaxed with very few meetings and reports. This lack of a formal reporting system may be contributing to the lack of autonomy in the decision making process. As ABC grows, it will require more formal reporting systems, including regular meetings and status reporting. If a formal reporting structure is implemented, the main decision makers may feel more up-to-date with the progress of the company, from cash flow to product development, and be more comfortable delegating authority.

The current sales personnel situation will likely need to be reviewed at a later stage as sales of the BAM product start. The current sales team is adequate as the target market continues to be the transaction industry. However, when ABC begins to target other markets, additional personnel of different expertise may be required.

- Support: Need For BAM Training

The support personnel situation must be reviewed as current support staff is well-versed in protocol conversion software but not the BAM line. In principle, the development team should deal with the initial launch of the BAM product with all the related technical and support issues. However, after the BAM product is launched, the support team must become familiar with the product and its functionality. At this point, BAM training and education for the support team will be crucial. The most appropriate personnel to train the support staff will be the BAM product manager at ABC. He or she must also develop BAM training materials on which should be distributed to the sales team and the support team. The materials must address how the BAM product fits into the current transaction network infrastructure. Over time, the course and

materials should be presented to the entire ABC staff, as this will become the future focus of the company.

In summary, the main systems gaps that exist between the proposed and current strategy are patent filing, a performance measuring function, and a formal reporting system. The patent filing and performance measuring functions are currently being reviewed and do not pose a threat in the successful implementation of the new strategy. However, the lack of formal reporting system must be addressed to improve cooperation and trust. With a more efficient reporting system, the key decision makers and the senior management team can track company activities and stay abreast of the progress of the company to achieve specific goals. In addition, a performance measuring system will allow managers to distinguish good performers from poor ones and give more autonomy to the former group.

3.2.3 Culture

ABC has a communitarian culture, in which each staff member is dedicated, physically and emotionally, to the company and its success. ABC is wholly-owned by its employees, which allows them to participate in the achievements and failures of the company.

Morale has been low over the last five years, which corresponds with consecutive years of falling revenue and profit and two rounds of layoffs. The remaining employees are still committed to the company, but need to see that the company is turning around to remain motivated.

With average tenure in excess of seven years, ABC's voluntary employee turnover rate is low. Members of the R&D team function well together, professionally and socially. This mutual understanding can be considered a strength that is difficult to replicate.

ABC currently follows a hybrid-differentiated strategy, which is the single largest problem that needs to be addressed. The cost-based factors of low marketing and lack of autonomy for decision making interfere with the effectiveness of the differentiation strategy. The increased awareness of the importance of marketing will ultimately result in more marketing initiatives.

The move towards the development of the BAM product line is expected to re-energize and boost the morale of all ABC employees. Firstly, the development of the BAM product line will engage the product development team in a completely different way and allow the team to use additional creative forces and capabilities. The BAM product line will serve as a challenge to the product development team, while the team works toward developing product functionality and architecture. It is also hoped that through the development of a new product line, the product development team will pursue a more proactive attitude at work and have better morale.

Addressing the lack of autonomy in decision-making may be more challenging. ABC is a small company which includes two larger shareholders with a significant amount of financial resources at stake. These individuals may feel more comfortable delegating authority and decentralizing the decision making process when a more rigorous reporting system is implemented, as systems are used to facilitate delegation.

In summary, the decision making process is the main gap at ABC. Implementing a methodology to measure performance and a more rigid reporting system, may help key decision makers feel confident and comfortable enough to delegate authority. Decentralizing the decision making process will help align the current approach with the proposed strategy.

3.3 Resource Analysis

The following section assesses ABC's resources and identifies any gaps within these resources, including: 1) human capital; 2) financial capital and; 3) technology.

3.3.1 Human Resources

Similar to other software companies, ABC's operations are human capital intensive. Because of declining profitability, ABC has downsized its staff to a bare minimum with each staff member performing more than one function. To undertake the company's entry into the BAM industry, more staff will be required. As ABC is targeting a niche market that it is familiar with, it can make use of existing human resources. Resource gaps are limited to the following personnel:

- R&D
- Marketing
- Presale/support

Current staff will be able to provide the product management role for the BAM product. However, an additional developer is required to free up time for the existing developers. Dedicated to ABC's existing product line, this developer must provide ongoing bug fixes and changes as required by customer demands. Meanwhile, a developer with the necessary BAM-related technical background may have to be hired to teach and train the existing development team. Technology transfer to ABC's R&D team currently consists of interviews with current customers regarding their desired functionality for a future BAM product. This should be sufficient for ABC's initial BAM offering, which will be in the payment processing area.

However, additional expertise will be required when the company decides to expand into less familiar verticals.

Since ABC is planning to target a BAM product to a specific niche market, it will have to maintain its competitive edge with in-house development. In addition, a technical writer must be hired to produce BAM product documentation.

A marketing officer with business intelligence experience must be hired to promote newly developed products and create sales literature such as specification sheets, press releases, and reference cases. Marketing must be in charge of business development and strategic and business relations.

The sales and support group may require personnel with BAM experience to train the current sales and support staff, which do not have the necessary BAM experience and expertise.

Current accounting, administration, and quality assurance staffing will be sufficient to service current and initial levels of sales activities. However, when more BAM products are developed and sold, these areas will need to be expanded.

Most of the current staff have been employed with the company for more than 10 years. These employees have been very patient and committed to the success of ABC. Hopefully, ABC's entry into the fast-growing BAM market will reward this patience.

In summary, there are several personnel gaps that must be filled for the successful implementation and execution of the proposed strategy, including ABC's immediate need for a senior marketing officer, development personnel, and presale/support personnel.

3.3.2 Technological Resources

Although ABC is a technology-driven company in the leading edge computer software industry, its own internal hardware and software need upgrading. The lack of an adequate central customer database is the most obvious deficiency or gap.

ABC's proposed BAM product for the transaction industry is designed to be a plug and play system. This may decrease the sales cycle to 1 to 3 months from 6 to 12 months for a typical business intelligence or enterprise software company because less customization is required. This is still a long lag time requiring ABC to upgrade its CRM system to keep track or manage the progress of sales efforts and document information on each prospective customer. The current customer database, an older version of Maximizer, is slow and lacks the reporting features required to control the sales cycle. A CRM system that can integrate support and sales activity for small to medium size enterprises (SME) should be reviewed and implemented.

To maximize customer retention, the CRM system must be able to track and manage existing and future customer needs. Although switching costs are high, customer retention and customer satisfaction is ABC's goal. ABC needs to continue building its business relationships and retain customers.

Development tools may be required when ABC identifies the next vertical for its BAM product. At this time, this is uncertain and the next market has yet to be identified. However, a budget must be established to advance to the next vertical.

A less important technological gap is ABC's internal computers. Although an average computer lasts between three and five years, ABC's average computers are more than five years old—this lack of power and memory is frustrating for the staff. Constant building and rebuilding

is time-consuming and costly. When funds are available, existing computers must be replaced with ones that are more powerful.

ABC has been involved in the transaction industry for several years and has developed a monitoring and CEP technology. This technology can be extended to develop functionality and capabilities for the prospective BAM product.

In summary, the main gap in technology is the lack of a customer relationship management system. Although the current one is still operational, a system with better reporting functions, such as grouping of industry and product user groups, is required to facilitate deeper customer relationships.

3.3.3 Financial Resources

Financial resources have been an ongoing concern for ABC over the last five years. Sales have declined due to the falling demand for ABC's conversion protocol products, and the lack of success in its two hardware ventures. Consequently, this has put a strain on the financial resources of the company. Most recently, sales have been exacerbated by the weaker U.S. dollar.—ABC sales are in U.S. dollar, while its expenses are in CDN dollars.

Resources must be allocated to address the gap in personnel for the development team, presales/support personnel, and the marketing personnel. Financial resources must be allocated to patent filing and other related legal fees. Funds also need to be allocated for legal costs in developing strategic partnerships and non-labour resource marketing costs such as press releases, specification sheets, and development of case studies.

ABC's capital structure is very conservative, consisting primarily of shareholders' loans and little external debt. It has most recently undertaken an equity transaction with the original majority shareholder selling off half of his shares to an active investor, which represents about 30 percent of the company's shares,. This partner will pursue an active role in the company as an executive officer. The adjustment of ownership has made some financial resources available to develop ABC's next product line. Although two million dollars can be obtained from existing shareholders, other external investors are available, such as venture capitalists or angel financiers. These investors look for growth markets and experienced management.

In summary, there are several areas that will need financial resources. However, there appears to be no gap from the decision criteria and the strategic alternative proposed. Table 3-1 shows cost allocation and confirms the sufficient financial resources. The total amount required to implement the BAM strategy proposal for the next two years, as listed in Table 3-1, totals \$1,350,000.

Table 3-1 Allocation of Resources

	Year 1	Year 2	Total
Human Resources			
R&D			
Senior Programmer/Designer	150,000.00	150,000.00	300,000.00
Intermediate Programmer	97,500.00	97,500.00	195,000.00
Technical Writer (PT/Consultant)	15,000.00	22,500.00	37,500.00
Mktg			
Marketing Consultant	142,500.00	95,000.00	237,500.00
Marketing activities	150,000.00	150,000.00	300,000.00
Sales and Support			
Presales/Sale/Support		112,500.00	112,500.00
Total Funds required for Human Resources	555,000.00	627,500.00	1,182,500.00
Technology Resources			
R&D			
R&D tools	37,500.00	37,500.00	75,000.00
Sales and Support			
CRM System (small)	75,000.00		75,000.00
Annual support	9,000.00	9,000.00	18,000.00
Total funds required for Technology Resources	121,500.00	46,500.00	168,000.00
Total Funds required (Cdn \$)	676,500.00	674,000.00	1,350,500.00

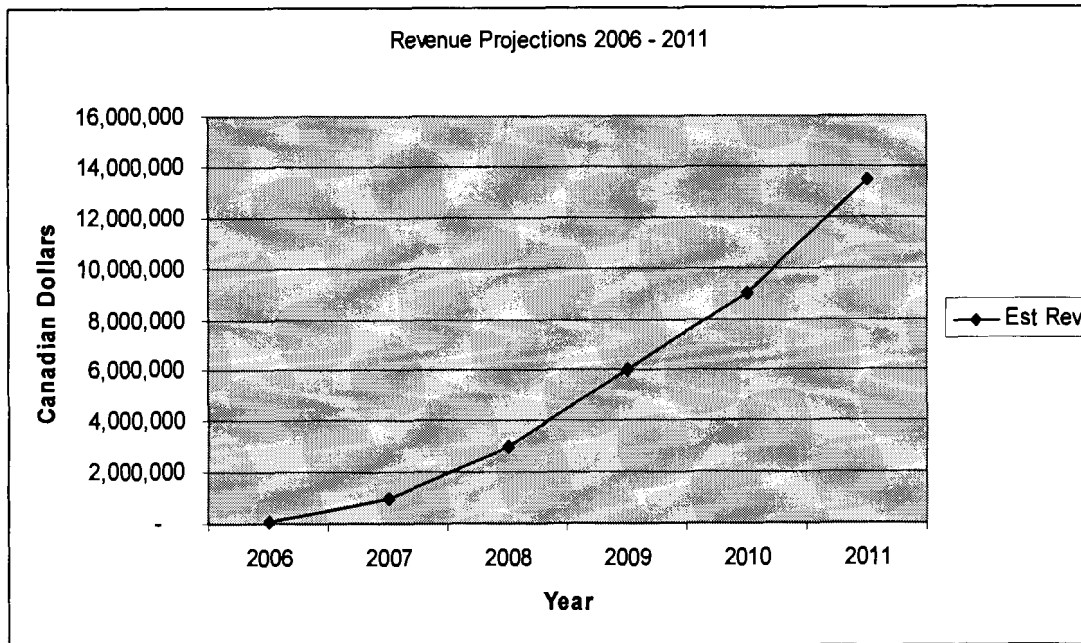
Table 3-2 shows ABC's customer base broken down by industry and region. Using this information and assuming an average price of \$50,000 for ABC's BAM product and a probability of success of twenty five percent (25%), it is estimated that the company can generate over \$2 million dollars in sales with its current clientele. All industries listed have transaction networks and are a good fit for ABC's BAM product. The probability of success is high as the customers who are currently using ABC's products will experience little risk in adopting the monitoring capabilities provided by the BAM product. Risks, such as down time due to incompatibility, learning new software, and so on, should be minimal.

Table 3-2 ABC Customer Distribution

Customers	AsiaPac	CCSA	EMEA	NA	Samerica	Safrica	Total Count
Banking		6	10	32	2		50
CC Processor		2		2			4
EFT Switch	2			2	4		8
Financial Services			2	2			4
Fleet Charge Cards				2			2
Hardware Mfg	2						2
Healthcare				4			4
Loyalty Cards				2			2
Networks	2	2	6	6			16
OEM/Resellers				4			4
Payment Network	4						4
Resellers	2						2
Retail				2			2
Service Provider			8				8
Systems Integrators	8	2	4	20		2	36
Telecommunication	4			2			6
Transaction Networks Prov			2				2
Transaction Switching				2			2
Total count	24	12	32	82	6	2	158

Table 3-3 shows the estimated revenue growth when the bulk of the adoption of BAM products will take place in relation to the Gartner Hype curve. As the revenue stream is very attractive, it will provide financial relief to the company and comfort to the company's key decision makers and shareholders.

Figure 3-2 BAM Revenue Projections



3.4 Summary

In summary, there are several gaps between the strategic proposal and ABC's current internal profile. As suggested above, these gaps can be addressed by adding and adjusting the development team, marketing personnel, and technical resources along with the organizational culture and systems. The next chapter focuses on a recommendation that specifically addresses the gaps and compares the recommendation to the decision criteria set out in Chapter 1.

4 RECOMMENDATIONS

ABC should implement the BAM product development proposal and adopt a full differentiation strategy. By adopting this strategy, the company will be part of an emerging market as opposed to its current diminishing and obsolete market. Resources must be re-aligned and must focus on developing product functionality and deploying resources to address the non-existent marketing initiatives. The following sections describe the specific recommendations.

4.1 Marketing

The largest gap is ABC's lack of marketing personnel and activities. Since marketing has been identified as one of the KSF to being successful in the BAM market, it is essential that ABC elevate marketing functions to a higher position within the organizational hierarchy. This will likely include hiring a senior marketing officer with business intelligence experience in the financial industry. ABC must recognize the importance of this function by providing the new marketing officer with a budget and sufficient decision-making authority to successfully perform marketing activities.

Initially, marketing activities should include the following objectives:

- a) Develop literature for ABC's BAM product that will be distributed (via email or mail-outs) to its existing and potential customer base.
- b) Design a marketing booth for trade shows and decide which trade shows to attend.

- c) Maintain and develop business relationships and partnerships as well as foster deeper relationships with SIs and network transaction providers.
- d) Promote ABC's corporate image and raise its corporate profile in Vancouver and in its industry by writing articles for transaction magazines.
- e) Conduct market research on existing and potential customers needs and relay the key findings, such as desired product functionality, to the development team. The marketing team must be the liaison between the development team and existing and potential end users.
- f) Determine which vertical markets to target.

ABC has developed business relationships with switch providers (Mosaic, and ACI Worldwide), transaction processors (Calypso Canada) and SIs (Mideast Data System Integrators) which will be beneficial in developing and distributing its BAM product. These are ideal partners, as well as potential customers, who can be used as sounding boards for developing features in the BAM product.

ABC can begin its product strategy by promoting its BAM product to current customers. BAM is not a quick-sell product and has a sales cycle which is similar to other business intelligence products. The implementation time will be long, with extensive upfront costs including training and support—this initial investment makes the return on investment less obvious. In addition, it may be difficult to sell this type of product to new customers because ABC is still a small player in this new and growing market. Leveraging past relationships will facilitate new sales and instil customer confidence in ABC.

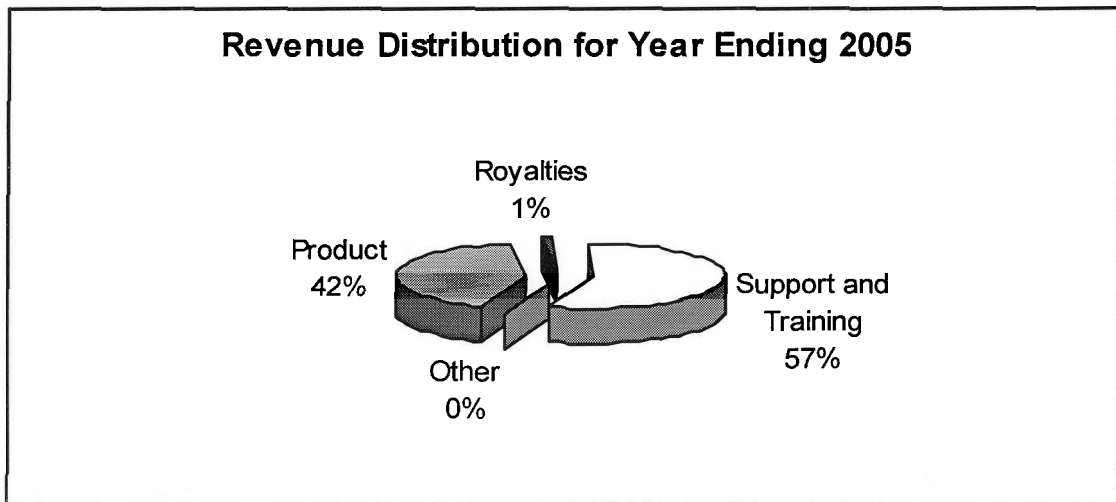
4.2 Research and Development

BAM is an area in which ABC has core competencies. Its in-depth knowledge of low latency, CEP, and networking should lead to a higher probability of success for its BAM product. These functions are crucial because BAM systems will need to be integrated into the ENS. ABC's experience in working with numerous protocols will be useful since BAM uses several databases and processes to monitor events.

The current development team is over-extended with the existing product line and most likely unable to take on additional development of the new product. Thus, the lack of development resources must be addressed immediately. ABC must hire a developer with experience in the transaction networking area, which will free up the existing team to focus on the new product line. The main duties and responsibilities of this developer will be to provide bug fixes and patches for the existing product line, more specifically the protocol conversion suite of products—this can eventually be performed by the new developer.

Figure 4-1 shows that continued support such as minimal development and bug fixes are necessary on the current product lines as the existing product provides in excess of fifty percent (50%) of the company's revenue. Profit from the existing product offering will allow ABC to invest in its newer product line.

Figure 4-1 ABC Systems Revenue Distribution



A senior developer experienced in the business activity monitoring industry must be hired as ABC continues to develop the functionality of this product. This developer will assist in adopting the initial BAM product to further markets and verticals. ABC's architecture must be designed to be easily transferable to other industries. A less crucial hire is a technical writer to prepare user documentation.

4.3 Customer Relationship Management

To complement the increased activities generated by the marketing department, a customer relationship management system that provides a central database of all existing and potential customers should be utilized to keep track of and interlink the numerous sales activities. This software should allow marketing, sales, support, and accounting to work off one database. For example, the sales department must keep track of the sales cycle stage each customer is at;

support staff needs to know customer requirements; the marketing department must continue to feed customers into the database for the sales department to address and; accounting must keep track of customers who have evaluations and when these evaluation systems must be returned.

4.4 Presales and Support Personnel

Due to insufficient resources, ABC must hire presales support personnel. As the BAM product is launched and promoted by the marketing department, sales activity will likely increase. However, a round of cost cutting conducted in the previous year has left few presales and support personnel behind. The ideal candidates must straddle both the presales and support activities. Personnel must understand the needs of the businesses and help develop solutions to address these needs.

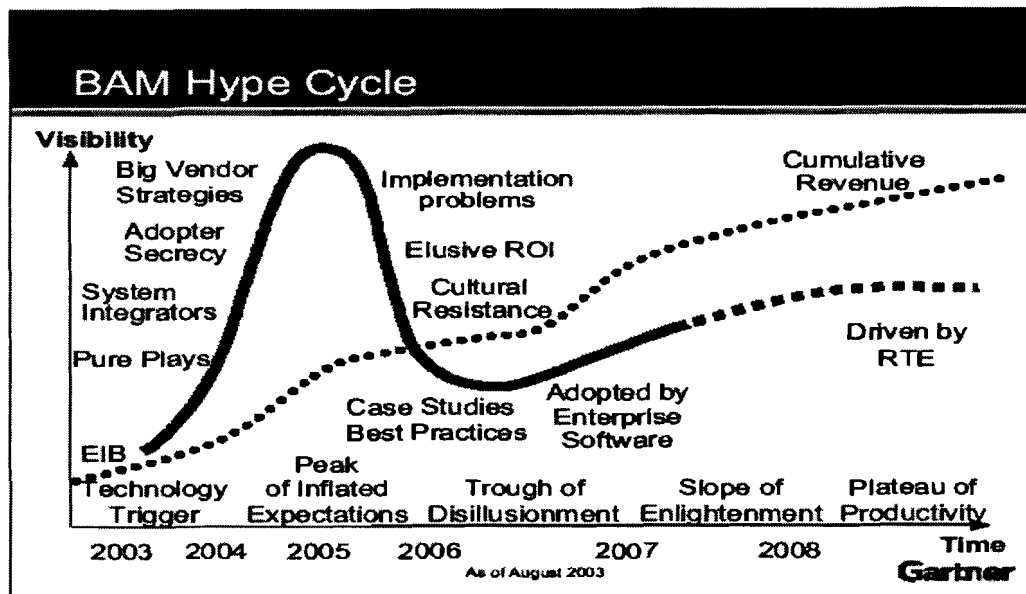
4.5 Systems and Structure

Reporting and performance measuring mechanisms must be upgraded to help key decision makers become confident in staff' competency to maintain business operations—ultimately, this can lead to a decentralization of some of the decision making responsibilities. This will motivate and help retain key employees because most creative and highly-skilled employees prefer making their own decisions regarding their work, rather than being told what to do.

The structural change required is the addition of a senior marketing person. Marketing must be looked upon as an investment rather than an expense. Meanwhile, key decision makers must acknowledge the importance of the marketing function and its impact on the probability of success for ABC's BAM product offering.

ABC's existing market is clearly diminishing and the company must identify and enter a new and growing market, such as the BAM industry, as soon as possible to avoid becoming obsolete. Timing is crucial and, according to Gartner's Hype Cycle shown in Figure 4-3, ABC should be able to take advantage of the growing adoption of BAM products in the marketplace.

Figure 4-2 Gartner Hype Cycle²⁸



The best time to enter a new industry is when the market and customers are ready to adopt the new product. The highest growth stage is the early adopter stage. After that, the steepness of the curve decreases while the early adopters test the products and releases and publicize case studies. This allows more companies to see the benefits and leads to mass-market adoption.

²⁸ H. Dresner, "Business Activity Monitoring: BAM Architecture", (Gartner Symposium ITXPO 2003), 6

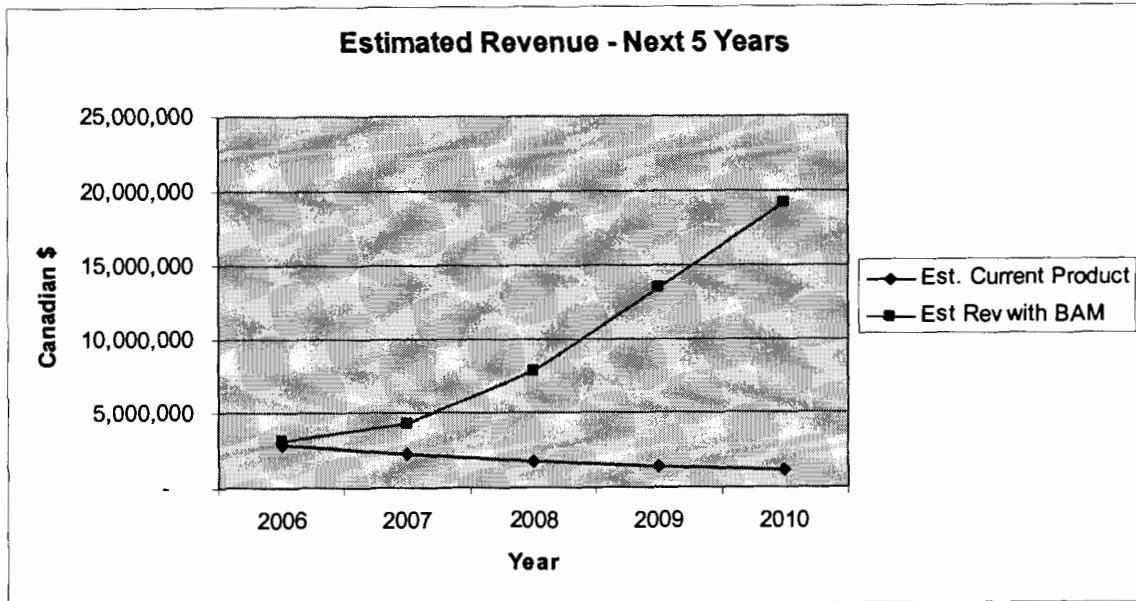
ABC must focus on developing its BAM product and leverage its current customer base. It can develop its initial BAM product for the payment processor market, but must make sure it does not limit its functionalities and capabilities to that single industry. The architecture must be scalable and adaptable to other industries, such as retail and healthcare. According to the Gartner Group, the financial industry has been an early adopter of BAM-type products. Therefore, it makes strategic sense for ABC to focus on the payment processor area.

Another alternative is for ABC to promote itself as a pure play vendor of BAM solutions and position itself as an acquisition target for a larger player in the space, such as Business Objects, who may be looking for a real-time, integrated BAM solution to add to their current product line. Another potential suitor could be switch providers or payment processors, since the monitoring capability will add value to their services. For example, if the payment processor can predict a faulty ATM, then it can get it serviced quickly without losing too much revenue or customers.

4.6 Summary

In summary, ABC should adopt the alternative strategy suggested above and participate in the fast growing BAM market. Figure 4-4 shows ABC's future revenue streams upon adoption of the previous recommendations.

Figure 4-3 Revenue Projections



ABC's current revenue stream (shown in blue) is expected to decline at a rate of 20 percent p.a. over the next five years. Meanwhile, the potential revenue stream for ABC upon entry into the BAM industry (shown in pink) is too impressive to ignore. Therefore, it is recommended that ABC adopt the alternative strategy suggested here.

REFERENCE LIST

- Altman, R. "Viva La BAM!", *ebizQ*, 2005
http://www.ebizq.net/hot_topics/bam/features/6247.html?&pp=1 (accessed June 13, 2006)
- Bukszar, E. BUS 607 Business Strategy Course Notes. Vancouver, BC: Simon Fraser University, 2006
- Celequest Corporation, <http://www.celequest.com>
- Corcoran, M. "High Impact, Low Latency – The Promise of Real-Time BI", *DM Review*, 2006
http://dmreview.com/editorial/dmreview/print_action.cfm?articleId=1019946
- Correlá J. and Schroder N. "BAM: A Composite Market View" *GartnerDataquest*, 2002
- Crossan M., Fry J., Killing J. *Strategic Analysis and Action*. Toronto, ON: Pearson Prentice Hall, Sixth Edition. 2005
- Dresner, H. "Business Activity Monitoring: BAM Architecture" *Gartner, Inc*, 2003
<http://www.pikos.net/documents/german/Gartner.pdf>.
- Dresner H., Hostmann B. "Magic Quadrants for Enterprise BI Suites and Platforms", *Gartner Research*, 2004, as quoted in Clark P. *Strategic Analysis of Business Objects Versus Cognos Incorporated, Providers of Business Intelligence Software*, 2005.
- Edgewater Technology, <http://www.edgewater.com/capabilities/businessactivitymonitoring> (accessed June 12, 2006).
- FileNet Corporation, <http://www.filenet.com>
- Fingerhut, S. "BAM—Fly or Die?" *Line56*, 2003
<http://www.line56.com/print/default.asp?ArticleID=4863&TopicID=6>
- Frye, C. "BAM changes IT decision-making", *Application Development Trends*, 2004
<http://www.adtmag.com/print.aspx?id=9153>.
- Gold-Bernstein, B. "Speeding Toward Business Visibility", *ebizQ*, 2006
http://www.ebizq.net/hot_topics/bam/features/6666.html?&pp=1 (accessed June 13, 2006)
- Gonsalves, A. "Progress Launches Dashboard for Business Activity Monitoring Platform", *InformationWeek*, 2006
<http://www.informationweek.com/showArticle.jhtml;jsessionid=32UW2AKRDRHJMOSNDLRSKH0CJUNN2JVN?articleID=188101557&queryText=Gonsalves>

Hellinger M. and Fingerhut S. "Business Activity Monitoring: EAI Meets Data Warehousing"
eAIJournal, 2002

Integrated Research Inc. , <http://www.prognosis.com>

Kharif O. "The CEO's Tech Toolbox", *BusinessWeek online*, 2005

http://www.businessweek.com/technology/content/jul2005/tc20050726_8027.htm?chan=search (accessed June 12, 2006).

Kitten, T. "Real-time Transaction Fault Alerting", *ATMmarketplace.com*, 2005

<http://www.atmmarketplace.com/specialpuboverview.htm?id=48>.

Kochar H. "Business Activity Monitoring and Business Intelligence", *ebizQ*, 2005

http://www.ebizq.net/hot_topics/bam/features/6596.html?&pp=1 (accessed June 13, 2006)

Linthicum D. "BAM by Any Other Name", *Intelligent Enterprise*, 2004

<http://www.intelligententerprise.com/showArticle.jhtml?articleID=49401229> (assessed June 2006)

Luckham, D. "The Beginnings of IT Insight: Business Activity Monitoring", *ebizQ*, 2004

<http://www.ebizq.net/topics/bam/features/4689.html?&pp=1> (accessed June 12, 2006).

Manage Business Processes Proactively In Real Time, Edison; Fujitsu Consulting.

<http://www.fujitsu.com/downloads/SVC/fc/fs/bam.pdf>

McCoy D. "Business Activity Monitoring: Calm Before the Storm", *Garnter Inc*, 2002

Taylor J. "Decision Technologies and Active Data Warehousing" *ebizQ*, 2006

http://www.ebizq.net/blogs/decision_management/business_activity_monitoring/
(accessed June 16, 2006)

Unified Business Performance Management & the Application of Predictive Analytics. Stamford:
OutlookSoft Corporation, 2005

Variar, G. "Make the Leap to Real-Time Decision Making", *Intelligent Enterprise*, 2006

<http://intelligententerprise.com/showArticle.jhtml?articleID=175002451>

Whiting, R. "It's A Reality: Monitoring Business In Real Time", *InformationWeek*, 2003

<http://www.informationweek.com/showArticle.jhtml;jsessionid=32UW2AKRDRHJMQSNDLRSKH0CJUNN2JVN?articleID=10817775&queryText=Whiting+Celequest>
(accessed June 13, 2006)