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NAVAL POSTGRADUATE SCHOOL

MONTEREY, CALIFORNIA

MBA PROFESSIONAL REPORT

**Enterprise Risk Management Solutions:
A Case Study**

**By: Douglas C. Hays
June 2008**

**Advisors: Joseph G. San Miguel
Don Summers**

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**ENTERPRISE RISK MANAGEMENT SOLUTIONS:
A CASE STUDY**

Douglas C. Hays, Major, United States Army

Submitted in partial fulfillment of the requirements for the degree of

MASTER OF BUSINESS ADMINISTRATION

from the

**NAVAL POSTGRADUATE SCHOOL
June 2008**

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ENTERPRISE RISK MANAGEMENT SOLUTIONS: A CASE STUDY

ABSTRACT

In recent years, financial risk management has received increasing attention from managers in both private and public enterprises, regulatory agencies, and elected officials. The purpose of this research is to prepare a case study of a firm that seeks to provide a risk management solution for organizations. The case study resulted in a business plan, which was strategic in scope with a significant portion of the analysis concentrating on the firm's competitive positioning within the industry and an assessment of the direction the firm should move to achieve future success. This case study provides the sponsoring firm's management team with a comprehensive, realistic, and unbiased strategic analysis with several unique recommended courses of action for its future operating, management and financial decisions.

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EXECUTIVE SUMMARY

According to data provided by the Securities and Exchange Commission (SEC) from 1999 to 2002, the number of accounting fraud cases investigated involving major U.S. corporations jumped 41 percent. Some of the more high-profile corporations investigated by the SEC included Enron, HealthSouth and WorldCom [1]. There were several reasons for the increase in SEC investigations; however, the biggest was improper reporting of quarterly and annual earning statements. Companies were able to mislead investors, Wall Street, and employees by manipulating revenues through questionable accounting and auditing procedures.

Because of this alarming trend, the government imposed more stringent accounting and auditing requirements on major corporations, hoping to avoid future catastrophes such as Enron. Currently, the regulation that has garnered the most attention is the Sarbanes-Oxley Act of 2002; with sections 302 and 404 of the act providing the background and rationale for this case study. Section 302 of the Act requires the Chief Executive Officer (CEO) and Chief Financial Officer (CFO) of each issuer to prepare a statement to accompany the audit report that certifies the "appropriateness of the financial statements and disclosures contained in the periodic report, and that those financial statements and disclosures fairly present, in all material respects, the operations and financial condition of the issuer." A violation of this section must be known and intentional to give rise to liability. Section 404 requires each annual report of an issuer to contain an "internal control report," which shall: 1. State the responsibility of management for establishing and maintaining an adequate internal control structure and procedures for financial reporting; and 2. Contain an assessment, as of the end of the issuer's fiscal year, of the effectiveness of the internal control structure and procedures of the issuer for financial reporting. Each issuer's auditor shall attest to, and report on, the assessment made by the management of the issuer. An attestation made under this section shall be in accordance with standards for attestation engagements issued or adopted by the Public Company Accounting Oversight Board (PCAOB or the Board). An attestation engagement shall not be the subject of a separate engagement [2].

Because CEOs and CFOs are now legally bound to demonstrate that they understand the contents of their earnings report and are required to implement and monitor an internal control program within their organizations, the need for financial risk management software has become a necessity. There are several reasons for financial risk software, but the primary reasons have to do with the efficiency and volume of accounting procedures and requirements that must now be managed. Although major corporations followed accounting and auditing procedures before 2002, many of the requirements were accomplished through the use of spreadsheets and paper and pencil techniques with no requirement to demonstrate uniformity or specific regulatory adherence within a particular industry. Often, accounting and auditing records provided nothing other than a means to demonstrate awareness of a specific requirement by an organization and cursory proof that a control was in place to monitor and execute a requirement. Therefore, if the possibility existed that recording and reporting procedures had been ignored or manipulated by an organization, there was really no way to be 100 percent confident that a law had been broken.

Examining hundreds of accounting and auditing files and finding compliance to a particular regulation for an external auditor was not practical, efficient or realistic with the advent of Sarbanes-Oxley. Therefore, it was in the best interest of corporations to find an efficient method to demonstrate financial compliance while at the same time providing company executives the peace of mind that their company's accounting practices were being properly executed. A majority of large corporations are now procuring financial risk management software as an efficient method to demonstrate financial compliance. There are currently several risk management software packages available. However, due to the relative young age of the industry, there are numerous opportunities for financial risk management software developers to thrive.

Albert Jackson, formerly a risk management executive for American Financial Corporation (AFC) (a large financial services company), contacted the Naval Postgraduate School in Monterey, California, to seek assistance in analyzing and developing a strategy for a financial risk management software product that he and his wife had been developing for the past ten years. Although Albert considered his work

with the software as part of a small business operation he had yet to make the type of commitment to his business that would allow it to flourish if he were to devote 100 percent of his time. What Albert hoped to gain through the outside assistance was an assessment of where devotion of 100 percent of his time would lead and the strategies he should use to build his business if he was willing to make such a commitment. In response to his request for an external, independent appraisal this case study was undertaken.

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I. BUSINESS HISTORY, BACKGROUND, AND OBJECTIVES

In an effort to assist American Financial Corporation (AFC) manage financial risk in their retail and credit card departments, Albert, a risk management executive for the company, developed a technology solution. His goal was to develop a tool that was functional at all levels. To assist him in his endeavor, Albert enlisted the assistance of Scott Thomas, an associate and software engineer. The primary objective was to provide management with the capability to supervise, control and monitor financial risk throughout the company while allowing employees to execute tasks identified by the technology at the user level (a top-down risk management method). Those tasks executed by the employees would be defined as the risk mitigating controls identified by AFC's financial management team or those controls independently identified and executed by the software.

An example of one such task follows: Suppose there is a business risk assumed by several units/departments throughout an organization associated with noncompliance with the USA Patriot Act. The President signed the USA Patriot Act into law on October 26, 2001, making a number of amendments to the anti-money laundering provisions of the Bank Secrecy Act and the Money Laundering Control Act of 1986. The amendments were intended to make it easier to detect, prevent, and prosecute international money laundering activities and the financing of terrorism [3]. Albert developed software that would enable an organization to monitor and control the task of ensuring that no unlawful production of correspondence accounts were established by potential or known terrorists to facilitate money laundering for use in unlawful activities. Of significance is the software's ability to execute implemented controls, if desired, by an institution's management team. Throughout the industry, this capability is referred to as "artificial intelligence." This issue will be addressed in length later in the analysis, but is considered the genesis of Albert's rationale for subsequently deciding to leave employment with AFC and attempt to market the software as an independent business owner.

Albert and Scott accomplished their desired end state of assisting AFC in effectively managing risk in their credit and retail departments. Once implemented, the

software enabled the company to streamline processes in both departments, reduce financial burdens associated with the programs, and implement, monitor and execute a set of controls to ensure employees throughout the organization were in compliance with goals established by management.

Initially the software was developed to help manage risk in only AFC's credit and retail departments. However, after the crisis that occurred in financial markets at the turn of the century (as a result of scandals that occurred at companies such as Enron, Quest and HealthSouth), Albert and Scott began tailoring the software to meet risk management and control requirements of financial institutions outside AFC, along with non-financial organizations required to publicly report quarterly earnings.

At the time, Albert's research indicated a saturation of similar software throughout the industry. Therefore, he knew "differentiation" was the key to success. As a result, he decided to focus on risk management from a "process and control" execution perspective rather than the single unit and control recognition approach used to manage risk by many of his competitors. Albert believed that by examining each individual process executed by an organization, determining what units within an organization were involved in that process, and then attaching risk to each of those entities simultaneously; management's ability to control risk was enhanced exponentially.

Where Albert hoped to differentiate his approach from competitors was by developing a tool that not only identified and required users to manually execute controls, but development of a tool that actually executed those controls identified by Enterprise Risk Management Solutions (ERMS) if the company purchasing his product wished to have those capabilities available. Figures 1 and 2 demonstrate this concept in three dimensions. Included in the figures are the individual departments and processes that operate within an organization and several examples of risk/regulatory requirements that a financial organization must manage on a day-to-day basis.

The risks referred to are in no way all-inclusive but represent a sample of those risks with which the majority of financial institutions must be in compliance to satisfy legal or regulatory guidelines. For example, one of the more recognizable requirements

include Sarbanes/Oxley, an act passed by U.S. Congress to protect investors from the possibility of fraudulent accounting activities by establishing accountability mechanisms at the executive levels of registered public companies. Another is the Fair Lending Regulations, which prohibit the use of discriminatory appraisals and require the preparation of written loan underwriting standards, the collection of monitoring information and the maintenance of loan application registers [4]. In order to understand Albert’s ideas on risk management monitoring and control, imagine that the Figures 1 and 2 are constructed as a box.

In Figure 1, the areas that intersect represent a process within the organization that is affected by a risk. Analysis of Figure 2 demonstrates an individual unit/department that is affected by a particular business process. By bringing together the process with the risk and drilling down one more level to the business unit (i.e., department), management is able to determine what units involved in the execution of a particular task actually assume risk during the execution phase of an individual task.

Processes							
Business Process 1	Business Process 2	Business Process 3	Business Process 4	Business Process 5			
					TILA/Reg Z	Regulatory	Risks
					BSA/PATRIOT		
					Fair Lending/Reg B		
					GLBA/Reg P		
					FCRA		
					Sarbanes/Oxley		
					Operational	Business	
					Credit		
					Financial Reporting		
					Reputation		
					Strategic		

Figure 1. Intersections represent processes affected by risk. From [5]

		Processes				
		Business Process 1	Business Process 2	Business Process 3	Business Process 4	Business Process 5
Business Units	Department 1	■				■
	Department 2	■				
	Department 3					
	Department 4			■	■	
	Department 5	■				
	Department 6					
	Department 7		■	■		
	Department 8		■	■	■	
	Department 9		■	■	■	
	Department 10	■				■

Figure 2. Individuals or departments affected by particular processes. From [5]

For example, a financial institution that has a process for opening new deposit accounts is exposed to Bank Secrecy Act risks that a credit card bank may not be exposed to, as it does not have such a process. Figure 1 shows how Business Process 1 intersects with TILA/Reg Z Operational, Reputation, and Strategic Risk. Conversely, BSA/PATRIOT risks intersect with Business Processes 2 and 3. [5] Similarly, there is another natural intersection between a process and a business unit. Business units and departments exist to efficiently and effectively serve the business process. Figure 2 shows how Business Process 1 intersects with Departments 1, 2, 3, 5, and 10. Conversely, Department 1 intersects with Business Processes 1 and 5. Once the natural intersections have been identified and determined across processes and units, ERMS's unique software is able to execute, analyze and monitor control procedures through the program's artificial intelligence capabilities. According to Albert, other financial risk management software available on the market only identifies and determines risks across processes and units. The execution of controls must be completed by humans.

As Albert and Scott worked the software development phase of the business, Albert's wife Kristine began to build a foundation to market, distribute, and manage the risk management software. First, she determined a name for their business, Enterprise Risk Management Solutions (ERMS) Inc. This is also the name that will be used throughout this project when referencing the software. Next, she began adding critical personnel to the management side of the company. She hired Tom Fisher as an operations manager, Larry Wilson and Jessica Klein as an installation and training team, and Maggie Singer as a business consultant.

Currently, AFC is the only financial institution using ERMS, although they are discussing the potential sale of ERMS to a bank in Omaha, a casino in Nevada and an accounting consulting firm in Boston. The selling price for the software is currently set at \$65,000 for the Process Module and \$65,000 for the Control Module. Additionally, there is an annual licensing fee of \$65,000 and an installation fee of \$5,000 added to the initial price. Maintenance fees include technical support charged at \$150 an hour, training at \$640 a day and consulting (included in the consulting fees are tasks such as methods that can further optimize ERMS's capabilities) at \$225 an hour. According to Albert, the selection of the prices was based on an industry price of \$250,000. He believed the overhead required to produce the software for a single organization was such that he could price his product significantly lower than competitors and enable ERMS to compete globally if he ever decided make the software available on the open market. Other than a limited requirement to adapt specific software needs to a company, ERMS's overhead consists of minimal costs such as travel, communication and accounting.

Although ERMS is fully functional and its business support unit is fully capable of supporting AFC as currently constructed, AFC raised some serious concerns on ERMS's management's ability to support them in processes outside of their credit and retail departments. Their concerns were twofold. First, if AFC decided to expand the software outside of its credit and retail departments, did ERMS have the capability to support that task from an implementation and training perspective? Second, if ERMS was able to implement the software, did they have the capability to provide 24/7 technical support to all of AFC's bank locations both domestically and abroad? These questions

were further exacerbated by the follow-on questions Albert and his team would have to answer if they were able to support AFC globally. For example, would support of AFC consume all of ERMS's resources, which would prevent the company from pursuing other business contracts? Furthermore, to support a global solution should they adjust their pricing model? Finally, at current staffing levels, if they determined they could not support AFC and additional customers, what are the next steps they should take in growing their business? These were alternative considerations: should they continue to finance organically and hire and procure additional resources as funds became available, should they pursue funding by venture capital firms and private equity investors; or should they sell the company and rights to the software and exit the business altogether? The purpose of this business plan is to determine possible courses of action for all of these possibilities along with an unqualified recommendation as to which course of action is the most beneficial to the owners of ERMS.

II. RISK MANAGEMENT BUSINESS ENVIRONMENT

Prior to beginning the strategic analysis of ERMS it is important to define strategy and how that strategy has influenced the development of ERMS. Next, analysis of how that development has positioned ERMS in the industry must be considered in order to build an effective strategy. Regardless of size or age of a business, a company should develop a strategic plan immediately. Upon release of the strategy, management should continually review the strategy and ensure all employees assigned to the organization are working towards optimizing the current and future goals of the strategic position their firm has taken within a particular industry. Additionally, the organization must ensure the strategy's content is clearly defined, relevant and innovative (innovation is a by-product of the current operating environment, market and conditions). Finally, the organization must ensure management allows all employees assigned to their organization to execute the tasks for which they are responsible, without interference, in pursuit of the strategic initiative that exists in the organization. Otherwise, development of a strategic plan will prove useless. As a result, examination of ERMS's current business model and recommendations for improvement, if necessary, will be the preliminary step for developing an effective strategy for ERMS followed by a strategic analysis in terms of the concepts referenced in the beginning of this section.

Analysis of ERMS's current business model and short-term planning policies reveal a considerable delta. Discussions with Albert reveal that the company is unsure on how to proceed in attacking short and long-term goals and what direction development of these goals will lead the company as they become part of the organization's overall strategy and vision. Currently, the operating techniques used by the company are "on a need to know" basis. Albert enlists the assistance of his staff as needed and pursues potential customers in a similar manner.

Although it appears ERMS needs to make immediate progress in determining, developing and implementing short-term goals and creating a viable business plan, research and analysis of the current Risk Management Operating Environment

demonstrate otherwise. Although the market climate will be addressed in detail later in this analysis, the ability of any small business to enter and remain competitive in the Risk Management environment is relatively easy and is likely to remain so for several years. Success will be defined and determined on whether or not entrants into this business segment can quickly act and tighten up their shortfalls (near term) and determine what method (strategy) will work best for them to enter the industry and remain competitive as the market matures. As explained in an article written by Tom Eid and French Caldwell on Governance, Risk and Compliance (GRC) within the financial industry, current industry trends and future projections on the use of Risk Management Software Tools suggest an expanding market both domestically and internationally with a predicted growth rate of nearly 24% through 2010. [6] Therefore, the fact that ERMS has a viable product which is ahead of many industry competitors from a capabilities perspective (a concept that will be addressed in detail later on in this paper) will allow time to develop operational objectives and strategic visions in line with industry competitors without having to worry about being overtaken by competitors. Bottom line, what ERMS lacks in structure and vision it makes up in product quality and capability, one that is innovative and unique.

ERMS management recognized the need for short-term planning and goal setting in requesting that this research study be performed. This is a critical review that must necessarily precede a careful strategic analysis of the business, the customer needs, and the market. As discussed in the opening section of this analysis, ERMS currently provides software and services to AFC and is in negotiations with financial institutions, an accounting consultant, and a casino about possible sale and support of their risk management software.

Currently, the organization consists of four partners and five contractors. Presently, none of the contractors has thoroughly defined job descriptions and ERMS is under no legal obligation to pay them salaries unless clients are secured and their services needed. The salaries of the partners are similar to those of the contractors in that no compensation is distributed unless contracts are secured. An argument could be made that Albert and Kristine are explicitly aware of their employee job descriptions and that a

formal document that explains their responsibilities exists. However, the job descriptions lack a specific language that requires the individual employee to bring any added value to the company during times of inactivity, a concept that is extremely important during the infant stages of a small business. Furthermore, an evaluation of employee responsibilities and oversight demonstrates a lack of accountability on management's part to ensure that the employees bring value to the company. In an organization the size of ERMS, it is critical that the small number of employees have assigned tasks that bring value to the company; regardless of whether or not that value is tangible.

As ERMS addresses employee responsibilities, it should also consider determining all of the tasks that must be accomplished within a calendar year and assign responsibilities accordingly or create new positions as required. They can "kill two birds with one stone" by doing this. They will be able to identify inefficient employee practices and identify resources required in both the near and long term. While executing the process, variables such as future growth, continuous salary requirements and financial limitations must be carefully evaluated. Suggestions for personnel design should be determined through examination of their organizational structure needs. These needs include but are not limited to: independent and clearly defined full-time and part-time positions, creation of additional employees as required per newly acquired contracts, supplemental additions to current job descriptions as a remedy to the company's responsibilities outgrowing their financial capabilities in the short term and, proper job descriptions and annual salary requirements for all positions. Use of consultants should only be determined on a case-by-case, as needed basis. ERMS should consider consulting techniques similar to this project that uses MBA students when possible.

Along with the addition of more clearly defined employee responsibilities and duties, Albert should consider the creation of additional departments to manage the added tasks that will occur as ERMS becomes more competitive in the Risk Management market. I use the term "department" loosely. Establishment and hiring of individuals in several key areas/positions, for the time being will help Albert in the long run. There are several reasons for this but the most beneficial to ERMS is that it will allow them to demonstrate to large organizations that it can support global solutions. Furthermore, if

ERMS hires its additional personnel as contractors/consultants that are paid strictly on commission, this creates a variable cost that will reduce financial risk and increase flexibility. Marketing, human resources and a department of analysts are some additional tasks/positions that ERMS must consider in the short term if it is to remain viable in the Risk Management arena.

There are other perfunctory short-term changes ERMS could make that would lend credibility to their operations and bridge the gap between near term success and strategic objectives. Although many of these changes are anything but seamless and will require a commitment on the part of Albert and Kristine, they all require accomplishment at some point as ERMS continues to grow and gain market share. First, if for no other reason then to give ERMS the look and feel of an actual business rather than a concept, ERMS should consider purchasing or leasing facilities to conduct their business. Presently they work out of their home and conduct the majority of their business over the phone or on location of current and prospective clients. As more business is generated, it will not always be cost effective to travel to possible customers. Also, inviting prospective customers to a residence, although it could be seen as lending a personal touch, may well be seen as somewhat unprofessional and does not present a good image for the company.

Another area that ERMS should address is the company's website. There is no question that the website is well constructed and appeals to the reader, it is both attractive and user friendly. However, there are flaws that are easily recognized with respect to access and content. For example, potential Risk Management customers seeking software remedies for their organizations often begin by searching the internet. Frequently, they begin their search by accessing search engines such as Google, Yahoo or MetaCrawler and typing in a command with a combination of the words "risk," "management," "enterprise," and "control." Input of any combination of these words will not bring up access to ERMS on the displayed page or for several pages after that, on any of the search engines mentioned. According to Albert, the reason for this is intentional. He feels that competitors will steal ideas. However, there are other ways to keep people from stealing ideas.

For example, if there is an idea or concept you are not comfortable displaying to users, do not include those ideas on the website. Also, research on companies that are displayed as a result of a Risk Management search demonstrate that they are very careful in the content provided on their websites and usually require a customer to contact them through email or by phone if they wish to get secure information that is not available on the website. The reasons for this are twofold. First, the information might actually be something they do not want the public to have. Second, it is a tool they use to gather the names and addresses of potential customers for subsequent follow-up through a personal call or message to solicit their business. Therefore, Albert's concerns about privacy and security are more of a disadvantage to the company than an advantage. Finally, as currently constructed, there is no way for Albert to monitor whether or not their website is even bringing any value to the company. The site manager is unable to provide any data on the number of visitors that use ERMS's website per day, week or month. There is a caveat to the lack of actual hits on ERMS, when the phrase "risk management" is entered into a search engine. Enterprise Risk Management Solutions, ERMS, as referred to in the majority of its literature, is much too generic for differentiation on the search engine or among competitors. Therefore, I strongly recommend that Albert and Kristine consider changing the company name and consider other methods that would ensure their organization is more easily accessed via the internet.

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III. STRATEGIC ANALYSIS

In this section, we will explore strategic goals for ERMS based on the strategic analysis techniques introduced at the beginning of this section. The primary strategic methods will use the frameworks developed by Michael Porter at the Harvard Business School in 1979. As defined by Porter, industries can be evaluated by using five forces for assessing competitive attractiveness and a firm's strategic position within that industry. The five forces are: rivalry, the threat of substitutes, buyer power, supplier power, and barriers to entry. The framework is in textbook material for modern business studies and therefore widely known. The five forces include three forces from a horizontal competitive position: threat of substitute products, the threat of established rivals, and the threat of new entrants; and two forces from vertical competitive position: the bargaining power of suppliers and the bargaining power of customers [7]. Defining the market and competitors that exist in the Risk Management arena is the first step in development of a strategic analysis.

Financial Risk Management markets have come into prominence because compliance regulations worldwide are driving high-profile publicly traded companies to implement laborious financial compliance, corporate governance and risk management programs into their reporting requirements. The requirements and market opportunity are worldwide in scope because companies that are U.S. Securities and Exchange Commission registrants must comply with the Sarbanes-Oxley Act of 2002 (SOX), regardless of whether their headquarters are located in or out of the U.S. In response, some countries, such as Canada and Japan, have aligned their own financial reporting rules with SOX. As evidence of the demanding SOX requirements, some international companies have abandoned U.S. markets in order to avoid compliance requirements. By 2008, more than 75 percent of large and midsize companies will purchase new compliance management, monitoring and automation solutions (0.8 probability). Through 2012, fewer than 30 percent of companies will pursue an integrated strategy of a risk-oriented approach to compliance, standardization of controls and automation, thereby limiting the value of compliance investments (0.7 probability). By 2012, the numbers of

regulations that directly affect IT operations will double (0.7 probability) [8]. As demonstrated by this data it is clear that Government Risk Compliance Management is a market that provides several opportunities.

Although the definition of risk management and GRC leave little to interpretation, the potential market they represent is subject to uncertainty based on the relatively young age of these new legal and regulatory requirements. An optimistic perspective would be driven by the opportunity to be a leader. Thus, the Financial Risk Management Market, for purposes of this analysis, will be defined as a relatively young market, with clearly defined requirements and plenty of opportunities for competitors.

A. FIVE FORCES ANALYSIS

First, I will begin by examining ERMS's strategic position, philosophy and guidance through the horizontal components of Porter's five forces. Initially, two of the horizontal components, threat of substitutes and threat of new entrants are discussed together because many of the concepts and influences that exist from a strategic standpoint are the same or similar for both forces. Analysis of the third horizontal component included in Porter's model, threat of established rivals, along with the vertical components, the bargaining power of suppliers and the bargaining power of customers, will follow and be discussed individually.

Based on concerns from Albert about the security of the software he has developed there is tremendous risk of substitution in the risk management market. As mentioned several times throughout this analysis, Albert has significant concerns about securing the content, technical capabilities and innovative characteristics of ERMS. He believes that if more mature competitors, or even start-ups like ERMS, were to gain access to his software's unique artificial intelligence and control capabilities they could easily duplicate or imitate the software code and process approach embedded in ERMS's software. Thus, this concern inhibits his company's potential to exploit the market for ERMS's competitive advantage that differentiates ERMS from competitors. Albert is not the only one who believes that the threat of substitution (e.g., reverse engineering) is an issue that exists throughout the industry. This fear exists throughout the industry as

discovered by my own analysis of several competitors. For example, two companies considered by many analysts to be prominent risk management companies in the industry are Methodware and Symbiant Risk Suite. Consultants for Methodware, and Symbiant Risk Suite were not cooperative when asked questions about the unique capabilities of their risk management software. As discussed earlier the information provided on their website provided only superficial data about their product and company's operations. After submitting an email requesting additional information on their products, I was contacted over the phone. In both cases, when I explained that I was simply a graduate student exploring the newly developed risk management industry as part of thesis work, I was able to extract information that differed from that provided on their websites. It appears that both consultants felt comfortable that I was not a competitor, but perhaps a possible contract that they might be able to pursue with the U.S. government. Consequently, if you believe you have a competitive edge based on differentiation, your organization is at a distinct advantage. But all must be aware that the threat of substitution is real and safeguarding of creative innovations in the risk management business is critical to survival in this nascent industry. This also indicates that even if you are not currently entrenched in the industry, access to market share is relatively easy if you have reasonable financial and human resources available to initiate entry.

B. TO PATENT OR NOT?

Issues concerning safeguarding innovative software within the industry place ERMS in a difficult position and present Albert and his staff with an interesting dilemma. After several discussions with patent attorneys about how to best safeguard ERMS's unique software capabilities Albert is undecided as to whether ERMS should seek patent protection or navigate unprotected through the competitive market and risk having his technology duplicated by a larger competitor with more resources. Without the additional resources, the latter choice places ERMS at an even greater disadvantage as it seeks to penetrate the market.

According to his lawyers, once a patent is submitted to the U.S. Patent Office it is available for public review. Therefore, it is very likely that a large company such as

Oracle, SAP or Microsoft has software experts constantly scanning pending patents to uncover new and innovative business opportunities to improve or increase their product portfolio. Although the company would be prohibited from copying ideas directly from those reviewed, there is nothing in the patent process that keeps competitors from developing software code that will perform the same tasks but in a different routine so as to avoid patent infringement.

Another disadvantage to the patent process is that lawsuits on patent infringement are very costly and may span several years before they are resolved. For this reason, unless the innovation a company is seeking to patent is so unique that duplication can be easily proven, small companies like ERMS are placed in a difficult position when considering the financial benefits a patent might bring their organization.

On the positive side of patenting is the possibility that if a company such as Oracle, SAP or Microsoft were to examine another company's innovative software and consider it a ground breaking revolution, they could decide to acquire the technology by a buyout of the company that holds the rights to the pending patent. This frequently occurs in the software industry (e.g., Microsoft recently acquired MySource).

Hence the dilemma faced by ERMS: should they seek a patent and ignore the threat of substitution yet enjoy some of the protection a patent offers. This is a major strategic decision that needs to be settled soon. It would be easy to ignore the patent and hope that the current market climate brings profitable opportunities at different levels in the industry. This would avoid the convoluted and costly process involved in obtaining a patent.

The technology embedded in ERMS's software package is a classic example of Porter's dichotomy of strategic competitive analysis. That is, a company must seek to compete with a differentiation strategy in an industry that anticipates market growth and innovation. The other extreme in Porter's industry analysis is to be low cost producer in a commodity industry. The software application in risk management does not fit the low-cost producer strategy, since technology is constantly improving the market for innovative and creative software solutions, especially in this new legalistic and regulated

business environment. Hence the patent issue takes on great importance if ERMS's growth and survival depend on the uniqueness of its one software package. The stakes are high but so are the business risks.

Considering all issues, if Albert believes the company has a break-through software package and the financial resources necessary to see the process through until the end, I recommend that ERMS should pursue the patent protection. My rationale for this is twofold. First, throughout the process Albert has held steadfastly to the idea that ERMS's capabilities are 100 percent unique in the risk management industry. Thus, duplication would be difficult, and even the creation of similar software would still be considered inferior to that of ERMS. Also, the exposure a pending patent might bring ERMS in the market place from a positive perspective could really only benefit the company. I am quite certain that companies with personnel assigned to monitor pending innovations and technical advances, if relevant, would begin to see ERMS as a serious player in the market — and that can only be seen as a good thing. Finally, if a large company views the technology as a complementary business opportunity they might pursue purchase of the product, which may create a financial windfall for Albert and his partners. Another alternative is that a company might offer to license the software.

Initially, it appeared that Albert's anxiety about the security and privacy of ERMS's technical capabilities was the one area for which he sought outside assistance through this research and analysis perspective. The threat of large established rivals, however, is actually the major concern for Albert as he introduces his product to the market and exposes it to competitors. Initial analysis of the market and industry indicates that there are several competitors that are well-entrenched in the management software business. Therefore, they may counter some of those advantages a small business might have from the analysis of the factors discussed above. Over the course of the next several pages, I will provide information on the competitors I believe offer the biggest challenge to ERMS, and provide analysis and recommendations on how to best deal with them. First, it is important to present the research methods that were used to identify the industry leaders. By simply accessing the internet and typing in some combination of the term "operational risk management software," a user will receive several hits. Actually,

users will encounter too many possibilities to effectively determine the differences between those companies that are considered

- stalwarts in the industry;
- those that are relatively new but offer a quality product; and
- those that are merely imposters hoping to capitalize on a market that is relatively new and therefore provide opportunities for some businesses to earn revenues that they would be unable to procure if the market was better established.

Although internet search engines provide users with several industry competitors, this is not a method that will provide any type of immediate feedback to begin analysis. However, it was useful to establish a starting point. By initiating some cursory discussions with Albert and his team, along with professors in the business school at NPS (those with a working knowledge of risk financial risk management firms), I was able to build a list of companies they all believed to be the prominent names in the industry. Once the list was complete, I did an initial scrub of their websites to determine if the software they provided was similar to ERMS, whether that similarity was tit for tat, or a substitute. If I determined that there was reason for further analysis I requested more information from the company via their contact through the email package provided on their website. All requests contained the same language. I introduced myself as an MBA student compiling data for a research project on risk management and the software industry it parallels, and a request that they contact me telephonically to discuss.

Consolidation of provided companies and ensuing research provided the following three companies as posing the biggest competitive challenge to Albert and his staff: Paisley, Open Pages, and Methodware. These three are large and well-known companies throughout the industry. Additionally, Approva, Logical Apps and Virsam, are relatively new but provide software that would be considered the most similar to that provided by ERMS. These three are also well known but, based on their relative infancy in the industry, are not nearly as recognizable as the others.

Although the large companies claim differentiation in software distinguishing their product from the others, in my opinion those claims are somewhat unfounded. Although I believe the software provided by Paisley appears to be somewhat inferior to

that of Open Pages and Methodware, for the most part, they seem to provide the same functionality. They primarily focus on assisting financial institutions in identifying or consolidating Key Risk Indicators (KRI's), organizing them in a manner that demonstrates to internal and external auditors that the company is aware of regulated risks as they occur during a particular process or activity, and then displays what controls have been established to mitigate the identified risk. All three software packages have a similar look and feel. However, Paisley's software lacks some of the innovation provided by the others in regards to KRI identification assistance.

Paisley's software consolidates and organizes previously used manual risk assessment models along with the checklist that accompanies those models. The models I am referring to consist only of industry specific (generic) financial risks as opposed to both industry and company specific financial risks. Paisley does provide automated tracking of those controls implemented by an organization to mitigate risk and identifies whether the control has been executed by an individual employee. Unlike other vendors' software, I was unable to do a hands-on demonstration with Paisley. However, Albert conducted an assessment via the demo provided on their website. It appears that there is no mechanism in place to assist management in identifying risk other than those provided within the initial software package. Primarily, Paisley acts as an automated replacement to old paper trail audit systems that allow financial institutions to demonstrate automated compliance with many of the newly implemented accounting regulations. Throughout the industry this is referred to as an automated work audit process, not an actual risk management tool where the efficiency that an organization manages risk is improved. According to their competitors, this makes their claims and software capability inferior to those of companies like Open Pages and Methodware.

Paisley believes that its software package improves organizational control of financial processes and that such a tool is easily incorporated into an institution's business model and therefore is a cost effective solution to managing financial risk and demonstrating compliance. Although I was unable to get pricing information from Paisley, I believe that they have carved out a niche in the industry. They are offering their product at a price moderately lower than competitors and targeting financial

institutions that are in the infant stages of dealing with operational risk and controls. These financial institutions do not have the capital and resources to afford some of the more expensive and functional software packages available on the market. Even though Paisley is considered a major player in the industry, based on information provided on their website and via a conversation with one of their account executives, I would say they have a long way to go if they plan to compete for the same customer base as those enjoyed by the Methodware and Open Pages. This is also consistent with the statement that they are targeting smaller financial institutions or organizations that lack the resources to commit large amounts of money to Governance Risk and Compliance requirements. Another indication of Paisley targeting only smaller financial institutions is their reluctance to disclose their client list on their website. By making such information public, Paisley could significantly enhance the credibility of their software if their current client list consisted of large, profitable and well-established financial institutions.

What distinguishes both Open Pages and Methodware from competitors is their software's ability to provide a tool to determine whether or not management needs to consider examining other risk within a business process brought about by the default KRI's provided by most risk management software provided in the industry. Furthermore, their software allows their clients the ability to implement their own risks and identified controls into the package without requiring modification of the standard software package.

I was able to attend a one-on-one meeting with Jake Simmons an executive with Method Ware, during which he demonstrated the company's unique (in his opinion) ability to assist user's in building additional KRI's and controls into their software. Throughout the demonstration, it was evident that all identification and implementation was completed without the need of technical assistance. For the most part, it appeared that if the user was able to navigate through the provided windows, he or she could indeed accomplish all of the software tasks that Methodware claimed were available. However, as I observed the demonstration, I doubted users at the middle and lower levels

of an organization would be able to navigate their way through the system. I addressed the question of ease of use to Jake, who acknowledged the company was trying to improve this area..

I was not able to personally observe application of the Open Pages software. However, I can say with confidence that Open Pages software generally provides the same functionality as that provided by Methodware based on Albert's analysis of the online demo and my research of the company. After conducting independent research, I was able to determine that Open Pages and Methodware are almost identical in the software they offer, much like a pair of basketball shoes provided by Nike vice Adidas. What allows them to operate successfully as independent entities appears to be their target markets and price point of their software.

Open Pages' published client list includes several domestic firms along with a sprinkling of international firms while Methodware's customer list includes several international firms along with a sprinkling of domestic firms. This concentration of clients seems to be supported by the location of their home office based on their home office. Methodware is based in Australia with an office in the U.S. that employees approximately twenty personnel while Open Pages is based in the U.S. with smaller international offices established to support global customers. Both customer lists are extremely impressive and lend credibility to the stature of each competitor similar to brand recognition. Open Pages more impressive clients are SABMiller, GEICO and Kodak which are relatively large businesses. Methodware's more impressive clients are Bank of Tokyo Mitsubishi, Coca Cola South Africa and University of Phoenix. Both companies' customer list is extensive.

Another area where one company might differentiate itself from the other is selling price. According to Jake Simmons, his company prices its software package on what he considered the low end of market providers. He quoted a price of approximately \$120,000 annually, \$30,000 in licensing fees and \$80,000 in user's fees (the majority of their contracts were based on 100 users). If that is actually the case, then Methodware might attract some of its customers based on pricing its software lower than Open Pages. This seems reasonable since Albert based his selling prices using the same philosophy

and there is little difference in ERMS's price and Methodware's. I was unable to get selling price data on Open Pages, but it would tend to make sense based on their customer base and market that they might price their product slightly higher than domestic competitors as they might be seen as the industry leader.

Based on an interview with an executive who works with Protiviti (an independent financial risk management consulting firm based in San Francisco), I identified some competitors that had not been on Albert's radar or for that matter any of the financial risk management experts I had talked to in the early portion of the project. Protiviti is a company that provides consulting and advisory services to help potential clients identify, assess, measure and manage financial, operational and technology-related risks encountered in their industries, and assist in the implementation of the processes and controls to enable their continued monitoring. They also offer a full spectrum of internal audit services to assist management and directors with their internal audit functions, including full outsourcing, co-sourcing, technology and tool implementation, and quality assessment and readiness reviews [9]. I uncovered the company while researching GRC and believe that they have been able to provide the most reliable information on the risk management software industry along with unbiased opinions on market trends and competition. I believe this because although they do offer some software solutions for auditing financial controls, their primary interest is to assist companies as they begin their quest to comply with government directed regulations. As a result it is their job to determine methods for compliance followed by those solutions they believe to be the most beneficial to an institution. Therefore, after analyzing a particular company, they might actually recommend the company use the solutions provided by Methodware on one occasion and Open Pages on another. I explained to the executive what Albert believed to be the function that differentiated ERMS from competitors and based on his experience, he believed that there was some truth to Albert's claim. However, he gave me the name of three relatively new firms that he thought made similar claims of functionality as ERMS and recommended I do some research on each. The firms he mentioned were Approva, Logical Apps (recently purchased by Oracle) and Virsam (recently purchased by SAP).

After conducting analysis of Approva, Logical Apps and SAP's software, I believe they offer significant challenges to ERMS. There are several reasons for this. Among those I believe present the most significant challenge to ERMS are: the ability to act as substitutes to ERMS's claim of unique financial control execution, superior brand recognition, complimentary capabilities of other business related software packages provided by the companies, and availability of capital. First, and what will be the biggest challenge ERMS will face as it works to establish its position in the market, is the question of control execution differentiation. As previously discussed in this analysis, ERMS is able to take management's KRI's, develop controls to mitigate determined risk, and then take the process one step further by managing and executing the implemented control with the automated tools provided by ERMS. According to Albert, ERMS's ability to manage controls is exponentially better than that of any of the competitors. Albert refers to ERMS's unique ability to manage controls as "artificial intelligence." I believe that an institution looking to purchase GRC software would scrutinize the claims made by ERMS, compare them to the claims of Logical Apps, Approva and SAP and come to the same conclusion; they all assist management in executing mitigating controls to some degree. Therefore, whether or not one does it better than another might not be as critical to the purchasing process as Albert believes it is.

Albert must be aware that unless there is significant value added to the way financial controls are managed using ERMS, the use of artificial intelligence probably becomes insignificant in the decision process used to determine what software package a potential customer purchases. Therefore, Albert should seriously consider the control capabilities of these companies and reevaluate ERMS's ability to claim differentiation as one of the key components to his product's strategic platform before making any long-term commitments to the claim. The reason for this is simple, when developing a strategic plan from the perspective of substitution as it relates to Porter's Five Forces; there is no question that all three companies can replace ERMS as a substitute in one way or another. Whether or not that threat is significant enough for Albert to adjust his company's strategic position as it relates to the threat of substitutes is a decision he must consider as he develops his strategic plan and grows his company.

Another serious challenge ERMS faces from Approva, SAP and Logical Apps is brand recognition. With the exception of Approva, SAP and Logical Apps (a component of companies running Oracle based business solutions) there is no question that businesses associated with the technology sector are familiar with SAP and Oracle. Even if potential customers are not aware of the products and services they provide, there is a good chance that they are familiar with their names. Small businesses hoping to penetrate a particular market or geographic region need to be aware of the existence of those organizations in that industry whose name provides comfort to prospective customers and understand that it might benefit them to avoid those regions where brand superiority might exist.

Another consideration with respect to brand recognition that Albert should consider is the client list of competitors. Much like the ability of potential customers to recognize a supplier through a product's brand name is the recognition of current customers using a particular product. If a company is conducting thorough research of a potential supplier, they might refer to the client list of that company and see whether or not other customers have demonstrated confidence in that product. If there is a demonstrated interest by well-known current customers, undecided customers might be more willing to purchase the product of a competitor that has a well known and established client base. While Logical Apps provides no current client list on its website, both SAP and Approva provide extensive lists. Similar to Open Pages and Methodware both lists are impressive and need to be considered when ERMS is determining what sector of the market it believes is the most realistic to penetrate. Among some of Approva's more impressive clients are Proctor and Gamble, DIRECTV and Bayer. Among some of SAP's more impressive clients are Marathon Oil and Siemens.

The final component of horizontal strategic analysis and threat of substitutes that Albert should consider is whether or not a competitor can provide customers with quality complimentary goods. Although Approva, SAP and Logical Apps all provide complimentary products and services to their customers, ERMS should be most conscious of the threat posed by SAP and Logical Apps. SAP offers the ability to provide ERP business solutions for customers directly linked to its GRC software.

Therefore, SAP poses a unique threat to any competitive entrant into the industry. On the other hand, with Logical Apps link to Oracle's software solutions, competitors face similar challenges. As ERMS navigates its way through the horizontal components of Porter's Five Forces, Albert will have to determine creative ways to compete. There is no question that he must determine creative and innovative methods to keep ERMS from being squeezed out of the sectors he chooses to penetrate based on the challenges discussed above.

The last two tools provided for strategic analysis by Porter's Five Forces are the bargaining power of suppliers opposed to the bargaining power of customers held by one over the other when considering the exchange of goods and services. Within the financial risk management industry these factors can be analyzed together because of the industry's relative young age and small size. Based on these two facts alone I do not believe there are significant differences in the relative positions either can take despite the sector, size or current position they hold in the market. Based on the research and analysis conducted for this project, current and future trends project a market that should remain comparatively unchanged for the next several years. As a result, I believe that neither the supplier nor the customer holds a significant advantage over the other when it comes to predicting market leverage. Another explanation for this conclusion is that currently suppliers and customers are still trying to figure out their positions relative to each other within their own entity (i.e., where does an organization stand in the pecking order and ability to influence with respect to other suppliers in the industry). Therefore, how could one possibly employ some sort of competitive edge over the other?

An argument could be made that the fact that I believe that this will remain the case for the foreseeable future is a poor assessment. Within any globally competitive industry, especially the tech industry, the ability to remain relevant and competitive is often defined by a business's ability to implement innovative ideas quickly and force competitors to adapt to your innovation or face possible loss of market share. Because of this, growth, change and power among competitors and suppliers within the industry should change constantly rather than remain stable for the foreseeable future. However, in the case of ERMS and the financial risk management industry I believe the foreseeable

future is no more than the next three years. At that point Albert and his staff can analyze their position within the market and decide if the strategic landscape has changed and whether or not changes must be implemented. I believe this to be the case for ERMS based on the speed with which decisions and tasks are accomplished in the market Albert operates today. For example, Albert and his team have been working to secure a contract with First National Bank in Omaha since early 2007, and although they felt confident throughout the process that the contract would be secured, it is now May 2008 and the contract has yet to be finalized. Therefore, it appears that the business side of the financial risk management industry still has some developmental issues and has yet to catch up with the pace of technology. I believe that this is further demonstrated by the fact that Sarbanes-Oxley was established in 2002 and the market is still defining itself and has no clear industry leader in 2008.

IV. MARKETING

ERMS should develop a marketing plan to accomplish its goals as it pursues penetration of the financial risk management market. The marketing plan should include the following components: an Executive Summary, Situation Analysis, Market Strategy, Financial Requirements and Management Controls. The development of an Executive Summary and Situation Analysis can easily be constructed using the research and subsequent information provided by the strategic analysis in this paper. However, I will provide recommendations on the third and fifth components of a marketing plan for ERMS: Market Strategy and Management Controls. The recommendations only provide the building blocks for a thorough marketing campaign and must be carefully developed and implemented in order for ERMS to realize the complete benefits. Finally, due to the uncertainty of sales and revenues that currently exist throughout the financial risk management market and ERMS's relatively new position in the market, it is premature to attempt developing a financial forecast. However, the company should prepare formal financial statements for its past operations and a statement of its resources and capitalization.

A. MARKET STRATEGY

A successful marketing strategy should include a business's objectives, target markets, positioning, strategies with respect to product, pricing, distribution, and communications, marketing mix and research [10].

B. BUSINESS OBJECTIVES

The first task that faces ERMS as it builds its marketing strategy is to determine company's short-term goals. For purposes of this analysis and based on ERMS's current position in the market, short-term should not extend past two years, with primary focus on the first year of operations. Also, ERMS should define its objectives in terms of the market in which it will compete, and estimate a reasonable share of that market. This will provide ERMS two benefits. First, it will focus the company on a specific goal that

will allow Albert to evaluate the business after a pre-determined amount of time. It will also assist Albert in determining whether ERMS is headed in the right direction with respect to its marketing objectives. Rather than simply stating, “I want to establish ERMS as a competitor in the financial risk management market,” Albert should state an objective for ERMS that says, “By June 2009, I want ERMS to have achieved a 2 percent market share of the financial risk management market.” Furthermore, the particular market in which ERMS wants to achieve market share must also be well defined. For example, the market might be only new publicly traded financial institutions started within the past eighteen months. Other advantages that ERMS will enjoy by developing thorough, quantifiable objectives is that it will provide ERMS with a set of tangible goals rather than just a hope, as has been the case in the past, for improvement. The other benefit of defining objectives in terms of market share is that it will force Albert and his staff to gather financial data and operating data on ERMS’s competitors. By doing this, ERMS management will have information on their competitors that will prove invaluable to the company as it strives to become a viable player in the financial risk management market.

Based on the information collected for this project and the analysis that follows, I believe that Albert should set ERMS’s goal at 15 percent of the market that consist of those financial institutions that are in the process of applying to be publicly traded and 15 percent of the financial institutions that have started trading publicly in the past three years. If Albert chooses to move in another direction, he might consider establishing his market share objectives based on the annual revenues of clients. For example, Approva has a client list that consists of Comcast, who generated over eight billion dollars in revenue in 2007; T-mobile, who generated just over four billion dollars in 2007; and Siemens, who generated over 80 billion dollars in revenue in 2007. Therefore, it is quite clear that Approva targets clients with revenues of at least a billion dollars. If Albert chooses to target ERMS’s customers similarly, he might follow the lead of Approva, but lower the revenues of his targeted clients in order to avoid unnecessary competition with companies like Approva and Logical Apps. I recommend ERMS target companies that consistently earn revenues of 500 million dollars or greater annually. Doing this will

provide focus and establish a realistic client base to ERMS as it works to become a relevant competitor in the market. It is also likely that Albert will find that companies that have started trading publicly in the past three years, generate 500 million dollars of revenue, and are in the process of becoming publicly traded fit into the other targeted market.

C. TARGET MARKETS

One method ERMS could use to establish its target markets is annual revenues and position of potential clients as discussed above. Both are examples of market segmentation but were discussed in terms of objectives in order to demonstrate the importance of establishing quantifiable to evaluate or failure of current programs. As other methods of market segmentation are discussed in this section, Albert needs to keep the principle of quantifiable objectives in mind and use the examples discussed above to develop ERMS's target market strategy in the financial risk management market.

Albert could consider a differentiation strategy as he targets specific markets. While this might also reduce the size of his targeted market, it will expand the revenue base of potential customers and prove to be more profitable in the long run. I am recommending a product differentiation strategy. Throughout this analysis, I have referred to ERMS's unique ability to execute financial controls. According to Albert, what ERMS does, that no other company selling financial risk management software does is execute controls that have been identified and implemented by a company that uses financial risk management software. Albert maintains that other financial risk management software only provides an organization a place to implement a control which must then be executed by an actual person. However, ERMS can execute that same control without human assistance. By claiming differentiation Albert can target the entire market of publicly traded companies, regardless of revenue, along with start-up companies. Again, if Albert chooses to use differentiation as his method to target markets he must set specific and quantifiable goals that allow him to evaluate this choice regularly. Also, Albert should be inherently aware of the potential threat posed by substitutes that exist in this industry (discussed in the strategic analysis portion of this

paper) and ensure he has taken extensive action to mitigate this threat. Finally, at a minimum, ERMS should evaluate the success of its marketing program semi-annually and adjust or abandon the selected method based on prior planning.

D. POSITIONING

After determining market segmentation and strategy, Albert must next determine the most creative way to position ERMS within the industry. Regardless of whether Albert chooses to segment the market based on the revenue of potential clients or ERMS's unique control execution capabilities (differentiation), he should emphasize selling price as ERMS's position within these markets. He can do this because he is able to produce, install, and support ERMS at costs significantly lower than that of his competitors. Therefore, he can set a price point for his product that will position ERMS as a price leader in the market. The ability to enter a market as the least expensive and highest quality product available would definitely get ERMS off to a promising start.

E. STRATEGIES

To assist Albert as he determines the best strategy to market ERMS it is important that the marketing strategies used are broken down into specific areas. The specific areas Albert should consider are product, pricing, distribution and communication.

First Albert must determine the most effective way to demonstrate to his customer that ERMS is a superior quality product. Often this is accomplished through unique slogans, memorable brand names and flashy advertising campaigns. Currently, ERMS uses an eye-catching logo (grey and yellow Rubik's Cube) set on a background of several shades of grey with white and yellow lettering. The image the consumer receives is attractive and professional but fails to effectively demonstrate the key components of ERMS's unique software capabilities competitive pricing and differentiation. In order to improve the overall quality of the ERMS brand and advertising message he wants ERMS to portray, Albert needs to develop a plan to incorporate the words "cost" and "differentiation" into any material currently available for public viewing. For example, advertising fliers currently in circulation need to have some reference to the low cost and

unique software capabilities that complement the professional appearance of the flier. Currently, potential customers must read the entire flier from cover to cover to access differentiation information but no pricing data is available. In my opinion, ERMS loses a number of potential customers because of this despite the professional and attractive design of their fliers.

Next Albert needs to focus on pricing. Albert should use the pricing suggestions discussed throughout this analysis. As Albert researches industry competitors he should continue to use the current price of \$65,000 per module and \$5,000 for installation. Based on information provided by risk management executives and personal research these prices are competitive and slightly less than those of the competitors used for research comparisons in this analysis. However, as Albert becomes more knowledgeable on competitor's prices he should attempt to significantly cut the prices he offers to ERMS's customer base. This will force his competitors to adapt accordingly, leave the industry, or allow ERMS to increase or totally control their market share.

There has been little discussion on the distribution techniques used by ERMS in this analysis due to the small size and limited number of current and potential customers. However, as ERMS grows and the business benefits from a successful marketing campaign an efficient distribution plan will be critical to maximizing revenue and overall profits. ERMS currently uses direct delivery from seller to buyer as their distribution technique, seller to buyer. However, ERMS might want to consider on-line and trade shows as possible vehicle to both market and distribute their product. The use of the internet as a tool to distribute ERMS software could prove beneficial to ERMS since it is method of financial risk management software distribution that is relatively untapped. For example, Capterra, a website that helps buyers find, evaluate, and select enterprise software provides only five software solutions that meet the following criteria: a purchase price of greater than \$1,000, financial risk management software, and regulatory compliance management capabilities. With so few options available to potential buyers it is clear that on-line distribution is a technique many competitors have yet to utilize. Also, it presents an opportunity to market the product concurrently. ERMS could offer its product through on-line vendors like Capterra, or sell directly from their website.

Another distribution technique ERMS should consider is risk management and general software trade shows. Attendance at trade shows would allow Albert to build valuable networks within the industry of buyers and sellers, a tremendous marketing tool. At the same time, this would allow Albert to take advantage of a concentration of potential buyers that attend such a function and who all have an identified interest in financial risk management software. It would also allow Albert to avoid the frustration that often accompanies finding potential clients. Finally, it would offer Albert the opportunity to determine which of his competitors offer the greatest threat to ERMS. This would allow Albert to compare ERMS to other financial risk management software available on the market by viewing competitor's software and talking to their software representatives. These software representatives may be technicians whose knowledge and understanding of their software is much better than an account executive. In addition, the competitor's software being analyzed is likely to be the entire product rather than the generic demo that is available on-line.

Finally, Albert needs to evaluate the methods he will use to communicate ERMS's availability and benefit to the public. As previously discussed, Albert is now using the internet, mailers and networking as his primary techniques for communicating the availability of ERMS and its message. However, what ERMS has failed to do is evaluate the effectiveness of any of these mechanisms and consider alternatives to those methods that are not productive. Therefore, Albert needs to establish quantifiable measurements of each method discussed and then determine what methods represent "value added" success. For example, Albert should establish the number of hits he believes ERMS's website should receive daily, monthly, and annually. After that, he could make an informed decision as to whether the effort required to maintain the website and employ someone to run the site is beneficial to his business. If ERMS's website is not meeting those initially determined standards, then Albert might consider adjustments to improve the value the website. Albert would also have to evaluate the effectiveness of the mailers. Mailers may have to be eliminated if Albert finds that the value they bring to ERMS is not significant.

F. MARKETING MIX

After determining the methods Albert believes will most effectively communicate ERMS's message to consumers, he must next implement an effective mix of those methods that will maximize that communication to as many potential clients as possible. Albert's needs to ensure that the methods he chooses are specific and easily evaluated in order to determine efficiency as previously discussed in the marketing portion of this analysis. One approach he might use when determining the proper marketing mix for his product is monthly individual tests of a specific mix that can be numerically evaluated against an entirely different mix the following month.

Some possible mixes of marketing campaigns might include running an advertisement in a risk management publication while at the same time publishing an article authored by Albert in that same magazine. Risk management magazines that Albert might consider are "OpRisk" and "Compliance." Several months later, Albert could run the advertisement without the article and see if the responses he receives from interested clientele are greater or less when running the ad parallel to the article.

Another marketing mix Albert could attempt and evaluate effectively is a trade-show/email/phone solicitation campaign. As previously discussed, trade shows are a forum where the congregation of potential buyers and sellers is optimal. By attending a trade show and exchanging business cards with potential clients, Albert will have established a customer base with little effort. Next, he can take those contacts and follow up with personalized emails about their encounter at the trade show and include some additional information about the product they discussed at the trade show. Finally, if Albert receives any feedback in the form of an email reply, he could call the individuals personally, rather than responding via email, and address their questions/concerns telephonically. Again, this method could be easily evaluated and, accomplished at minimal cost to ERMS.

G. MARKETING RESEARCH

Market research is the final consideration Albert must implement in his strategic marketing strategy. Fortunately, the analysis conducted for this case study has provided Albert with all the data needed to complete the required market research and use it to effectively assist in developing ERMS's marketing strategy. A quick summary of the existing financial risk management market includes the following:

- It is a developing industry with few barriers to entry.
- If you can price your product significantly lower than your competitors you hold a distinct advantage over them.
- Neither the supplier nor consumer has any significant power over the other.

H. MANAGEMENT CONTROLS

The controls that Albert chooses to monitor and evaluate ERMS's marketing strategy have been discussed at length throughout this analysis. Marketing controls are defined as the tools an organization uses to ensure successful execution of their pre-determined marketing strategy. Currently, ERMS has no individual or team in place to monitor the effectiveness of their business' marketing strategy. Therefore, I recommend that ERMS immediately develop a marketing team to implement and monitor some of the proposals suggested in this analysis. I suggest that team be started by hiring one individual due to current financial restrictions. Once that individual is hired, he or she could be augmented by individuals already employed by ERMS on an "as needed" basis. Although Albert might believe that ERMS's limited funds could be better used elsewhere (i.e., leasing an office building) the success of ERMS hinges on the company's ability to generate revenue. Without an effective method to generate sales, there will be no revenue and ultimately no ERMS.

V. CONCLUSIONS

The construction of this case study has been a fluid process. As this case study was drafted, I met weekly with Albert to discuss the progress of the analysis. At the conclusion of our meetings, Albert would often process the content of our discussions and implement or adjust ERMS's operations accordingly. Therefore, many of the conclusions and recommendations made in this section of the analysis are based on courses of action Albert and his team at ERMS have already implemented. The way the process unfolded was not planned; however, Albert and I both benefited from this evolutionary process. By providing direction and focus to Albert as the process evolved, ERMS was able to move forward in the development of its business model rather than waiting until the completion of this report.

The biggest obstacle faced by ERMS was how the company should move forward: grow organically with no outside funding assistance, grow organically with the assistance of outside funding, or seek a buyer to the licensing rights of ERMS. Albert has decided to concentrate his efforts on growing the company organically without the assistance of outside financing based on my recommendations and his own beliefs. He has also decided to pursue hiring of a CEO. He believes the experience of the possible candidates will mitigate some of the financial burdens the company will experience without the assistance of outside funding. Along those same lines, ERMS should also consider continuing to foster relationships with local business schools as a means of low-cost expertise and management efficiency.

The other real challenge faced by ERMS is how to penetrate the financial risk management market and be considered a legitimate competitor within the selected market. Several recommendations were made in the body of this analysis. I recommend that ERMS pursue a revenue-directed strategy primarily focused on the low-level consumer considering ERMS's current business plan, the opportunities that exist in the low to middle market financial risk management industry, and ERMS's decided advantage with respect to production and support cost.

Another hurdle that ERMS must overcome when pursuing customers is quality if low-level consumers do not consider price an issue. To overcome this obstacle, I recommend that Albert hire an analyst to develop a model that demonstrates how ERMS's control execution capabilities will bring value in terms of financial saving to prospective customers. It would be extremely difficult for customers to say no if Albert is able to demonstrate significant savings coupled with a low purchase price.

Finally, here are some ideas Albert should consider regardless of the direction he chooses for ERMS. First, he should participate in financial risk management conferences. They are held regularly and access to them can be gained by getting on an email list such as Approva's (easily done by requesting more information on their company via the company website). Albert will receive notification as to the time and place of many of these conferences. Next, he should attend software trade shows with regularity. Based on ERMS's current location, Albert should use access to Silicon Valley to his benefit. Finally, Albert should take advantage of any opportunities provided by the Small Business Association (SBA). For example, the Department of Defense provides opportunities for small businesses, through the SBA, to provide the government with cutting-edge technology if it meets their specification and requirements.

There is no question that the financial risk management industry is lined with opportunities. It is also evident that ERMS is a tool that can provide institutions struggling to manage financial risk a low-cost, reliable tool to combat that risk. At this point, Albert should continue to build on the findings and recommendations in this analysis and move to the future with the comfort of knowing the goals he has established for his company are achievable.

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Additional References

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