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Penn State Smeal CMTOC Highlights of the Forum: Forty-Sixth Meeting

"ERP Implementation Success Analysis - Commitment, Planning, Execution, and Ownership "

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Sentry Technology Corporation was formed in 1997 through the merger of Knogo North America, Inc. and Video Sentry Corporation. Sentry Technology designs, manufactures, sells, installs, and services Electronic Article Surveillance (EAS) systems through the Knogo division, and Closed Circuit Television (CCTV) systems through Video Sentry. Knogo North America started the EAS industry in 1966, and has a long record of industry firsts and advancements. Video Sentry is a leader in video technology, and was the first to develop the cable-free traveling CCTV security system. Sentry Technology serves industrial, retail, educational, and institutional market segments.

Sentry Technology faced major obstacles implementing an Enterprise Resource Planning (ERP) system. The major problems included management's lack of direction in addressing the company's business processes, the overall scope of the project, and the effort required to maintain the system. Business processes were too large and employees didn't have the ambition or direction to correct the situation. Additional obstacles included viewing the ERP system as an IT project rather than a company project, cultural issues arising from new operating methods, and the need to have people accept the risks of the project. The program also required approval from top management, executive management, and the board of directors.

Implementation of the ERP system started with an analysis to identify the critical issues facing the company. The three major areas of concern were information technology, business, and application issues. Information Technology issues included long-term strategic planning, lack of a common software platform and application, redundant data bases, outdated software, inadequate network infrastructure, and insufficient cross-functional skill sets of IT personnel.

Business issues were a departmental attitude towards business processes, a business model and organizational structure that impeded the flow of communications, no documentation of processes and controls, and a lack of education and experience in ERP projects.

Application issues covered multiple problems. Inventory and shop floor control issues originated from the lack of automated methods to view inventory movement or track progress of products. Forecasting and production problems revolved around the lack of an integrated mass-production schedule, and the inability to load requirements down from a MRP system. Financial and costing problems resulted from limited or no standard system integration across the company, and the inability to review variance reporting. Engineering problems evolved from lack of effectivity dates for Engineering Change Notification (ECN) procedures. Ineffective timing resulted in expansive inventory and supplies of outdated components. Additional application issues included administrative problems with manual methods to track leasing and asset allocation. Finally, the inability to determine real-time status at any facility resulted in customer service issues.

The next step in the analysis of the ERP project defined the requirements of the system. This began with the formation of an evaluation team. The project was a company-wide undertaking and involved all operational disciplines. Key personnel responsible for day-to-day functions were identified and recruited to the team. Each person on the team documented the business processes

and issues for his or her area of responsibility. Team members listed all problems they were having, and developed a system wish-list. They also documented the ability to maintain existing service functions during the transition, and developed an evaluation outline to select vendors. The project goals were identified along with the requirements necessary to achieve them. Major goals included unifying the organization and improving service levels, along with reduction of costs, inventory, and redundant tasks. In addition, the business model would be changed in order to open communications and reduce the staff through consolidation, reassignment, and flattening the organization.

The analysis of the ERP implementation also involved vendor selection. The team reviewed all requirements as defined by key managers and users, and created a short list of possible ERP vendors. They narrowed the list down to systems with platforms already running at Sentry Technologies, or the emerging SAP system. The final decision was based on the following criteria: Applications must have full function integration through all suites with multi-company, country, and currency capability. The vendor must be willing to provide the source code and the ability to modify the existing package. Major business considerations were vendor R&D commitments to future releases, and a significant financial base to provide the ability for internal investment. Other important factors included the ability to provide global support, and an installed base of customers to check references and reputation.

Sentry Technology met with each vendor to establish the scope and timing of the project. Detailed product demonstrations required that actual Sentry Technology data be used. The use of real data provided a focus for each person involved in process, and gave them the ability to identify and evaluate the system. Sentry followed up with each of the users to determine how close of a match the ERP package would be, and how much additional configuration would be required to make it complete. In addition, each user completed a vendor evaluation survey that compared each issue vendor by vendor, and ranked vendors as to which package would be best suited for each individual user's function.

The project manager and department heads were involved in the final part of the analysis in which a solution recommendation for the ERP system was developed. The selected vendor was System Software Associates with a BPCS system running on an AS400 platform. In total, there were 17 applications selected as part of the suite covering all organizational groups in the company. The evaluation and selection process was formed on a worldwide basis, with the initial implementation focused at the New York and Puerto Rico facilities.

The ERP project required a tremendous amount of commitment from all people involved. The ERP project was viewed as a company project, not just an IT department project. In order to increase the potential for success, all employees were required to take responsibility for the success of their portion of the project. A mission statement was created so that people would have a clear vision of what the ERP system would accomplish. Management objectives were set to include being a proactive not reactive organization, improve processes, increase controls, reduce operating costs, create performance measures, and increase customer responsiveness. In order to achieve these objectives top management committed the best qualified resources to the project, and all operating managers developed their own business case within the parameters of the project scope and vision. All department heads created their own justification statement defining the benefits of the project to both individual operational units and to the company as a whole.

Planning the implementation of the ERP program required careful consideration of multiple factors. A detailed project plan was developed assigning personnel responsible for each functional area during each phase of the project. The team developed an 18-month time-line for the implementation of the project. The big bang approach was selected to bring all applications on-line at the same time. Components of the plan included technical installation, education, policies, data integrity, performance metrics, testing and acceptance, conversion, and a system effectiveness review. Financial considerations involved the creation of a project budget, and detailed investment analysis of ROI, financing, and long-term support agreements.

A key decision of the business model was to accept the process assumptions embedded in the software. This was a mandate that was followed throughout the business model and implementation of the program. Approaches to the model included utilizing best practices of the

organization and software offering, while maintaining the ability to tailor a high degree of configuration options to business objectives. Resource constraints were determined to be with existing personnel, and outside consulting was utilized to keep IT staff increases to a minimum. In addition, auditors were used to review and support the plan, and to reassure that there were no material weaknesses in the plan.

The execution of the project began with defining the program expectations to give a realistic perception of what the system will deliver. Briefings were held with the top executives to reaffirm the commitment, scope, and direction of the project. Company kick-off meetings were held at each facility with the CEO explaining that it was a company-wide project, and that there was a strong commitment starting with the top management. The ERP team assigned individual project teams. Training and knowledge transfer were stressed by budgeting 15% of the total project funds for education. The training was provided in-sync with the implementation plan using actual company data to maximize the benefits. Each group being trained developed databases for the next group of trainees.

Project team meetings started monthly, then were held weekly and daily as the project advanced and neared completion. Performance milestones and variances were determined and plans were developed to bring the project back on schedule during periods of slippage. The system was prototyped to determine performance and refinements to project issues. A pilot program was created and used to test all conversion programs for function and accuracy. Finally, after the ERP package was completed and accepted with management sign-off, the actual conversion began.

The ERP project at Sentry Technology was a success and many benefits were realized. Significant improvements included inventory reductions, increased inventory turns, increased ability to service customers, and greater information availability on customer order status. There were positive changes in the corporate culture resulting in the removal of organizational barriers, and a greater understanding of the entire process. Finally, data collection methods and devices permitted real-time tracking of product and costs.

ERP systems continue to evolve after the implementation of the original program. Change should be driven by the business operations, not by the underlying technologies. Management of the business strategy, investment, education, benefits, and processes are essential to ensure continued success.

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