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1991 Anaquest sales force automation project

Joseph C. Carter

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THE 1991 ANAQUEST SALES FORCE AUTOMATION PROJECT

by

Joseph C. Carter

An Applied Management


Decision Report

submitted in partial fulfillment
of the requirements for the degree of
Master of Business Administration
Cardinal Stritch College


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APPROVAL PAGE

This committee has approved the applied Management Decision
Project of Joseph C. Carter

 7/23/91

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#1

CASE SUMMARY

The purpose of this paper was to evaluate the feasibility of undertaking an upgrade and expansion of the Anaquest Professional Services Program. This study has been designated the 1991 Sales Force Automation (SFA) Project. The Anaquest Sales Representative has been using a laptop computer as a selling aid to help promote the effectiveness of Anaquest's anesthetic products since 1985. Considering the 69% failure rate of the current computers, and the technology changes over the past six years, now may be the most opportune time to upgrade the field computers.

Four options were available: 1. Implement new computers with a complete Territory Management Software System; 2. Implement new computers with upgrades to existing software and a more basic Customer Information System (database and mail merge); 3. Discontinue using computers completely; or, 4. Make no changes and continue to use the current computers.

The results of the analysis supports the second option as the most desirable when considering the economics, implementation, and utility of the computer as a selling tool for Anaquest.

Anaquest, Inc, with headquarters in Madison Wisconsin, is a BOC Health Care Company which is a division of the BOC Group located in Windlesham, Surrey, England.

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SECTION 1
INTRODUCTION OF LAPTOP COMPUTERS,
THE INITIAL APPROPRIATION REQUEST

General Overview

During the early to mid-1980's microcomputer software applications for medical simulation applications were being developed by many world class pharmaceutical firms as a means to improve rapport between physicians and sales representatives and increase pharmaceutical sales. It became apparent that microcomputers could become a valuable educational and promotional tool in the pharmaceutical industry. Anaquest had a window of opportunity to be on the leading edge of this new technology in its application of the microcomputer to the anesthesia profession.

The original project, referred to as the Professional Services Project, was approved and implemented in 1985. Its purpose was to provide "a microcomputer-based program designed to address the cost effectiveness of Anaquest's inhalation agents, provide key information to the end user, assist in sales analysis, and reinforce Anaquest's image as a resource/service organization" (McGee, 1986). The project was implemented with a roll out based upon a consensus of marketing and sales management that the use of the computer program would result in a one percent increase in market share.

As part of the divisional planning at the time of the project was the coincidental launch of branded generic

products such as enflurane, a general anesthetic agent, which was just coming off patent. The 1985 Professional Services Project was perceived to be a vehicle by which Anaquest could target resources more effectively into the marketplace via improved product recognition through promotion and direct marketing, and gather the marketing information through the use of automated sales territory management.

Approximately \$162,000 was expended for a pilot test of a new computer hardware and software system. Computers were tested from IBM, Compaq, and GRiD Systems. Each vendor offered "portable" computers, but only GRiD Systems provided a true laptop computer - weighing less than 20 lbs.

The GRiD products were chosen after extensive testing. The model selected was highly portable and durable weighing only 12 pounds and made with a strong magnesium case. The slow speed of the computer, although relatively fast in comparison to other products available, was a concern. Promises of future new ROM (Read Only Memory) technology that could load software into memory 15 times as fast as the current disk memory technology was a major decision point for GRiD. Capabilities were evolving that could potentially allow all of the software to be converted directly onto ROM microchips.

Once approved, the total computer system network was comprised of the following:

- 105 GRiDcase II portable computers
- 95 Hewlett Packard ThinkJet personal-sized printers
- 1 GRiD file server
- Associated file server equipment
- Various printers and telephone modems
- GRiD Operating Software
- Microsoft Disk Operating System (MS DOS)
- GRiD database software
- Associated GRiD and packaged software programs
- Specially written marketing software programs

The GRiDCase II computer was configured with 512 kilobytes of Random Access Memory (RAM), a 9" diagonal Liquid Crystal Diode (LCD) display screen, one 3 1/2" 720 kilobyte diskette drive, a 1200 bits per second (bps) internal modem, a rechargeable Nickel Cadmium (NiCad) battery, and an external power supply/battery charger.

The computer was originally supplied with a proprietary GRiD Operating System (OS). GRiD OS was developed prior to the more popular Microsoft Disk Operating System (MS DOS) used today in virtually all personal computers.

All of the original application software provided to the sales force was written for GRiD OS. This included:

- Electronic Mail
- Trivial Pursuit
- Territory Management
- GRiD Write
- Slide Library
- Contract Analysis

Soon after the initial introduction of the computers to the sales force, GRiD recognized the many technical limitations of continuing GRiD OS in favor of MS DOS. To address this situation, GRiD offered an MS DOS upgrade to all purchased computers. Thereafter, all future software applications were developed in the MS DOS environment.

These applications included:

- Dr. Block
- Cost Comparison
- OR Scramble
- Gas Uptake Simulation (GUS)
- Anaquest Uptake Simulation
- Clinical Simulations in Anesthesia

Although it was part of the original planning, territory management as a software product and as a sales management operating process was never implemented. The initial territory management software that was included with the original purchase of hardware and software from GRiD was not deemed suitable for the needs of the Anaquest Sales Representative. No other appropriately designed territory management software existed at that time.

Tremendous efforts were expended towards making the Professional Services Project a success. Even without territory management, several of the other software applications proved successful and were accepted by the hospital community. The Anaquest Sales Representative's laptop computer became a vital part of the selling kit.

Each sales representative was provided with a laptop microcomputer and its associated software. Extensive training was provided on all aspects of the program. A complete series of seven training video tapes covering all aspects of computer operations were produced and distributed to help promote a successful campaign and provide a formal training tool.

Several of the software programs provided immediate success in helping to properly position Anaquest's products. The Cost Comparison program proved to many skeptical hospital personnel that Anaquest's new isoflurane, an inhalation anesthetic agent, was actually less expensive to use than the other anesthetic products they were using at the time. The GUS program proved extremely successful in the hospital teaching environment. Through graphical case simulations students and residents can understand the total application of various anesthetic drugs. The Slide Library helped with presentations of products and ideas at conventions, luncheons, and group presentations. Additionally, electronic mail proved to be an efficient way for sales representatives to keep in

contact with the home office.

Project History

The new computers became an integral part of many sales presentations. The Anaquest Sales Representative was able to provide a valuable service to his or her customer well beyond the means of the "non-computerized" sales person. Impressive computer simulations, such as analytical drug usage cost comparisons highly leveraged the Anaquest selling message over the competition. In addition, programs such as Clinical Simulations and Trivial Quest were very popular with the Residents in helping them prepare for their Medical Board Evaluations.

Unfortunately, the age of the computers began to make a negative impact on the program. A greater than expected failure rate was experienced with the computer hardware. Recent reports revealed a mean failure rate in excess of 69%. It became increasingly more perilous to rely on the computer in critical selling situations. Software programs began to stagnate in the sense that upgrades were not forthcoming as had been originally proposed. This resulted in fewer new audiences for the Sales Representatives to show their materials. Increasing traffic on the electronic mail server and longer telephone connect time caused the users unrealistic delays in communications. Increasingly, the Sales Representatives began to rely more on voice communications to the home office instead of electronic mail. This shift became more evident when a company-wide

voice mail system was installed. The electronic mail traffic through the network server dropped significantly.

The lack of territory management software became a definite liability for the sales management team. Manual call reporting was not providing the information that was becoming critical for current and future planning. The reporting formats were not the same throughout the company as each Regional Manager promoted a unique format. Timely collection and compilation of the call reports was exceptionally difficult due to the fact that the sales force was spread across the entire North American continent. As the major product, isoflurane, continued to draw closer to its patent expiration date in 1993, the need for investigating the move into generic drugs became more evident. Marketing projections needed to be more precise. Depth of penetration, manpower requirements, advertising and promotional budgets all needed to be recorded, projected and analyzed. The prevailing thinking was that the only accurate way of gathering this information was through an automated territory management system.

Financial Justification

"It's a little bit of a funny justification for capital (spending)," said Paul Thomas, Director of Product Planning (at Anaquest). "But we thought that we could generate incremental revenue above and beyond what we would have if we had not had the machines. Management agreed the numbers were soft, but they bought the concept. Corporate

headquarters was saying, 'Hey, this is a novel idea. Let's see what they can do with it'" (Call, 1986).

The project was planned with a five year life and therefore depreciated accordingly. An investment appropriation of \$1,015,000 was approved based upon the projections shown the table 1.

Table 1
Financial Analysis

<u>Measurements</u>	<u>Amount</u>
New Capital Funds:	\$ 796,000
Revenue Funds:	\$ 219,000
Economic Life:	5 yrs
Book Depreciation Rate:	3 yrs ACRS
Cash Recovery Period:	21 mos
Discounted Cash Flow	
Rate of Return:	51.4%
Return on Taxable Income	
Based on Average	
Project Life	94.6%

Return on Investment

Although there has been no formal financial evaluation done on the project, it has been generally accepted within Anaquest that the investment has contributed to the increase in sales since 1986. Sales revenues increased an average of 23% annually since 1986.

Market share increased from a approximately 15% (isoflurane was just patented in 1981) to nearly 80% total U.S. market by 1990. Although enflurane was predicted to drop to a 0% market share by 1988, it has continued to hold a strong 10% share into 1990.

How much of this growth can be directly attributed to the use of laptop computers is purely speculative. For the first two to three years, it was a new and vital sales tool. By 1988, the use of the computer in selling situations was beginning to decline. As new sales reps were hired, formal training on the computer was not provided. The existing reps were experiencing embarrassing failures in demonstration situations in front of their customers. Even when considering these factors, sales did continue to increase without a noticeable effect from the decline in use of the computer.

Sales Management evaluates the investment on a soft-dollar return based upon the sales representatives ability to provide additional benefits to the customer. Management felt that the computer was highly successful as:

1. A dynamic and highly visible sales tool
2. A vehicle to provide a unique service to the customer
3. An automated communication vehicle

Anaquest's use of computers has been recognized in the industry as very unique and beneficial. Anaquest's booth is highly visible and sought-out at trade shows as

one of the few exhibitors adding value to the show. Customers and prospects alike comment on their ability to use the computers at the booths to access journal and speaker databases, simulate anesthesia cases to test their skills and knowledge, or compare cost scenarios for test cases.

Sales representatives hired by Anaquest from competitors comment on their excitement on their having access to a computer. They had experienced situations where doctors would ask them to demonstrate their product or compare their prices on a computer the way that the Anaquest sales rep did. There was a certain amount of credibility the Anaquest sales reps carried with them in the form of computerized demonstrations and simulations.

SECTION 2

1991 SALES AUTOMATION PROJECT

Development

The need to take action on a new project became more apparent. Very few sales representatives were using their computers in selling situations. An even smaller number were still using the computers, but only for limited functions such as writing simple letters. New software updates had not been provided for over two years and the sales representatives were beginning to question the company's commitment to a computerized sales force.

Although there was a generally prevailing attitude that the laptop computer was and still could be an effective sales tool, research was needed to determine the extent of use and what limitations existed with the current offerings before embarking on a possible upgrade.

Several national studies have demonstrated the effectiveness of laptop computers in the personal selling environment. "Corporations that use portable technologies earlier than their competitors will succeed in capturing market share and increasing their profitability and sales" (Jurik, 1990).

"By automating the sales and marketing functions, companies have increased sales anywhere from 10% to more than 30%" (Moriarty, & Swartz, 1989).

"Now, customers are beyond the conceptual state. They have outside sales forces calling on major accounts in

a repeating business, and they need to track information about those accounts" (Winkler, 1987).

Surveys

To effectively poll the sales force for input regarding laptop computers, printers, electronic mail and selling applications prior to launching a new Sales Force Automation Project, two major surveys -- one in 1988 and another in 1990 -- were administered to all Sales Representatives in the U.S. and Canada. Several less formal surveys were done with selected task force groups throughout this same period primarily for reviewing commercially available software programs being considered for a particular sales project.

The 1988 survey was designed to:

- Assess the level and type of usage by the Sales Representatives for each of the computer selling application programs
- Determine sales representatives' opinions on the level of effectiveness of each computer program application as a selling and educational tool
- Solicit suggestions for changes to the function and characteristics of the individual computer programs.

Approximately 93% of the surveys sent to the sales force were returned. The results provided the usage statistics shown in Table 2.

Table 2
Software Program Usage

<u>Program</u>	<u>% Using Regularly</u>	<u>Ranking as a Useful Tool</u>
Cost Comparison	100%	94%
Dr. Block	100%	82%
GUS	86%	29%
Slide Library	86%	33%
Mail Merge	37%	15%

The 1990 survey was designed to:

- Gain a better understanding of sales representatives' computer and territory management needs.
- Gather information to be incorporated into decisions on new computer hardware and territory management systems.

The survey keyed quite extensively on the major factors believed to be significant in evaluating and selecting new computer hardware and software applications. Approximately 80% of the surveys sent to the sales force were returned. The factors are shown in Table 3.

Table 3
Software Program Ranking

<u>Selection Factor</u>	<u>Average Rank</u>	<u>% Ranking as Very Important</u>
Speed	1.76	88%
Reliability	2.00	71%
Screen Quality	2.88	40%
Durability	3.66	32%
Computer Weight	3.96	22%
Battery Life	4.24	16%

The Project Team

Project teams are used extensively at Anaquest to evaluate an identified need, determine a solution, and then implement that solution. The original project's team was composed of six individuals--three from Information Technology, two from Sales and one from Marketing. Several other individuals from these and other departments were included during various phases of the project. Interns were hired from the University of Wisconsin to assist in programming and computer set up.

Anaquest management requires that any "computer" project must be headed up by a member of the user group. Initially for the new Sales Force Automation Project, a member of the sales management staff was designated project

leader. About four months into the project, during the final evaluation stages, management of the project was turned over to the Special Projects Manager for Anaquest. The individual assigned to manage the project was unable to devote the time necessary to properly lead the project through its most critical stages.

The project team had evolved over time as well. Several task and pilot teams had been identified for various segments of the project. The core project team was made up of eight individuals. In addition to the author of this paper participating as Project Manager, three members were selected from the Information Technology department, two were from Marketing, and three from Sales. These individuals, under the new project manager, were charged with the selection, development, and implementation of the final solution.

SECTION 3

NEW PROJECT DEFINITION

Project Objective

The Professional Services Project was designed to address the cost effectiveness of Anaquest's inhalation agents, provide key information to the end user, assist in the sales analysis, and reinforce Anaquest's image as a resource/service organization. Because of the number of variables contributing to Anaquest's success, it was difficult to measure what impact the Professional Services Project had actually contributed to Anaquest's market share. It was generally felt that the program met its objective and contributed to the healthy growth that Anaquest has experienced.

During the five years that the program was in place, the environment, both internal and external to Anaquest, changed considerably. Anaquest's future plans included generic competition for its inhalant anesthetics (after patent expirations) and a significantly broader product portfolio which would include generic as well as proprietary products. These changes would influence the approach that the Sales and Marketing departments must take to effectively market and sell Anaquest products. Real-time information regarding sales performance, bid activity and contract agreements would become particularly important. The ability to analyze sales performance data in a variety of ways would be becoming more critical as

competition intensified and the number of Anaquest products was planned to increase. Sales tools which demonstrate not only the benefits of the products but the way in which Anaquest differentiates itself from its competitors would be essential.

The environment in the world of laptop computers had changed as well. When the Professional Services Project was launched, the technology of laptop computers was limited to relatively slow processors with no internal hard disks. Laptop computers have improved with very fast processors (up to 20 MHz vs. 2MHz) and internal hard disks in excess of 100 MB of storage. Application software improved dramatically as well. The use of windows and graphics became widespread. The technology continued to grow rapidly with expectation of many other features on the technology horizon.

A leading pharmaceutical magazine summarized the benefits of sales automation as follows:

For the most part, the benefits of value-added applications are less immediate and less measurable. Yet, once in place, they can bring about more far-reaching improvements company-wide. From an almost endless list of possibilities come these examples:

- Computerized product presentations and interactive economic models to supplement the personal sale
- Structured feedback mechanisms for quick response to customer inquiries about such matters as product indications and therapeutic advantages vis-a-vis competing products
- More responsive management of bids, contracts, and proposals
- More timely communication of current sales and marketing data to other departments such as

medical and regulatory affairs or research and development

- Specialized, centralized data bases on a company's competitors, customers, and products
- Accurate Histories of performance--by account, sales representative, or territory
- Computer-based sales training and instant distribution of training updates
- Indexing and abstracting of literature for scientific and technical support. (Benison, 1988)

Similar in concept to many of these issues, the scope of the Anaquest sales force Automation Project as outlined in the project's notebook is described below:

1. Replace GRiDCase laptop computers with new laptop computers with the latest memory and disk technology.
 - The faster units will reduce the amount of set-up time required with a customer to demonstrate the benefits of Anaquest's products and services.
 - The hard disks will make the application programs more readily accessible and reduce the time required to move from one application to another.
2. Upgrade current applications to run under MS-DOS. Incorporate modifications recommended by the sales force to improve the usability of the applications.
3. Develop new applications to demonstrate Anaquest's differentiation for generic products as they are added to Anaquest's portfolio.
4. Implement a Territory Management system which is customized to meet the specific needs of hospital sales territory management.
5. Implement an improved Electronic Mail (E-Mail) application.

6. Install a software shell (or windows program) for managing applications.
7. Implement a full function word processing system to improve the quality and quantity of written communications from the regional offices and sales reps to their customers.

Project Direction Alternatives

To ensure a properly evaluated project proposal was presented, four alternative options were identified:

Option #1 - Purchase new computer hardware, convert and upgrade existing selling applications, and implement a complete territory management software system.

Advantages: Gathering territory and competitive information is vital to successful growth in the expanding of direct competition into generic product markets. A territory management system can provide Sales Management with the wide range of information identified as critical for accurate sales and marketing projections.

Disadvantages: Implementing a territory management system will consume considerable worker resources for up to eighteen months while the basic system is designed, developed, tested, and implemented.

A partnership with an outside software and services vendor must be established whereby all computer data are gathered, compiled, and distributed. Several software vendors offer this service, providing as a computer service bureau, as part of their "turn-key" solution. This service

arrangement would be long-term and potentially very expensive.

Option #2 - Purchase new computer hardware, convert and upgrade all existing selling applications, implement a new electronic mail system, provide a customer information management program (database and mail merge). This system would provide for tracking customer and prospects plus word processing and mass mailing capabilities. This solution was down-sized considerably from a complete territory management system.

Advantages: The Anaquest Sales Representative was recognized as a service provider to the customer. The use of laptop computers has been an effective tool when used to help convince prospective users that Anaquest's anesthesia products are superior in function and price performance.

By providing new computer equipment with upgraded sales applications, the sales force can potentially reach new and existing audiences with more definitive product simulations and customer services. Implementing the project without a territory management system would allow for a much earlier roll-out, considerably less training, and eliminate the need to establish a direct partnership with an outside provider of data services.

A major objective of the project was to replace the old computer hardware. Much of the sales force could have been trained to become technically functional on the computers in a relatively short time.

Disadvantages: Considerable new investments would be necessary to re-equip the sales force with computers and software.

Making the investment without the inclusion of a territory management system conflicts with some of the basic premises for the project.

Option #3 - Discontinue all use of laptop computers by the sales force.

Advantages: Considerable new investments would be necessary to re-equip the sales force with computers and software. Through discontinuance these investments could be directed into other, possibly more attractive alternatives.

It was difficult to recognize any tangible investment paybacks from the use of computers by the sales force thus far. It was reasonable to assume that an evaluation of any new similar investments would become equally difficult to establish. Therefore, continuing to invest in computerizing the sales force, as a project under consideration along with several other proposals, might not be proven as financially justifiable.

Disadvantages: The Anaquest Sales Representative is recognized as a service provider to the customer. The use of laptop computers originally was an effective tool when used to convince prospective users Anaquest's anesthetic products are superior in function and price performance. Removing the computer from the sales kit could have a

negative effect in the over-all presentation of products.

Option #4 - Do nothing to change the current use of the laptop computers.

Advantages: Little in the way of additional training for current Sales Representatives would be necessary. Also, there would be no immediate need for additional expenditures.

Disadvantages: Very high failure rates would continue prompting the need for on-going maintenance replacements and repairs. Annual maintenance contracts were costing in excess of \$35,000 per year for the 105 computers. This amount was increasing on the average of 7% per year. The cost for providing repair replacements to the field was averaging over \$150 per month in shipping costs alone.

Lack of confidence in the reliability would continue to cause a decline in use. Extraordinary amounts of technical support was required to diagnose problems and provide on-going assistance. The only person supporting personal computers (including the GRiDs) in the company was spending nearly 70% of his time on the GRiDs at the expense of other computer users. Additionally, the communications server was experiencing down-time on almost a daily basis.

As the sales force continued to expand, new laptop computers would be needed. The current in-use model had been discontinued by the manufacturer. Resulting in the requirement to purchase used equipment as available.

Little, if any, new programming would be undertaken to provide new selling and/or territory management software. This was primarily due to the lack of availability of programmers willing to write software for the slower speed processor and relatively out-of-date operating system.

SECTION 4

EVALUATION CRITERIA

It was deemed essential and critical that vendor solutions be evaluated with extreme care. To ensure proper and standardized measurement, the following evaluation criteria, derived primarily from the 1990 Survey, would be used for vendor selection.

Hardware

- Processor/Speed - A minimum of an 80386/20MHZ processor.
- Hard Disk Size - A minimum of 40 MegaBytes of hard disk storage.
- Battery Life - The longest possible battery life, although no minimum battery life has been established.
- Weight - The lowest possible weight, although no maximum weight has been established.
- Screen - The screen type is typically a personal preference. High visual clarity and wide viewing angle for group demonstrations is desired.
- Keyboard - simple and well designed layout, "common" use of function keys, comfortable typing position with positive tactile response.
- Service/Turnaround - Local service and fast (less than 5 days) turnaround. Service which was available only at the manufacturer's facility is acceptable as long as procedures are in place to

facilitate rapid turnaround.

- Cost - Assuming all other hardware criteria are met, the lowest cost product would be selected.

Territory Management System

A Territory Management System (TMS) can be totally encompassing in meeting the needs of a Field Sales organization. A complete system would provide several key functions such as a customer database, call reporting, electronic mail, word processing, and management reporting. In addition, a whole compliment of ancillary programs such as expense reporting, vehicle reports, literature requests, and others could add significant benefit to the sales rep.

In order to be a customized solution, the software would provide a customer database profiled to the type of customer the Anaquest sales representative calls on. Unlike many hospital pharmaceutical sales representatives, the Anaquest sales rep primarily calls on the hospital anesthesiologist. Many of the sales promotions and account servicing techniques are very unique to Anaquest.

Listed below are broad-term descriptions of the basic requirements Anaquest determined to be found in a Territory Management System solution.

- Customized - A territory management system, customized to meet the specific needs of managing a hospital territory.
- Flexible - The system must offer sufficient flexibility to allow modifications to territory

alignment, product portfolio, product presentations, marketing strategies, sales analysis techniques and any number of variables without undue difficulty.

- Full Function - The system must incorporate all of the elements necessary to effectively and efficiently market anesthesia and acute care pharmaceuticals to the marketplace. The following list details the required functions:
 - Territory Analysis - Database functions providing the ability to analyze product sales and customer buying patterns.
 - Call/Communications Planning - should provide these functions: Call/communications reporting, access to standard reports, customized information retrieval, summary reports for sales management, transfer of data to spreadsheet application, customer record updates by sales reps, electronic forms.
 - High Quality - The software must be thoroughly tested to avoid operating problems in the field.

Electronic Mail

- The electronic mail application should offer the following functions: Menu driven, automatic dial-up, mailing lists, mail directory with search options, save, respond, forward options, transfer

file option, print option.

Vendor Qualifications

- Vendor support should include on-site training programs, user support, system modifications as required, ongoing development resulting in new releases and customizing to facilitate easy implementation of new releases.
- Vendor Industry Expertise - The pharmaceutical industry has some very unique characteristics, particularly when dealing exclusively in the hospital environment. Vendor experience in the pharmaceutical industry is a key criteria.

A more complete description of the detailed specifications defined for an Anaquest Territory Management System including general vendor requirements are listed in Appendix A.

SECTION 5

SOFTWARE VENDOR PROPOSALS

From a list of 6 potential vendors of Sales Territory Management System software, two finalists were identified through a rigorous process of presentations, site visits, and proposals. Both finalist companies were determined to meet the vendor requirements stated earlier.

Each vendor submitted initial inquiry packages including overviews of their offerings and corporate background. The vendors were then invited in for informal surveys. Only three vendors responded to the invitation. These three vendors, in turn, were visited by members of the SFA Project Team. Finally, formal presentations were made to members of the Anaquest Executive Staff and SFA Project Team and proposals submitted.

Extensive reviews were done of each proposal. A brief description of each company follows:

Dendrite Americas

Dendrite Americas, based in Warren, New Jersey, is a manufacturer/seller of computer software based sales Territory Management System called Dendrite. Dendrite offers such basic applications as electronic mail, record keeping, and call reporting. It also provides advanced marketing tools, such as call targeting, ad hoc reporting, and the integration of information from outside services.

Dendrite runs on a combination of laptop or desktop personal computers and a host system. The host is a

mini-computer dedicated as a file server and repository for controlling the central information system. The host and personal computer exchange data when the user communicates with the host over a telephone line. This host system would also maintain file communications with Anaquest's mainframe computer.

As per the initial Dendrite Proposal to Anaquest dated February 1, 1990, Dendrite Americas would maintain the host file server system and provide support personnel for the maintenance and operation of the server. In addition, Dendrite Americas would also provide full technical, programming, design, and training support.

The key benefits outlined in the Dendrite proposal:

- Improved representative targeting through customer lists which should enhance call quality and increased frequency of contact.
- Reduction in learning time for new representatives through customer profiles which should reduce the time necessary for a representative to become productive.
- Reduction in administration time through electronic administration, electronic planning, and electronic call reporting which should provide increased call planning and increased selling time.
- Improved communications through electronic mail and data sharing which should provided faster

manager/rep response time and enhanced call quality.

- Better management decision making through ad hoc reporting and call analysis which should provide better activity tracking, quicker/better field redirection and enhanced calls.
- More intelligent use of field staff through data sharing and territory realignment assistance which should provide improved sales force redeployments, continuity of contacts with targets, and more/enhanced sales calls.

Dendrite Americas advertises the training as shown in Table 4.

Table 4
Proposed Training Schedule

<u>Training Module</u>	<u>Duration</u>
System Training For Trainers	3 Days
Train the Trainer Sessions	5 Days
Home Office Personnel Training	2 Days
Regional Manager Training	2 Days
Sales Representative Training	2 Days
Additional training available as needed.	

Dendrite identified services as one of their key advantages. Very intensive support was to be provided during the Pilot Stage and throughout the Initial Rollout.

Ongoing support is provided through a shared Project Group of Dendrite technicians. Dendrite Americas could also provide a full hardware replacement service in which all maintenance reserve stock personal computers are maintained and controlled by Dendrite Americas thereby alleviating Anaquest of this responsibility.

Prices for the Dendrite proposal are listed below under Territory Management System Cost Analysis on page 33.

Sales Technologies Incorporated

Sales Technologies, Inc. (ST), based in Atlanta, Georgia, provides a full Territory Management System very similar in concept to Dendrite Americas. ST has been offering a complete Territory Management System longer than any other vendor. There is substantial benefit to be derived from such experience, however, the software product has become out-dated compared to the newer capabilities offered in more recently developed software.

ST offers a personal computer/host file server system providing a complete customer database system. It includes these functions: Territory Management, Electronic Mail, Electronic Report Distribution Modules, INGRES Report Processor, E-Mail Gateway to Corporate Mail Systems, Sales Reference Module, Electronic Forms, Forms Dataset Interface, Sampling Module, and optionally, Forms Application Generator and Territory Management Applications Generator.

As stated in Sales Technologies' latest proposal as

of March 7, 1991, ST now has the capability to provide all of the functions as are outlined in the Dendrite proposal. These enhancements are available on ST's new 3.0 Territory Management System. These functions are based upon a fully relational database system which has been completely redesigned to offer the latest in technological improvements to the Sales Force Automation user.

The costs for the ST system are listed and compared below under Territory Management System Cost Analysis on page 33.

Reference Interviews

Each vendor provided reference lists of users of their proposed solutions. Most users were contacted by the SFA Project Team and interviewed as to their current implementation status, initial selection criteria, scope of project, successes and failures during development, and level of over-all satisfaction.

As had been expected when calling from a recommended list of references, the general consensus was that the vendors were providing the services and benefits as had been proposed. It did become apparent, however, that any deviations from the original plans were very costly and difficult to deliver in accordance to the original schedule.

Although each of the references were companies in the pharmaceutical industry, each was much larger in both sales volume and product diversity than Anaquest. For each, this

was their first attempt at automating their sales force. Likewise, the only use of the computers was for territory management. Considering the past successes of Anaquest with laptop computers, and the way in which the Anaquest Sales Representative was accustomed to using the computer, few similarities could be drawn from the referenced users.

Also, and of prime importance, it was noted that virtually every reference was not fully implemented with their sales force project. Many were in the initial development stages or only in pilot testing even though they had been well into their projects for anywhere up to 24 months.

Territory Management System Cost Analysis

The following costs summarize the proposed expenditure requirements as determined in the proposals from Sales Technologies, Inc. (ST) and Dendrite Americas accordingly. Personal computer hardware costs are not included. It can be noted from the tables that both solutions are relatively close in cost after two years of implementation even though various phases vary considerably. This was primarily due to the timing of when the main file server would be moved to the Anaquest facility.

Table 5
TMS Cost Analysis

<u>Project Phase</u>	<u>ST</u>	<u>Dendrite</u>
Pilot Test	\$261,139	\$267,840
Roll-Out - 1st Year	\$414,738	\$297,400
Roll-Out - 2nd Year	\$368,988	\$436,650
Each Additional Year	\$252,988	\$220,650
Total Project Launch (Pilot and 1st Year)	\$675,875	\$565,240
Total Project Launch Plus 2 Years	\$1,297,851	\$1,222,540

SECTION 6
ALTERNATIVE SOFTWARE SOLUTIONS

In addition to the offerings as presented by the two finalist vendors of Territory Management Software, it was determined that other alternatives - software that could be purchased, installed, and supported completely by Anaquest personnel - should also be evaluated. It was entirely possible that the cost of a complete TMS system could prove to be far too extravagant. An alternative plan would need to be available should the TMS solution be rejected. This solution would be an in-house (fully supported by Anaquest personnel) set of software applications as opposed to the TMS solution being supported by an outside vendor.

E-Mail - Electronic Mail has been and will continue to be a vital element of the communications systems between the headquarters and field. There are several quality stand-alone electronic mail software packages on the market today. Only one offering, cc:Mail was considered. cc:Mail has the largest market share among personal computer e-mail offerings. Plus, GRiD Systems Corporation (see Hardware Evaluations, page 45) is a re-seller for cc:Mail and could offer very attractive pricing opportunities. For a company purchasing the quantities proposed by Anaquest, discounts as much as 35 to 40% can be offered. In addition, GRiD Systems was currently using cc:Mail internally on a network configuration virtually identical in size (number of users) to the number Anaquest would install. It was felt that

this experience base could be an important resource for the project.

Customer Information System (CIS) - CIS, as an alternative to a territory management system, would require a substantially scaled down implementation process. The Anaquest Sales Representative is not accustomed to completing the daily call reports as required by a TMS system. However, there is a requirement for a means by which the rep can record customer contact names, addresses and profiles for mailings, follow-up activity planning, etc.

Twelve vendors of stand-alone customer information software packages were identified from magazine advertising and software reviews. Each vendor was contacted for a demonstration copy of their system.

As the demonstration software arrived, they were carefully reviewed by three members of the SFA Project Team to determine which most closely matched the structure of the "Black Book" used currently by the Anaquest sales force. The "Black Book" is a pocket-sized loose leaf binder which was designed several years previous for the purpose of recording customer contacts, demographic information, and notations of product usage, competitive activities, etc. Of the twelve packages three were selected for further evaluation.

A Task Force of sales reps was established to evaluate each of the three finalists. The software was

distributed in demonstration form to be run on the laptop computers currently in use. After two weeks of testing, a telephone conference call between the Task Force members and the Project Team was held to discuss the merits of each. From the group of finalist software programs, "Follow-Up" was selected as the most flexible, easy to use, and most closely resembling the layout and structure of the "Black Book" system. "Follow-Up" was written by XYCAD Group of Cleveland Ohio as a complete database and word processing system.

XYCAD Group was contacted for a final proposal and negotiations for design modifications. An agreement was reached whereby if selected, XYCAD Group would make several minor modifications at a cost not to exceed \$3,000.00. A final unit price of \$147.00 was negotiated on a quantity of 100 licenses.

Miscellaneous Supporting Software

Several ancillary software programs would be necessary in order to provide a complete set of application programs to support the sales rep in approximately the same manner as the Territory Management Systems. The software identified to serve the functions are listed below.

Menu interface - Software to provide an itemized listing or representation of the various applications on the computer to allow the user to easily select a program without having to key in computer software loading

commands. For this function Microsoft's WINDOWS 3.0 was selected.

Word Processor - Software to allow the user to type messages, keep lists, create letters, etc. For the most part, the sales rep did not need the sophistication of a secretarial word processor. The word processor included with Follow-Up was identified as having sufficient functionality.

File Server Operating and Communications Software - Software to manage the communications between the field computers and the headquarters host computer. These programs handle computer network control and the various databases of territory and customer related data and user profile information. Novell network software was selected.

Additional Application Software

Whether the solution chosen was a full TMS system or an in-house developed system, additional software was required to support the sales rep in the field. These programs were:

Slide Show Software - A presentation graphics program to display product related slide presentations. Harvard Graphics was selected.

LOTUS 1-2-3(c) - The Cost Comparison program was developed as a spreadsheet program and required this software to operate properly. All existing computers were already licensed for this program. A few additional copies and upgrades to the existing licenses were necessary.

Additional Computer Hardware

To fully implement an in-house solution, a communications file server is necessary. The TMS solutions contained a file server that would be located at the TMS vendor's offices. An in-house solution would require an in-house file server.

Communications File Server - A separate computer system that acts as a conduit and controller for electronic file transfers between the field computers and the headquarters host computer. A GRiD File Server was selected to compliment the GRiD computers selected for the sales force. This configuration is shown in Table 6.

Table 6

File Server Configuration

1 - GRiD 386IS CPU
Monitor
4MB RAM

2 - 138MB Hard Disk Drives

4 - GRiD 286MFP Personal Computers

4 - HAYES 2400BPS Modems

All Associated Network and
Operating System Software

Configuration Total Price: \$18,416

SECTION 7

TRAINING

"Training remains an integral part of employee education. A tailored training program that is well-planned and sensitive to the needs of the sales representatives enhances the value of the SFA system and further enhances the relationship between the employees and the company." (Staff, 1989)

The key to any successful sales automation program is quality education. Users who become frustrated will not utilize the system to its fullest potential. They will often down-play the possible benefits and frequently criticize the entire program. Users who are well trained become comfortable in using the systems, grow in their over-all comfort level, and generally experience higher work output levels as compared to under-trained individuals.

Training, as provided by the vendors of Territory Management Systems, is highly structured. In their proposals, each vendor detailed extensive training for all levels of users. The standard training program as identified by Dendrite (listed previously on page 30) provided 14 days of training of which only 2 were specifically for the sales rep.

Under a completely in-house solution, for this project the Customer Information System, all training becomes the responsibility of the SFA Project Team. For

planning and evaluation purposes a full training program for an in-house solution was developed as outlined below.

Train the Trainers

Full acceptance and success of a new program such as the Sales Force Automation Project can only be achieved if the "originators" of the program have complete confidence in themselves and their ability to sell the new ideas and concepts to the users. For this project the SFA Project Team was determined to be the best choice for trainers. It was estimated that six full days of project team training would be necessary for everyone to become knowledgeable of each software application.

Each team member would be assigned responsibility for at least one major program. This person would develop the training materials and agenda for their program. One team member would be additionally assigned the responsibility for assembly and duplication of the training manual.

Train the Managers

To validate the training materials and test the training process, the District Sales Managers and Regional Sales Directors would be trained separately at least three weeks prior to the full roll-out. Two full days of training would be done with the managers.

Initial Roll-Out

A full program overview orientation program would be offered at the North American Sales Meeting as this would be the only time that the entire sales force is gathered at

one time. As part of the sales meeting schedule, introductory training sessions would be offered on the new computer hardware and each of the software applications that would be complete and available at the time. Approximately twelve hours of classroom time was identified as appropriate for initial overviews and training.

Weekly Lessons

Beginning with the first week after the Sales Meeting, weekly lessons would be developed starting with basic operations and building up to the more complex programs. The main emphasis would be on ensuring continued use while developing familiarity and confidence through repetition and application of real-life functions. Each lesson would be structured to take between one half to two hours and would be distributed via electronic mail. At least ten lessons would be offered in this manner.

Regional Sales Meetings

At each quarterly Regional Sales Meeting, additional classroom sessions would be held providing more in-depth, hands-on instruction on the materials presented in the lessons. Between four and eight hours would be appropriate at each meeting.

New Hires

Planning must also include training for new Sales Reps as they are added to the sales force. With proper planning, the weekly lessons developed for the existing sales force can be adapted to new-hire training.

Additionally, the overview materials from the rollout could be used. For this training, three days of classroom instruction was considered appropriate.

SECTION 8

ALTERNATIVE SOFTWARE COST ANALYSIS

Table 7 summarizes the proposed expenditure requirements as were determined from the evaluations of individually selected software application programs and the proposed training schedules. Personal computer hardware costs are not included.

Table 7

In-House Solution Projected Costs

<u>Project Phase</u>	<u>Cost</u>
Development and Training	\$206,400
Roll-Out First Year	\$61,750
Each Additional Year (Estimated)	\$130,000
Total Project Launch (Development plus First Year)	\$268,150
Total Project Launch Plus 2 Years *	\$398,150

* Includes an estimate of at least \$130,000 in additional computers and software development costs for new hires for the second fiscal years.

SECTION 9

HARDWARE EVALUATIONS

Along with the critical importance of proper application software is the very necessary requirement to select the proper computer equipment. Even more varied than software offerings, the laptop computer market is extremely dynamic and increasingly prolific in vendor offerings.

New technology is being introduced continually. Faster processing semiconductor chips, more dense and smaller disk storage devices, more efficient and better display monitor screens are just a few of the components that continue to enjoy dramatic research and development investments. Modern manufacturing techniques allow for many of the manufacturers to incorporate the new components into their computers almost simultaneously across the industry.

While considering the available alternatives, the project team had to keep in mind the length of service expected from the equipment. It could be determined quite readily from advertised prices that the investment for the hardware alone would be well over a half million dollars. This in itself required the purchase to last a minimum of three to five years.

Initial Interviews

In order to allow for equal representation from a multitude of vendors, a Request for Proposal (RFP) was

developed and sent to ten dealers of laptop computers. The RFP was based upon the needs as had been identified in the 1990 Hardware Survey. In addition, technical specification requirements were established recognizing the current state-of-the-art laptop computer capabilities. Each dealer was encouraged to respond to the RFP with whatever computers they deemed most appropriate to meet the requirements as described in the RFP.

The only manufacturers contacted directly were GRiD Systems Corporation and IBM as both companies use direct selling sales personnel instead of dealers. IBM was contacted primarily as a courtesy to the local branch office because Anaquest is a direct customer for IBM for Anaquest's installed mini-computer mainframe. It was known that IBM did not have a competing laptop computer, but could have un-announced products they may have wished to propose like some of the other manufacturers did through their dealers.

The RFP stipulated that the responses must be returned within 30 days. Inquiries, surveys, and demonstrations were encouraged during the 30 day time period.

All of the dealers and GRiD responded according to the instructions within the RFP. IBM chose to no-bid as they did not foresee having a product available in the timeframes stipulated in the RFP. From the responses, six computers were identified as meeting the initial

specifications. These included two models from Compaq, two from GRiD, one from Toshiba, and one from Zenith. One other offering, from NEC, was presented prior to its product announcement to the general public, but was un-available for extended testing.

Hardware Pilot Test

A Pilot Test Group of Sales Representatives was selected to review each of the computers. A plan was developed whereby each Sales Representative would test a computer for one week, then send it on to another member of the test group. The computers were set up with software applications with which the Sales Representatives were familiar. Upon completion of each week of testing, an evaluation was filled out and sent back to the Project Team Manager. After testing the final computer, a summary evaluation was completed in which the Sales Representative ranked each computer against the rest.

From the Hardware Pilot, two computers were identified as finalists: The Compaq 386-20 and the GRiDCase 1550sx. Additional presentations and site visits were requested of the two final vendors. Compaq responded with a visit from the local District Sales Manager to answer questions and provide Compaq's future strategies. A site visit was made of the GRiD Systems Corporation manufacturing facilities and meetings were held with all of GRiD's top representatives.

Computer Hardware Selection

Following the completion of all initial meetings a final review of all materials including discussion notes and proposals was done by the SFA Project Team and various members of the Hardware Pilot Test Group plus Anaquest Sales Management personnel. The consensus of the majority was to select the GRiD Systems offering based primarily on reputation, service and support, and the ability to upgrade the computers in the future. In addition, the GRiDCase 1550sx offered features such as a better quality display monitor, a built-in Isopoint Bar (similar in function to a computer mouse), longer battery life, and a price several hundred dollars less than the Compaq models.

Computer Printer Selection

The computer Request for Proposal (RFP) included a definition of the needs for a personal computer printer. Each sales rep had been provide with a Hewlett Packard ThinkJet printer with their current GRiD laptop computer.

Anaquest had standardized on using Hewlett Packard laser printers for the printing needs within the business office. Hewlett Packard's new DeskJet 500 was being evaluated as an addition to the laser for Anaquest's office use and was deemed to be of the functional standard and quality necessary for the sales reps' use. The primary needs were for a sheet-feed, letter quality printer at a reasonable price. The RFP specified the Hewlett Packard DeskJet 500 or equivalent.

The results of the RFP provided several prices on the DeskJet 500 plus a few bids on printers (as equivalents) from other manufacturers. All of the other brands were several hundred dollars more expensive than the DeskJet 500 but did not offer significant additional features. From this information the DeskJet 500 was identified as the printer of choice.

Computer Pricing

Table 8 details the pricing as compiled for the selected computer equipment.

Table 8
In-House Solution Projected Costs

GRiDCASE 1550sx Laptop Computer	\$5,051
20MHz 80386sx Processor	
2MB RAM Memory	
60MB Hard Disk	
1.4MB Diskette	
VGA Monitor	
2400bps Modem	
Carry Case	
DOS 4.01	
Microsoft Windows 3.0	
Hewlett Packard DeskJet 500 Printer	\$ 494
Single Sheet/Envelope	
300 Dots Per Inch Graphics	
Multiple Type Fonts	
3 Sheets Per Minutes (printing speed)	
Two Ink Cartridges	
Total Hardware Cost per Rep	\$5,545
Total Hardware Cost for Sales Force (105 Users)	\$582,225

SECTION 10

CURRENT SOFTWARE PROGRAMS

The following descriptions detail the software programs that were in use currently and describe recommendations for improvement as identified by the SFA Project Team.

Dr. Block

The Dr. Block program was written for Anaquest by the University of Utah. Its purpose was to provide graphical simulation of patient responses during the anesthesia cycle. Two patient profiles could be presented simultaneously on the computer screen. The demonstrator could select the patients' weight, anesthesia agents and reactants. The simulation could be stopped, slowed down, speeded up, suspended, and drug dosages changed throughout the demonstration.

Dr. Block proved to be an exceptional selling aid for the promotion of Anaquest's anesthetics products. It was recommended that this program be retained with several modifications that could aid in set-up and presentation.

The program was used:

- To answer questions on muscle relaxants
- To establish edrophonium chloride, another Anaquest product, as an effective and useful alternative to other reversal agents

Cost Comparison

This program was actually a complex, pre-defined

spreadsheet built in LOTUS 1-2-3. The worksheet allowed for profiling up to four anesthesia cases at one time. Virtually every commercially available anesthetic drug and component was listed and priced. The cases were computed by first entering in the age and weight of the patient then selecting the dosages for each drug to be used in the Preoperative, Induction, Maintenance, and Postoperative phases of an anesthesia procedure.

Once all values were entered, the costs for each phase and the total procedure are calculated. The program was used effectively for three purposes:

- To teach residents/CRNAs/pharmacists about drug costs.
- To show isoflurane as a cost effective agent.
- To support the hospital Anesthesia Department in justifying costs for selected anesthesia products.

Like the Dr. Block program, Cost Comparison was proven to be very useful in demonstrating the reasons for choosing Anaquest's products over the competition. This program was selected to be retained, but upgraded to the latest release of LOTUS 1-2-3. Newly available drugs should be added and updates to the current pricing should be done at the same time.

Gas Uptake Simulation (GUS)

The Anaquest version of GUS was a modified version of a commercially available software program under the same

name. The program was quite complex, yet highly demonstrable. Through simulated cases, the effects of various anesthesia agents could be shown as they react with various parts of the human body. The program was very interactive allowing the demonstrator to vary the dosages and timings of individual drugs, much the same way an Anesthesiologist would during a surgical procedure.

GUS was used primarily in teaching institutions with additional, although limited, applications with customers who have a strong interest in computers, and at conventions or special programs.

This program had a more limited audience due to the complexity of the demonstration. It was written by a commercial software company and was recommended to be retained although with modifications and the incorporation of a lesson builder as may be available from the original author.

OR Scramble

OR Scramble was a very popular teaching game. A random selection of emergency cases were presented to the game player. Each case was described with only the minimally essential information from which the player must select the proper diagnosis. The objective was to diagnose and treat as many cases as possible in game mode in five minutes (as opposed to an un-timed teaching mode). This program was proven to be very popular among Anesthesia Residents as the cases often profile cases they may encounter during their board examinations.

This program was written by Anaquest and selected to be retained with the addition of new cases. Upgrades to newer graphics and ease of operation changes were requested as well.

Trivial Pursuit

The Trivial Pursuit program was similar to OR Scramble in that it was played in a game format. The players must answer questions related to the topics and subjects within the realm of Anesthesiology. It was played most frequently by students and Residents.

Trivial Pursuit was one of the very first programs developed. It was written by Anaquest, but in a programming language unique to the early GRiD Laptop computer. It was not compatible with the MS-DOS operating system found on today's laptop computers. Although recommended to be retained, the program would need to be completely re-written into a compatible format.

Clinical Simulations in Anesthesia

Clinical Simulations offered anesthesiologists and resident doctors a series of interactive computer case presentations that realistically depict clinical situations requiring appropriate techniques and drugs. The program had been awarded Category I credit by the American Medical Association and had been formally adopted by many hospital residency programs.

This program had been used extensively by the field sales force. To continue with the program as part of the

new project, much of the technical information contained within the application would need to be updated. Several new drugs have entered the market since the program's release, plus many of the actual anesthesia practices have been improved, all of which must be re-written and medically approved.

Survey Suggestions for Improvements

Comments from the Field Sales Force Surveys included these requests for improvements. The Project Plan should attempt to incorporate as many of these changes as possible based upon the degree of modification work required and available funds approved with the project.

Dr. Block

- Improve the accuracy of the program -- make it more realistic
- Allow demonstrator to turn off the inhalant at the end of the program
- Make the graphs more consistent, magnify the screen to show changes (thus showing the potentiating effects of isoflurane).

Cost Comparison

- Adding other aspects of total hospital costs (IV costs, supply costs, etc., to be a more realistic representation of a total procedure.
- Add an option for using combination inhalant/narcotic technique

- Use the highest price generic cost as opposed to name brand costs.

GUS

- Make GUS more on the level of Dr. Block
- Provide more user training
- Install a "save case" option.

Mail Merge

- Provide more user training
- Provide customer information downloaded from the Madison host mini-computer
- Provide a series of "professionally written" letters
- Change to a faster, more powerful, program

Trivial Pursuit

- Upgrade difficulty of questions
- Provide more questions more geared to selling points on isoflurane
- Include more questions from National Boards

Survey Suggestions for New Programs

As with the enhancements to the existing programs listed above, the respondents to the Field Surveys also recommended these application programs as desirable selling tools. The Project Plan should incorporate these programs as feasible, but would not necessarily be part of the proposed Appropriation Request. Additional surveys would be necessary to determine the full impact and usability of these programs.

- Cardiac monitoring program
- Literature Search program
- Speaker search program
- Nitrous Oxide presentation
- Isoflurane/pediatric induction program
- Slide presentations on large scale clinical situations that affect product promotion activity
- Program that provides comparisons of inhalants and narcotics to demonstrate Anaquest advantages
- Expense reporting

\$40,000 was identified as an appropriate amount to budget to complete the modifications and new programing requirements for these selling applications.

SECTION 11

FINANCIAL ANALYSIS

Anaquest had determined that making a financial analysis of the savings attributed to automating the sales force was impractical. Some of the reasoning behind approving the initial project was similar to the attitude Chrysler has taken in automating their field people. "Paul Berrigan, Manager of Sales Management Information, says wryly that, on a short-term rate-of-return calculation, 'I think the computers are absolutely not cost-justifiable. You're talking about an initial purchase of 600 to 700 machines, and they were very expensive. Communications, programming support, training--it cost a fortune.' 'But long term', he explains, 'Chrysler had a vision of the way we wanted to change the culture of our field force: from clerical people who went around and picked up sales reports and orders, to business consultants. So we didn't try to justify the expense based on manpower reductions or savings on other costs'" (Brody, 1988).

The original Appropriation Request (AR) for the 1985 Professional Services Project contained extensive financial analysis for cash flows over the entire projected five year project life. The key to the analysis was a projected capture of increased market share from the use of isoflurane. An analytical review of the financial success of the project was never undertaken. A basic review of the AR today indicates that although the market share levels

had been attained, the actual sales volume and anticipated pricing levels for Anaquest products were severely underestimated.

Based partly on this information, along with the current knowledge of how dynamic the anesthesia sales market is today, the need for a detailed financial analysis had been precluded as part of the new Sales Force Automation Project. The costs as outlined in the budgeting process for a complete Territory Management System were very difficult to offset with projected "hard dollar" savings. The analysis would need to include "soft dollar" gains as could be attributed to increased management abilities and improved marketing knowledge.

The recommendation as outlined in the following pages was based partially upon actual dollar costs and partially on the ability to implement the solution.

The major justification for this project comes from Anaquest's Market Research department. The benefits derived from the use of laptop computers can only be measured in market share penetration and retention.

The following excerpts are taken from a memo from Karen Weed, Manager of Market Research at Anaquest dated June 15, 1990 titled JUSTIFICATION FOR SALES AUTOMATION PROJECT.

"While it is difficult to assess precisely what market share could be gained or retained by using laptop computers, it is believed safe to assume the

computer selling programs could protect 0.5 Anaquest share points per year from the nearest competition over FY91-FY92. With each share point worth \$2 Million, this project pays back in about a year's time.

"More specifically, Anaquest will be using computer selling applications over the upcoming years to:

"- demonstrate the benefits of Anaquest's products

"- defend against market share erosion from competitive products

"- launch new Anaquest proprietary products.

"The GRiD System has proven to be an effective tool for promoting Anaquest's products and defending against competitive products. It is anticipated that these new tools will be especially effective for new product launches, particularly in teaching institutions. Physicians in academia typically are willing to try new drugs and residents are likely to continue to use these new drugs in actual practice. In addition, directors of residency programs have identified computer programs as very important promotional tools. Computer programs are interactive, and thus contribute more to the learning process than a brochure or film."

SECTION 12

RECOMMENDATION

A major point in the evaluation of the proposed Sales Automation Project was the total dollar amount available to cover the capital and expense purchases. A complete Territory Management System, although potentially beneficial in the long run, could well have been beyond the financial and personnel resources of the prevailing operating environment.

The financial comparison of the TMS proposals to the in-house solution presented a sizeable difference in the costs. (\$1,297,851 or \$1,222,540 for TMS vs. \$398,150 for in-house. Neither figure includes the purchase price of the computer hardware.) The necessary growth in expenditures, the amount of money to be spent during the project, when compared to the total spent in the past few years (approximately \$30,000 per year for maintenance) to accommodate just the in-house solution was considerable. To justify a TMS solution costing three times this amount could be extremely difficult.

From the estimates provided by the TMS vendors and their references, Anaquest could expect to be ready to pilot the new program after approximately twelve months. If all went well at this stage, a full roll-out could be ready in eighteen to twenty-four months. For an in-house solution, a pilot would not be necessary as the hardware was already piloted, the software programs were familiar,

and immediate training would be provided for new software. Therefore, a full roll-out could be accomplished within six months.

Although several individuals from the TMS vendor would be directly involved and responsible for the project, there would also be the need for full-time involvement by at least two individuals from Anaquest's Information Technology department. Using the best-case scenario of eighteen months to full roll-out as provided from the vendors, this amount of personnel coverage by the Information Technology department (a full staff of two host programmers, one analyst, and one pc technician) would be a serious detriment to all other computer projects for the company.

Additionally, and more importantly, the time necessary to develop, test, pilot, train, and implement the entire program makes the TMS route (Option #1) unattractive in meeting the needs of the Anaquest Sales Representatives who need new computers and software programs as soon as possible.

Table 9 shows a time-line for comparing Options #1 & #2.

Table 9
Implementation Time Line

ACTION STEP	DOLLAR OUTLAY		MONTH STARTED		PAYBACK STARTED	
	#1	#2	#1	#2	#1	#2
Development	\$260	\$206	1	1	No	No
Pilot	0	0	12	n/a	No	No
Training	0	0	18	3	No	No
Roll-Out	\$415	\$62	24	6	No	Yes
Year 2	\$369	\$130	36	12	Yes	Yes

From this information, it is clearly evident that Option #2 has a much smaller investment, a faster roll-out, and an earlier payback.

Option #3--to discontinue all use of laptop computers by the sales force--was rejected primarily on image. It was felt within the organization that the Anaquest sales rep was unique in providing a service with the computer that no other pharmaceutical sales reps did. Also of serious consideration, to abandon the project and discontinue the use of computers was rejecting the idea of using a computer as a valuable sales tool and, in effect, proving the original project unsuccessful. This was politically difficult to do as several of the original project team members were now in executive positions within the company.

Option #4--to do nothing to change the current use of the laptop computers--was determined to be unacceptable for several reasons. First and foremost was the high failure rate of the computers which was causing the sales reps to reject the computers as selling tools. Secondly, the investments being made for annual maintenance--in excess of \$35,000 per year--was considered an improper use of funds. Third, due to the age of the computers--over five years--they were perceived to be "old" technology and potentially have a negative impact on customers.

Therefore, the recommendation for the Sales Force Automation Project was to adopt Option #2:

Purchase new computer hardware, convert and upgrade all existing selling applications, implement a new electronic mail system, and provide a customer information management program. This system was to provide for tracking customers and prospects plus include word processing and mass mailing capabilities.

SECTION 13

APPROPRIATION REQUEST

Anaquest uses formal appropriation requesting procedures for funding of any project that includes a purchase of a capital item. The appropriation request (AR) is a formal document with written objectives, scope, and detail of expenditures. When the AR is over \$500,000, it must be presented orally to the Anaquest Executive Staff and to the BOC Health Care Executive Vice President for discussion and review.

Once approved, the project must follow the proposal without significant deviation. Expenditures must stay within the appropriated amounts for both capital and expense items. Likewise, spending must not come too far under the projected amount or the project manager can lose credibility on requests for future appropriations.

Careful consideration must be given to all phases of the project. For the SFA Project the actual purchases of hardware and software, although a substantial portion of the total appropriation, were only two parts of the project. Consideration must also be given to education and training, travel, promotion, training and promotional facilities, shipping, documentation, and programming services. Most of these items could only be projected as estimates.

Portions of the written Appropriation Request presented to the Executive Staff is included as Appendix B.

SECTION 14

CONCLUSION

With a project of the size of this project, the total benefits derived from enhancing the effectiveness of the territory sales representative must be considered. Many of the features outlined do not directly correspond to a related tangible benefit. Many organizations have tried to implement Sales Force Automation in a variety of ways. Anaquest was notably one of the first companies to provide the entire sales force with laptop computers--although for a different reason than most other companies.

Anaquest chose to use the computer as a selling tool for use directly in front of the customer. With the new SFA Project, Anaquest wishes to build upon the earlier successes of the Professional Services System Project plus introduce new computer capabilities to the sales rep. With a more complete sales aid, it can be expected that the rep could increase sales and market penetration which should ultimately result in increased market share.

The effectiveness of the investment can only be measured over time. The learning curve will cover several months. The curve is not expected to begin to level out until the second year. Many new programs would be introduced throughout the project's life. With each, the sales rep should become more efficient and, coincidentally, a more valuable resource to the Anaquest customer.

The full Territory Management System is only

effective as a data gathering device. Call reporting drives the system by providing a vast amount of customer and competitive information to the company headquarters. Anaquest continues to view the need to add value to the sales representatives image in front of the customer as the most important criteria for providing the computers. Through the solution as recommended in this paper, the computer continues to enhance the image of the rep and increases his selling effectiveness in the increasingly competitive marketing environment.

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APPENDIX A

Territory Management SystemEvlauation Criteria

Based upon discussions and interviews with a variety of companies, extensive readings in the area of Sales Force Automation, plus the surveys of the Anaquest sales force, the following list of criteria was deemed appropriate in meeting the total needs of this project.

1. General Vendor Requirements

- Industry Experience - The Territory Management System (TMS) software vendor should have a well established presence within the pharmaceutical manufacturing industry. Specifically, the vendor must have verifiable experience with the development of hospital based systems. Customer reference lists would be used to verify this requirement.
- Financial Strength - An exhibited record of strong earnings and growth is desired. This should be verified by obtaining a Dun & Bradstreet report of financial statements.
- Commitment to Schedules - The vendor must demonstrate a commitment to strictly adhere to agreed upon project due dates.

2. General Software Requirements

- Flexibility - The system must offer sufficient flexibility to allow modifications for territory

realignment, product portfolio, product presentation, marketing strategies, sales analysis techniques, and any number of variables without undue difficulty.

- Ease of Use - The system must be easy to use for both the non-technical and technical users. Simplicity of operation, along with smooth, logical screen design and flow are of key importance. A minimum amount of required data entry is a key sales representative's request.
- PC Software Compatibility - The TMS software should be MS-DOS/IBM compatible and provide for migration to other environments in the future, if necessary. The ability to run on a wide variety of screen types, modems, keyboards, printers, and other compatible hardware is essential.

3. Functional Specifications

- Hospital/Customer Profile
(Two Tiered/Hospital then MDA/CRNA within Hospital)
- Hospital
 - Account Name (e.g. Hospital, Veterinarian, Full Service Clinic)
 - Customer Number
 - Addresses
 - Telephone Numbers
 - Teaching Institute Designation

- Account Type (Veterinarian, Teaching Hospital, Clinic, etc.)
- Hospital Specialty (Pediatrics, Women)
- Target Account Designation
- Call Cycle Indicator
- Account Rating - By Product
 - # of Surgeries
 - # of Operating Rooms (ORs)
 - # of ORs with isoflurane vaporizers
 - # of Gas Analyzers
- Total Unit Sales by Product
 - Current month
 - Previous month
 - Same month last year
 - Rolling 12 month average
 - Equivalent units (where appropriate)
- Total Sales Dollars (average dollars) by product
 - Current month
 - Previous month
 - Same month last year
 - Rolling 12 month average
- Window to More Sales Detail
- Total Sales Dollars (average dollars) for all products
- Market Share
- Remaining Potential

- PMP Sales Goals
- Window to MDA/CRNA Profiles
- Targeted
 - Calls
 - Film showing
 - Vaporizer placements
 - Dinner meetings/seminars
 - Sales
 - Expense budgeted
- Buying Group Affiliations
- Current Contracts
 - Contract number
 - Contracted Buying Groups
 - Contract items
 - Contract dates
 - Contract price
 - Preferred Wholesaler
- Competitive Contract Information
 - Buying Group
 - Items
 - Dates
 - Prices
- MDA/CRNA Level
 - Name
 - Title
 - Addresses
 - Telephone Numbers

- Primary Hospital Name
- Other Affiliated Hospitals
- Specialty (Cardio, OB, Pediatrics, etc.)
- Rating (Teacher/Resident/Staff)
- Technique (Preference)
- Comments
- MDA/CRNA Information by Account
 - Chief of Anesthesiology
 - Pharmacists
 - Purchasing Agents
 - Speakers Coordinator
- Ad Hoc (List/Sort/Edit/Reporting)
 - Ability to do analysis based on multiple parameters
- Call Planning
 - Appointment planning focusing on targeted customers
- Call Reporting
 - One Year History
 - Contact data
 - Products promoted
 - Vaporizers placed
 - Film showings
 - Dinner meetings/seminars
 - Samples left
 - Follow up requirements
- Management Reports

- Territory/Regional/National Level
 - Sales
 - Market share
 - Sales force product and customer time allocation
 - Comparison of planned versus actual calls, film showings, vaporizer placements, dinner meetings/seminars, sales and expenses
 - Territory Profit & Loss
- Standard Reports
 - Ability to download current reports i.e. sales, commissions, etc.
- Sales Training
 - Self Training Modules
 - References
 - Product, Software & Laptop
 - Selling
 - Safety
- Administrative Forms
 - Expense Reports
 - Vaporizer Agreements
 - Literature Requests
 - Speaker/Seminar Request
 - Pricing Approval
 - Electronic Signature Approval
 - Product Compliant

- Vacation Request
- Leased Vehicle Reports
- Car Condition Report
- Mileage Summary Report
- New Car Order Form
- Performance Appraisals
- Sample Accountability

(In Compliance With Drug Diversion Bill)

4. Bulletin Board

A common area for miscellaneous information that can be shared by all. System users should be able to upload to and download from this common database. Keyword search of subjects would be desirable.

5. Electronic Mail

The following features are required:

- Sign-on Messages, Priority Messages
- Menu Driven
- Automatic Dial-up For Regular Off-hour Transmissions

APPENDIX B

Sales Force Automation ProjectAppropriation Request

All expenditure requests for capital items require a formal Appropriation Request to be written and presented to the Executive Staff. Outlined below are excerpts from the request developed for the SFA Project.

Project Objectives

1. To heighten competitive edge
 - Build upon success of current Professional Services Project
 - Further enhance resource/service image
 - Provide new software to help increase sales activity
2. To provide a more reliable computer with significantly improved functionality
 - Mean-time-to-failure rates are much lower in new computers
 - Newer technology provides substantial new capability
3. To provide a more functional information distribution vehicle for:
 - New and current product information
 - Sales and Marketing information
 - Customer mailings
 - Territory management
4. To augment training programs for:

- New Sales Reps
- Established Sales Reps
- New Products

Scope

1. Replace GRiDCase Laptop computers with latest technology. The configuration will be 386 micro-processor technology with hard disk storage.
2. Incorporate modifications recommended by Marketing and Sales to improve the applicability of the sales application programs.
3. Implement an improved Electronic Mail application.
4. Install a software shell (or windows program) for managing the applications and files.
5. Implement a full function word processing system to improve the quality and quantity of written communications from the regional offices and sales reps to their customers.
6. Provide significant additional training on new and existing application programs.
7. Continue the development of new selling application programs to further promote existing and to-be-released proprietary products.

Appropriation Request

<u>Capital Items</u>	<u>Amount</u>
Laptop Systems (Qty. 105)	\$546,415
File Server	20,000
Printers (Qty. 90)	49,050
Overhead Projectors (Qty. 15)	16,800
Cabling, Network Cards, Etc.	8,250
Contingency Fund	<u>40,000</u>
Total Capital	\$680,515

<u>Expense Items</u>	<u>Amount</u>
CIS Software	\$ 17,100
Slide Show Software	10,300
PC Support Software	6,900
Spreadsheet Software	12,210
E-Mail Software	24,600
File Server Software	5,500
Menu and File Software	13,680
Travel for Trainers	68,000
Training and Materials	68,100
Other Related Expenses	46,750
Contingency Fund	<u>15,000</u>
Total Expense	\$288,140
Total Project	\$968,655