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A Management Case Study: The Implementation of the Rapid Acquisition of Manufactured Parts (RAMP) Program

by

Marlene J. Peterson

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Thesis Advisor: Kenneth Euske

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This thesis is a management case study which describes the implementation of the Navy's Rapid Acquisition of Manufactured Parts (RAMP) program. The RAMP program was implemented in 1989 by the Naval Supply Systems Command (NAVSUP) to address the problems in procurement of spare parts for the Navy's weapon systems. RAMP technology proposed the use of flexible manufacturing systems and computer integrated manufacturing (CIM) capability to develop self-contained computerized manufacturing cells used to produce small machined parts and printed wire assemblies. The goal of RAMP was to develop and use computerized parts specifications to reduce lead time and cost for manufactured spare parts.

This management case study concentrates on the examination of how new technology is implemented into current established organizations. The main focus is on the relationships between the navy commands involved in the implementation: the Navy RAMP sites and the Inventory Control Points (Aviation Support Office and Ships Parts Control Center). The case includes the background and a description of the program, strategic planning, key players, identification of parts, establishment of technical data, cost and competition issues, and the steps taken to organize and implement RAMP technology. Teaching notes are included which identify the important issues of the case including strategic planning, customer needs, organizational policy, bid procedures and the communication process.

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A Management Case Study: The Implementation of the Rapid Acquisition of Manufactured Parts (RAMP) Program

by

Marlene J. Peterson
Lieutenant, United States Navy
B.A., University of California, San Diego, 1982

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Author: Marlene J. Peterson

Approved by: Kenneth Euske, Thesis Advisor

Sterling Sessions, Second Reader

for David Whipple, Chairman
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ABSTRACT

This thesis is a management case study which describes the implementation of the Navy's Rapid Acquisition of Manufactured Parts (RAMP) program. The RAMP program was implemented in 1989 by the Naval Supply Systems Command (NAVSUP) to address the problems in procurement of spare parts for the Navy's weapon systems. RAMP technology proposed the use of flexible manufacturing systems and computer integrated manufacturing (CIM) capability to develop self-contained computerized manufacturing cells used to produce small machined parts and printed wire assemblies. The goal of RAMP was to develop and use computerized parts specifications to reduce lead time and cost for manufactured spare parts.

This management case study concentrates on the examination of how new technology is implemented into current established organizations. The main focus is on the relationships between the navy commands involved in the implementation: the Navy RAMP sites and the Inventory Control Points (Aviation Support Office and Ships Parts Control Center). The case includes the background and a description of the program, strategic planning, key players, identification of parts, establishment of technical data, cost and competition issues, and the steps taken to organize and implement RAMP technology. Teaching notes are included which identify the important issues of the case including strategic planning, customer needs, organizational policy, bid procedures and the communication process.

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I. INTRODUCTION

This case study examines the implementation of the Rapid Acquisition of Manufactured Parts (RAMP) Program. The RAMP program was funded by the Naval Supply Systems Command (NAVSUP) as a research and development program in the early 1980's to address problems in the procurement of spare parts for Navy weapons systems. A substantial number of spare parts for older weapon systems were proving highly expensive to procure in small quantities and had extremely long lead times (sometimes over a year). The RAMP program was designed to use flexible manufacturing systems and computer integrated manufacturing to create a computer cell to manufacture these parts quickly and at a far lower cost.

The case covers the actual implementation process as the RAMP computer cells were established at various Navy commands. A previous case, The Navy's RAMP Program (Burton, 1990), described in detail the problems of procurement of these spare parts and the development of the RAMP technology. This case is a follow up case to examine implementation of the program and its current status. The issues covered include strategic planning, management control systems, and program development techniques.

The case is presented from the point of view of the RAMP Implementation Manager at NAVSUP, Barney Farley. It details

Farley's approach to the implementation from the early stages through the establishment of the RAMP cells at selected Navy commands. The case is structured chronologically, outlining the background, the issues and the steps taken to promote a cohesive implementation.

The background of the case includes how the program came about, who provided the funding and the contractors involved. It describes the RAMP program itself and how it works. Additionally, the formal implementation plan is outlined which covers the goals, scope and milestones of the program. Because RAMP involved several diverse and geographically dispersed commands, the organizations involved in the program are profiled in some detail. The funding commands, procurement commands and RAMP site commands and their relationship to each other are defined. The internal processes of these commands as they relate to the RAMP program are also described.

The main issues of the case became apparent to the implementers of the RAMP program in the early stages of testing the RAMP cell. Most of the issues deal with how the procurement commands and the RAMP sites must work together to implement the program. The initial difficulty was finding the spare parts which the RAMP program was designed to manufacture. This led to a crucial issue of the case: the lack of technical data. The developers of the RAMP program assumed adequate technical data was available on spare parts to put into a computerized parts specification data base. Unfortunately, complete technical data was not always available - particularly on the parts which the RAMP program was designed to manufacture. Additionally, the bid process between the procurement commands and the RAMP sites was not clearly established. The bid procedures and communication between the procurement commands and the RAMP sites was initially ineffective. Several internal organizational issues, such as competition, cost, lead time and funding procedures, also affected the implementation.

The case goes on to describe some of the steps taken by Farley to rectify these initial problems. One of these steps was the institution of several workload conferences which were conducted throughout 1990, 1991 and 1992. The conferences were attended by the commands involved with RAMP implementation. The issues discussed and outcomes of these conferences are described. Additionally, the planned implementation of an electronic data system by the original RAMP contractors is discussed and examined. The case concludes with the current status of the program and an implied question: what next?

In addition to the case, teaching notes are provided. While the case presents specific issues relating to RAMP, the teaching notes detail more generalized problem areas dealing with implementation of new technology.

The implementation of RAMP provides an illustration of the use of strategic planning and management control techniques. The large number of commands and staff involved make the implementation particularly difficult. The case demonstrates that the introduction of a new technology must involve not only the technology, but how to make it work.

II. CASE STUDY

Barney Farley put his phone down, on a cool day in November 1991. "The whole thing is falling apart," he thought. The program he had worked on for nearly five years, the program he was sure would solve many of the spare parts problems in the Navy, was simply not working.

He thought back to when he had first heard of RAMP technology — he was certain that this new technology was the wave of the future. And he was determined to see that the Navy was on the cutting edge of that technology. Now, after years of effort, time and money, the program was simply not living up to expectations.

The sites where RAMP had been implemented were not anywhere near capacity; the orders just were not coming in. And despite a successful workload conference in August, Farley just found out that 60 percent of the parts on contract by one customer had just been canceled due to defense budget cuts. "What next?," he wondered, "how can we make it work?"

A. BACKGROUND

The Rapid Acquisition of Manufactured Parts (RAMP) program was initiated in 1985 by the Naval Supply Systems Command (NAVSUP) to address problems in the procurement of spare parts for Navy weapons systems. Many of these parts were proving highly expensive to maintain in surply system inventories or obtain from contractors after the weapons systems were out of production.

The RAMP program was instigated under a research and development letter contract in 1985 by a quasi-governmental agency in South Carolina called the South Carolina Research Authority (SCRA). In late 1987, the staff at SCRA made their initial recommendation to establish RAMP prototype cells. At this point, supporters of the program at NAVSUP in conjunction with the staffs at the Navy Sea Systems Command (NAVSEA) and the Navy Air Systems Command (NAVAIR), assessed their manufacturing needs based on the dollars available to support this new technology.

In December 1987, the staff at NAVSUP awarded the current RAMP contract to the South Carolina Research Authority (SCRA). This contract provided over $60 million through FY 92 to set up RAMP sites. The staff at SCRA also established the American Manufacturing Research Consortium, composed of several leading-edge manufacturing/engineering companies, to aid in the development of prototype RAMP cells.

B. WHAT IS RAMP?

Barney Farley was appointed RAMP Program Implementation Manager in November 1986. At that point, the RAMP prototype had been researched by SCRA and funded by the Chief of Naval Operations (CNO) through NAVSUP. Farley's job was to develop an implementation plan and oversee the Navy site integration aspects of the new program.

Farley had been working in Navy commands most of his career. His initial experience had been in San Diego working at Naval Aviation Depot, North Island and the Naval Electronics Systems Command. He then moved to NAVSUP in 1978, provisioning ships. From 1980 - 1985, he worked at Ships Parts Control Center in Pennsylvania on repairables. Farley moved back to NAVSUP in 1985 and was involved extensively in programs dealing with reduction of turn-around time for spare part inventories.

In January 1985, he was appointed to the Streamlining the Acquisition Process Group established by the Assistant Secretary of the Navy. When Farley heard about the impending RAMP program, he believed that the new technology was just what the Navy needed to address many of the spare parts problems in the supply system.

At that time (and currently), many of the spare parts for weapons systems were out of production and difficult to obtain from contractors. This made weapons systems on board ships and aircraft essentially inoperable. The Navy had to compensate for this by increasing procurement quantities and establishing "workarounds" such as cannibalizing existing systems. Most of these parts were usually expensive to manufacture and required extremely long lead times. In most cases, only small quantities of the parts were needed. For example, prior to the implementation of RAMP, conventional lead times on Air Launch and Recovery Equipment (ALRE) averaged 400 days with costs ranging from $500 to $1400. The goal of RAMP technology was to reduce these lead times to approximately 60 days and reduce costs to a range of $300 to 700.

The RAMP program was designed to address many of these problems. The RAMP contractors at SCRA developed computer cell prototypes which could manufacture either printed wire assemblies (PWA) or small mechanical parts (SMP) through the use of flexible manufacturing and CIM technology. Each cell (either PWA or SMP) would be able to manufacture parts from technical data in far less time than traditional manufacturing methods. Specifications on a particular part were fed into the RAMP computer. The RAMP cell would then actually trigger the production of a part. An operator would be needed only to monitor the system and make minor adjustments if necessary.

Technical data were a key element in the RAMP process. In order for the RAMP cell to manufacture a part, complete technical information was necessary. The RAMP contractors at SCRA assumed that parts specifications would be available to convert the technical data of a part into a common machine-readable format called Product Data Exchange Specification (PDES). Sites would be set up that could convert traditional parts specifications into PDES format to be used by the RAMP cells.

Farley believed the RAMP program would ease many of the spare part problems by establishing the technology to produce these parts quickly and efficiently. The cost savings generated by the reduction of inventory and lead times should easily justify the initial investment. To maximize the cost benefits, however, Farley was looking for parts which fit certain criteria: 1) difficult to obtain, 2) expensive to manufacture, 3) long lead times required, and 4) small quantities. His job would be to not only get the program implemented, but be able to justify the program and quantify these cost savings.

C. STRATEGIC PLANNING

One of Farley's first goals, upon acceptance of the NAVSUP position as RAMP Implementation Manager, was to ensure The Rapid Acquisition of Manufactured Parts Strategic Plan, 1989-2010 was written and published in response to a congressional request in the FY 89 Defense Authorization Act. This plan was forwarded to Congress in March 1989 with the assistance of several Naval Reserve personnel. The plan provided technological issues, critical success factors, goals and milestones for the program. The overall goals of the program were specifically addressed (exhibit 1). In addition to Farley and his staff at NAVSUP, participants from CNO, NAVSEA, and NAVAIR[1] were involved in the development of the strategic plan.

The RAMP Implementation Plan was set up in conjunction with Congressional funding. These funds were allocated based on target dates and milestones for the RAMP program. The milestones included the following phases: (1) Test Readiness Review, (2) testing and acceptance, (3) production demonstration at SCRA, and (4) production review/acceptance and transfer of the actual RAMP cells to Navy sites (exhibit 2).

One of the long-term objectives spelled out in the RAMP Implementation Plan was the eventual technology transfer to civilian companies. Although the funding effort was initially *in-house at navy commands*, an original RAMP goal was to develop and distribute this new technology throughout the U.S. industrial base. To encourage this technology transfer, all research and development efforts would be documented in the public domain to provide access for civilian contractors.

The scope of the RAMP program included not only the program sponsor, NAVSUP, but both warfare communities, NAVSEA and NAVAIR. In addition, the prime contractor, SCRA, would work extensively with the sites selected for RAMP cell

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[1] CNO was responsible for all Navy functions and activities. NAVSEA was responsible for overseeing all aspects of the Navy's seagoing ships and weapons systems. NAVAIR was the counterpart for NAVSEA for the aviation community.

implementation. The strategic plan detailed an outline of the RAMP participants and their relationships (exhibit 3).

Despite the enormity of the implementation, Farley was certain the program was workable and pertinent to the spare part problems in the supply system. He believed that it was one of the best opportunities the Navy would have to provide a real solution to the spare parts problems in the supply system.

D. THE KEY PLAYERS

One of Farley's major challenges was to get all of the key players in this implementation working together. The major commands involved in implementing RAMP technology were the funding commands (NAVSUP, NAVSEA, NAVAIR), the Inventory Control Points (Aviation Support Office and Ships Parts Control Center) and the sites where the RAMP cells would be located.

The main goal of the staff at NAVSUP in supporting and implementing the RAMP program was to facilitate the ordering of certain spare parts. In order to do this, the implementers had to determine where these spare parts were being procured. The Navy's supply system is set up on three different levels with different funding sources. First, new weapons systems and their initial support parts are provided by NAVSEA and NAVAIR. When the weapons system is implemented, the support goes to the staffs at the Inventory Control Points (ICPs), who are responsible for providing unique spare parts for these weapons systems. Finally, routine parts are procured at the local level supply depots. The focus of the RAMP program was on the spare parts procured at the ICP level.

When SCRA was first awarded the contract, NAVSUP had been the main proponent of the RAMP program. However, once RAMP went from a research and development program to the establishment of actual manufacturing prototypes, most of the funding was generated from NAVSEA, NAVAIR and the Navy's Spare Parts Stock Fund at the two ICPs. Despite extensive funding by NAVSEA and NAVAIR, the Navy Comptroller decided that NAVSUP would retain implementation authority. The main reasoning behind this decision was to maintain balance and neutrality between the two warfare communities.

Initially, one set of key players, the staff at NAVSEA, was reluctant to put RAMP technology into their commands, especially the shipyards. In the early and mid-1980's, NAVSEA's staff believed the sole mission of these commands should be to support their local command and ship overhauls. They did not want the shipyards to be in the business of providing parts to the Supply system. As the program grew, however, the staff at NAVSEA became supporters of the obvious cost and technological benefits of the RAMP program – particularly as they related to NAVSEA commands.

The two ICPs, Aviation Support Office (ASO) and Ship Parts Control Center (SPCC), were the initial RAMP customers. Both commands were in the NAVSUP chain of command. However, the Commanding Officers of each ICP also had their fitness reports countersigned by the Commanding Officers at NAVAIR and NAVSEA, respectively. Each ICP was serving and supporting a specific warfare specialty and there was strong loyalty among the staff to the respective aviation and surface communities.

In addition to the major funding commands and the ICPs, the other key players were the RAMP sites themselves. The RAMP cells were to be located at various shipyards and aviation depots. Several of these commands had shown interest in RAMP technology. In some cases, the commands had already been looking for the flexible manufacturing and CIM technology incorporated in RAMP. In other cases, they had heard specifically about the RAMP program and requested to be a part of the implementation. All of the sites in which RAMP would be implemented came under either NAVSEA or NAVAIR. The RAMP sites would also be providing spare parts to support NAVSEA and NAVAIR weapons systems.

Initially, the Charleston Naval Shipyard, Naval Aviation Depot Cherry Point, and Naval Avionics Center Indianapolis were selected for RAMP cell site implementation. Two other sites, Naval Ordinance Station Louisville and Naval Weapons Support Center Crane, would implement the computer systems necessary to adapt technical data into a PDES/RAMP format.

E. IMPLEMENTATION

Typical of many military contracts, the actual implementation occurred later than scheduled. From late 1990 through 1991, the RAMP cells were in the testing and acceptance phases at the RAMP sites. It was during this period that the ICPs began to provide bid packages to the sites for various parts.

After the testing and acceptance phases, the transfer of technology from the contractor (SCRA) to the RAMP site constituted the official implementation. Although Charleston was initially scheduled to open the first RAMP cell, Cherry Point actually established the first site with RAMP capability in August 1991. This was followed by Charleston in April 1992 and Indianapolis in September 1992. The two sites working on PDES/RAMP formats implemented their RAMP computer programs in April 1991 (Louisville) and May 1992 (Crane). A time line for the implementation of the RAMP program is outlined in exhibit 4.

The original implementation had been scheduled so that the sites would establish the RAMP program over a three year period with approximately a year between the set-up at each site. However, delays in the contract resulted in implementation of RAMP at all sites within a 14 month period. This caused some difficulties among the commands which were key players in the RAMP program.

The major complaint about the implementation was that NAVSUP and SCRA tried to do too much, too soon. With all of the sites becoming active at nearly the same time, minor problems became magnified and the entire RAMP implementation suffered. Ron Johnson, one of the RAMP site implementation managers, strongly believed that a single prototype RAMP site should have been established first. Then, after most of the problems had been worked out, the other sites should have come on-line.

F. THE INVENTORY CONTROL POINTS

Throughout the testing and acceptance phases, Farley, as the RAMP Implementation Manager, quickly became aware of several problems. It was obvious that actually establishing the RAMP cells at the various sites was the least of the program's difficulties. In order for the RAMP cells to be effective, they had to have orders and these orders had to come from the ICPs – ASO and SPCC.

ASO was located in Philadelphia, Pennsylvania. The mission of the command was to provide spare part support to fleet aviation weapons systems. SPCC, located in Mechanicsburg, Pennsylvania, was the counterpart to ASO for the surface and submarine Navy. They provided spare parts and support for seagoing weapons systems.

Farley worked with both the staffs at ASO and SPCC to set up a specific point of contact for RAMP manufacturing - Tom

Brown at ASO and Bob Dowell at SPCC. Both of these individuals were to serve as a liaison for the RAMP program between the inventory managers, contract officers, NAVSUP and the actual RAMP sites.

Tom Brown and Bob Dowell had similar professional backgrounds; both had worked for their respective organizations for over 20 years. Both also took on the job of RAMP implementation manager in addition to other duties. Brown's background was in engineering. He had volunteered for the job as RAMP Program Manager in 1988, supplemental to his position as an Engineering Data Manager. Bob Dowell had worked as an inventory manager on a variety of specific weapons systems and the Buy Our Spares Smart (BOSS) program. He was appointed RAMP Project Manager in 1989. In addition to his responsibilities to the RAMP program, he was a Logistics Management Specialist.

Each command was set up with inventory control managers who monitor the amount of spare parts available in the supply system. When a part was needed, these managers determined priority (based on fleet need) and they had two options: a competitive bid or a referral to in-house (Navy) manufacturing. If the part was to be competitively bid, the inventory control manager referred the part to a contract officer, who initiated the competitive bid process. In most cases, a referral in-house indicated there would be a problem in trying to bid the part to civilian contractors. The usual problem was a lack of interest due to the small quantities to be manufactured or the reverse engineering that would be needed.

The RAMP program was an in-house option. Initially, Brown and Dowell went to the inventory managers to find parts which could be manufactured by the RAMP cells. When these parts were found, the orders were processed according to the command's in-house manufacturing bid procedures.

The inventory managers had a difficult time trying to use RAMP technology. All communication was being handled through the liaisons and the staff who were actually making the decisions on how the parts would be obtained were not dealing directly with the RAMP sites. Additionally, each of the ICPs had extensive policies for the award of contracts based on their own needs as well as Navy, DOD and Congressional mandates. All of these created a precise and usually rigid organizational process in which to proceed with the award of contracts. And the RAMP program and its technology did not fit into these standard procurement procedures.

The initial expectations for RAMP were high. Brown believed that RAMP technology had been sold to ASO and himself as a data product. Not only would RAMP streamline manufacturing, he had been told, but it would help alleviate the dearth of technical data faced by ASO inventory managers.

Brown was also dealing with some in-house prejudice to the RAMP cells located at NAVSEA sites. Because ASO was supporting the aviation community, many of his colleagues did not understand why they should feed contracts to the surface community. There was a strong feeling that any in-house contracts should go to the aviation supply depots.

Dowell had a different set of problems. When he first began working with RAMP, there were difficulties getting management and the inventory managers to accept the new technology. Most of them believed it was another big idea that would never actually be funded to implementation. To overcome this initial prejudice, Dowell publicized the use of RAMP technology throughout SPCC. As an on-going project, he published the cost benefit ratios and lead times of various RAMP-manufactured parts in in-house newsletters. Dowell took every opportunity to sell the program to skeptical staff members.

G. WHERE ARE THE PARTS?

The first major issue for the RAMP liaisons at the ICPs was finding spare parts that fit into the RAMP scenario. Farley was under pressure from NAVSUP to find a "sexy" part - a part or family of parts which would demonstrate the effectiveness of the RAMP technology. This part or parts was needed to show not only how well the RAMP cells worked, but how cost effective the program could be.

In looking for "sexy" parts, Farley discovered how difficult it was to find parts for the RAMP program at all.

There were many parts which could be made by the RAMP cell. But in most cases, these parts were identified after the contracts had been awarded. There was no data base of parts that would fit into the RAMP scenario. There was no easy way to identify parts which had unusually long lead times, were required in small quantities, and were expensive to manufacture. Finding parts was more of a challenge than expected.

Both Brown and Dowell agreed: finding parts was a real problem. It seemed the only way to find these parts was for them to solicit suggestions from their inventory managers - who were actually dealing with parts that needed to be manufactured. In some cases, they were able to find a family of parts that would fit RAMP criteria, like the Air Launch and Recovery Equipment (ALRE) at ASO. But both Brown and Dowell were continually scanning through various contracts trying to find additional parts to feed to the RAMP sites.

Farley believed that there must be an easier way to identify parts which were candidates for RAMP. In the spring of 1988, he awarded a small business contract to a company in Virginia to examine all parts at ASO and SPCC. The goal was to determine if there was standard nomenclature or data which could identify parts as candidates for the RAMP program and thus establish a data base for both the ICP liaisons and the inventory managers.

The results were disappointing. In the scan done of over 87,000 parts, only 0.6 percent could be determined to fit into the RAMP technology. This, of course, did not help. For the present, Farley and the RAMP sites had to rely on Brown and Dowell to find suitable parts for bid.

H. TECHNICAL DATA

Although finding parts was a major issue, both Brown and Dowell agreed that technical data was an even bigger issue. The RAMP cells had been set up to manufacture parts based on standardized parts specifications (PDES). And the technical data needed to create a PDES format was not always available.

Many of the spare parts which ASO and SPCC were responsible for procuring lacked complete parts specifications – particularly on older weapons systems. These parts were from weapons systems in which the original contracts did not provide full technical data – usually because it was too expensive to include in the base contract. In fact, Brown and Dowell estimated that 65 percent of the parts ASO and SPCC were procuring lacked complete technical data.

Most importantly, the parts which RAMP was targeting – hard to manufacture and expensive with excessively long lead times – were the parts which did not have adequate technical data. And these were the spare parts that were the real troublemakers for inventory control and contract officers. If the ICP was contracting a part with full technical information, cost and lead time was rarely a problem.

Although Brown and Dowell believed RAMP technology was valuable, it was not what they could immediately use. It was as if someone had come up with this great idea to help ASO and SPCC, but forgot to ask them what they needed. What ASO and SPCC needed was the capability to generate technical data and reverse engineering.

I. COST, COMPETITION AND FUNDING

Although the ICPs had similar missions and some structural similarities, they were distinctly different organizations. In implementing RAMP, many of these differences became apparent. Issues such as finding parts for RAMP, competition in contracting, the cost of contracts and funding procedures were handled in separate ways by each command.

The staff at the ICPs must work with formalized procedures to award contracts. All contracts were to be competitively bid with private industry with a few exceptions for in-house manufacturing. Brown particularly felt that the issue of competition had not been adequately addressed – at least within ASO. The staff at ASO was still under pressure to ensure that a set percentage (established each fiscal year by Congress) of their contracts were competitively bid (30 percent in FY 92). And that requirement meant competitive bidding with civilian contractors, not competitive bids among the RAMP sites.

Cost was another issue. RAMP bids were sometimes higher in costs than other bids due to the advanced technology and quick turn-around times. Despite substantially shorter lead times, contract officers had no way to measure the value of short lead times against the cost of the part. For example, one of the ALRE parts, a special cable assembly (Part No. 418794-1), had a commercial based lead time of 442 days. Using RAMP technology, the lead time would be reduced to 30 days. However, even though NAVSUP supported the concept that long lead times have a real dollar value, no one had come up with a method for the contract officers to factor this into the bid selection process.

Unlike ASO, SPCC had a different internal policy emphasis. Lead time was often a crucial factor, particularly in responding to CASREPs[2]. If they could get the part quickly, contract officers usually had no problem justifying paying the higher cost.

In many cases, it was an uphill battle to convince an inventory manager that a particular part should go in-house regardless of lead times and new technology. In particular, when there was a limited amount of money to spend for a fiscal

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[2] CASREPs were casualty reports sent by ships to identify weapons systems which were not fully operational. SPCC responded to those CASREPs in which parts were identified as needed to enable a weapons system to become operational.

year, most inventory managers wanted to go with the least expensive contract - regardless of lead time. At least that would allow them more funds to spend on other items in the short term.

Complicating the cost and lead-time issues, were the funding procedures for manufacturing contracts at each ICP. Because RAMP technology was an in-house option, funding procedures for the contracts were different from the procedures for competitive bids. Instead of the normal procurement process, once an inventory manager agreed to allow a part to be bid out to the RAMP sites, funding came out of a different source. And, follow-up on the contract had to be handled by the RAMP liaison or the inventory managers themselves.

ASO and SPCC handled their funding procedures differently. ASO often had long administrative lead times in getting funding. SPCC, however, had instituted a dedicated team concept in 1990 which streamlined their funding procedures. Once an acceptable bid was returned to SPCC from a RAMP site, Dowell was usually able to process the order quickly and with minimum fuss.

As these issues became apparent, Farley determined that one of the severest obstacles to RAMP was the lack of quantitative measures to determine the value of lead time. He discovered that several computer models had been or were being developed for determining the cost of lead time. He began extensive work with the Fleet Materials Support Office (FMSO) to find a workable computer model - one which contract officers could use when making bid decisions.

Farley also extended his efforts with the ICPs. On several occasions during 1991 and 1992, he went to both ASO and SPCC to give briefs to not only the senior leadership, but all inventory control and contract officers. He maintained direct ties with several inventory managers as well as on-going communication with Brown and Dowell.

Both Brown and Dowell believed that RAMP technology provided some real answers to the Navy's supply problems, but assimilating the program was more of challenge than they had ever dreamed.

J. WORKLOAD CONFERENCES

Farley also realized that the bid process itself might hinder implementation. The process was to be initiated by both ASO and SPCC. If they had a part which fit into the RAMP scenario - they would put together a bid package (Request for Quote) and send it to the RAMP sites. The various RAMP sites would make competitive (with each other) bids on the part. These bids would be sent back to the ICP and the ICP would then award the contract.

In 1990, prior to the RAMP cells being implemented at the Navy sites, Farley began a series of workload conferences to examine the bid process between the ICPs and the upcoming RAMP sites. These workload conferences were not a new idea - the ICPs and Navy commands which manufactured parts and provided repair services had previously used workload conferences to aid the bid process. But Farley wanted to establish what, if anything, would need to be changed with the RAMP manufacturing process. The RAMP program managers at each ICP and representatives from the various RAMP sites met throughout 1990 to discuss the procedures to be used to bid on parts and award contracts.

During these conferences it became clear that the bid process would have to be adapted to the new RAMP technology. The conference attendees not only discussed procedures, but actually went through the bid process with several parts to determine what problems existed. These bids were based on the current technology available at the future RAMP sites because the RAMP cells had not yet been implemented. During the bid process on these parts, it was determined that administrative lead times for parts to go through bid procedures both at the sites and the ICPs were excessively long (usually 150 - 200 days). This was caused by lengthy internal approval procedures as well as the time bids spent en route in the postal system. If the same bid process were used for parts manufactured by the RAMP cells, one of the main goals of RAMP – reduced lead time – would be negated.

The workload conferences held throughout 1990 had been composed of different commands at different sites which were at varying stages of RAMP implementation. In early 1991, however, Farley believed it was vital to get all of the key people at both the RAMP sites and the ICPs together to actually establish new procedures for the bid process. In May 1991, he set up a workload conference at the Naval Avionics Center in Indianapolis. He turned the entire conference over to the participants. "Tell me what you want to do," Farley told them.

The conference became a workshop. Both the sites and the ICPs began to work on problems. The outcome was a series of formalized procedures to establish a viable bid process. Additionally, they addressed communication problems. With both sides working together, the workshop participants hammered out a process they thought would work.

The conference participants also suggested to Farley that regular workload conferences should be held with all participants dealing face to face. They wanted to set up a conference where the ICPs would come with bid packages, the sites would evaluate and bid on them, and the bids would be awarded – all within the one-week conference. Farley agreed to try this new system.

Farley set up a follow-on conference for August 1991 in Pensacola, Florida. All sites and ICPs were to arrive with bid packages. During the conference participants followed the newly established policies and parts were bid out to one of the five RAMP sites. In general, most participants believed the conference was a success.

The staff at a few of the sites, notably Ron Johnson of the Naval Avionics Center, Indianapolis, still felt there were a number of obstacles to be worked out. His concerns centered around the inadequate technical data that was available, which he thought would slow lead times down considerably. Coupled with the fact that the ICPs were requiring firm fixed price bids, Johnson thought there would be difficulties with the contracts running over budget.

In general, however, most participants of the August conference believed this was the most productive step taken by the RAMP sites and ICPs since the beginning of the RAMP implementation. The RAMP site personnel went back to their commands with renewed dedication.

K. THE RAMP SITES

Farley realized the bid process was not the only problem at the RAMP sites. The staff at the sites wanted to balance their workload. They were also concerned with wasted effort spent on bid packages which they did not get. The RAMP program was only one of a variety of functions at the local commands – and it was necessary to ensure the program had adequate support.

Ron Johnson, the RAMP Project Officer at NAC Indianapolis, described one of his major difficulties as trying to find a way to manage his workload. Because there was not a steady workload of RAMP contracts, Johnson could not provide consistent lead times. Bid packages came into the command on an erratic basis, leading to bids with lead times ranging from 4 - 14 weeks depending on his normal workload, rather than the actual amount of manufacturing time needed to make a part.

Johnson wanted a regular schedule and was a proponent of long term contracts. It was a real problem for his staff to spend a lot of time on bid packages, especially those involving reverse engineering (anywhere from 4 - 12 weeks), only to get a small quantity one-time bid. Additionally, the cost of the reverse engineering could be exorbitant for a small number of parts.

Another difficulty for the local RAMP sites was interaction with the local commands. There were a variety of local pressures that the RAMP site had to deal with – and not just in terms of the technology being used for local projects. The RAMP sites had to rely on their local command for administrative staffing, funding for support functions, and engineering information. The RAMP program was only one section of the command's total responsibility. If the RAMP cell tried to establish its own engineering, administration and supply functions, many local "rice bowls" would be upset.

L. THE RAMP PROGRAM - WHAT NEXT?

In November 1991, another setback occurred. Farley was informed by Tom Brown at ASO that nearly 60 percent of the contracts issued at the August 1991 Pensacola workload conference had been canceled due to budget cuts. Farley knew it was time to go back to the drawing board again.

After Farley received the phone call regarding the budget cuts, he sat back in his chair to review the status of the RAMP program and his goals for the future. One of Farley's major goals in the next year was to establish a dedicated Electronic Data Interchange (EDI) system at all of the RAMP sites and the ICPs. Communication problems had plagued the RAMP implementation from the beginning and the contractors at SCRA had proposed the EDI system as a solution to the communications problems presented by the bid process.

During the spring of 1992, Tom Brown at ASO began working on another workload conference dealing specifically with 41 parts in ALRE. To prevent budget cuts from inhibiting the process, he wanted to reduce lead times for bids even further. Brown worked with another member of the NAVSUP RAMP implementation team, Alex Johnston. Johnston was a consultant from a Washington, DC consulting organization known as PRC, Inc. Johnston had been working with Farley on the RAMP implementation since September 1990. Brown and Johnston set up a different kind of conference in the summer of 1992. They called it ALRE 41. The basic idea was to establish a workload conference by electronic mail. All sites were connected by electronic mail to the ICP RAMP contacts and NAVSUP. Brown and Johnston wanted to use this technology to facilitate the bid process.

Brown and Johnston sent out procedures and time frames to all sites and in July 1992, the RAMP sites and ASO attempted their first electronic mail workload conference. All sites participated and the conference met with limited success. Administrative lead time for contracts was targeted at 30 days – the result was approximately 40 days. Although the 30 day goal was not met, the time frame had been dramatically reduced (from 150 days at the Pensacola conference) and Johnston and Brown proved that the workload conferences could be effectively conducted through an electronic mail system. The success of ALRE 41 indicated the EDI program being promoted by SCRA could ease some of the bid process problems.

In August 1992, a conference was held in Charleston to discuss the EDI implementation. While most sites were supportive, particularly after the success of ALRE 41, some reservations were expressed. Some sites already had electronic mail and EDI systems of some sort. They were concerned that this would be just one more system to master. Additionally, local commands were not always supportive of technology just for the RAMP unit – Commanding Officers at the local RAMP sites wanted integrated communications systems.

There were also frustrations expressed about some of the on-going problems in the bid process: for example, the lack of accurate technical data and long administrative lead times. EDI would not solve these problems - although they might make them more obvious. EDI, while a step in the right direction, was not the cure-all.

M. THE FUTURE OF RAMP

As Farley contemplated the results of the EDI conference and the events of the previous year, it became clear the goals and scope of the RAMP program were shifting. The technology was the same, but it would have to be adapted to new challenges.

Throughout 1992, the need for a change in direction had become more apparent. For example, from January to June 1992, SPCC had put together at least five bid packages per month specifically screened for RAMP and sent to the sites for quotes. Out of those 125 packages, the RAMP sites had returned only ten bids.

There were a variety of reasons for the low response rate, but most dealt with the technical data issue. Although SPCC had included what they believed were complete parts specifications, the sites found gaps in the technical data and were unable to make accurate bids.

Even the success of the ALRE 41 conference in July was limited. Although the lead time on parts that were actually bid had been reduced to 40 days (from an average of over 400 days), only 5 out of 41 parts presented by ASO had been bid on by the RAMP sites. Again, this was because of incomplete technical data and/or inaccurate or outdated parts specifications.

Farley now had to move the RAMP implementation into a new phase. He had to find a way to adapt the use of RAMP technology to the current needs of its customers. Since its initial implementation, RAMP had come a long way. But there was still a long way to go.

Exhibit 1

RAMP Strategic Plan*

STRATEGIC PLAN

This plan has been specifically tailored to fit into the framework of the Department of Defense (Production and Logistics) 2010 Strategic Planning Guide.

In developing the RAMP Strategic Implementation Plan, five basic questions are addressed:

- Why RAMP?
- What is RAMP?
- Who is and will be involved?
- Where should RAMP lead us?
- How do we get the system to that point?

The methodology used to answer these basic questions includes a series of interrelated tasks, whose answers form this Strategic Implementation Plan.

- The Navy is pursuing RAMP to improve productivity, lower costs and reduce lead times for a finite population of parts that are currently costly and difficult to obtain. For selected part families this will allow the Navy to reduce the depth of spares and the number of insurance items it procures. RAMP directly supports Navy industrial activities' Total Quality Management (TQM) initiatives. This reduction of costs and lead times will ultimately improve fleet readiness.

- RAMP is a project to integrate manufacturing and logistics functions using neutral nonproprietary digital product data standards and management philosophies such as total quality management, just in time deliveries and flexible workforces.

- RAMP is a Navy logistics technology effort being executed by the Naval Supply Systems Command for direct application in the Naval industrial activities. The prime contractor for this effort is the South Carolina Research Authority (SCRA).

- Success of RAMP and other related CALS efforts will give the Navy the opportunity to create a more efficient logistics process.

- RAMP will open the door for the Navy to explore technological change in a number of interfaces where better integration offers significant paybacks. As a catalyst, RAMP will demonstrate a commitment to DOD initiatives which will permit industry to follow these technological directions in future weapons systems. Interest in advanced manufacturing technologies from RAMP and other efforts are anticipated from afloat intermediate repair activities and will be pursued separately.

* From the Rapid Acquisition of Manufactured Parts (RAMP) Strategic Implementation Plan 1989-2010.

Exhibit 2

RAMP Milestones*

MILESTONES

Significant milestones for the SCRA contract through Step 2, Lot 6 are provided below:

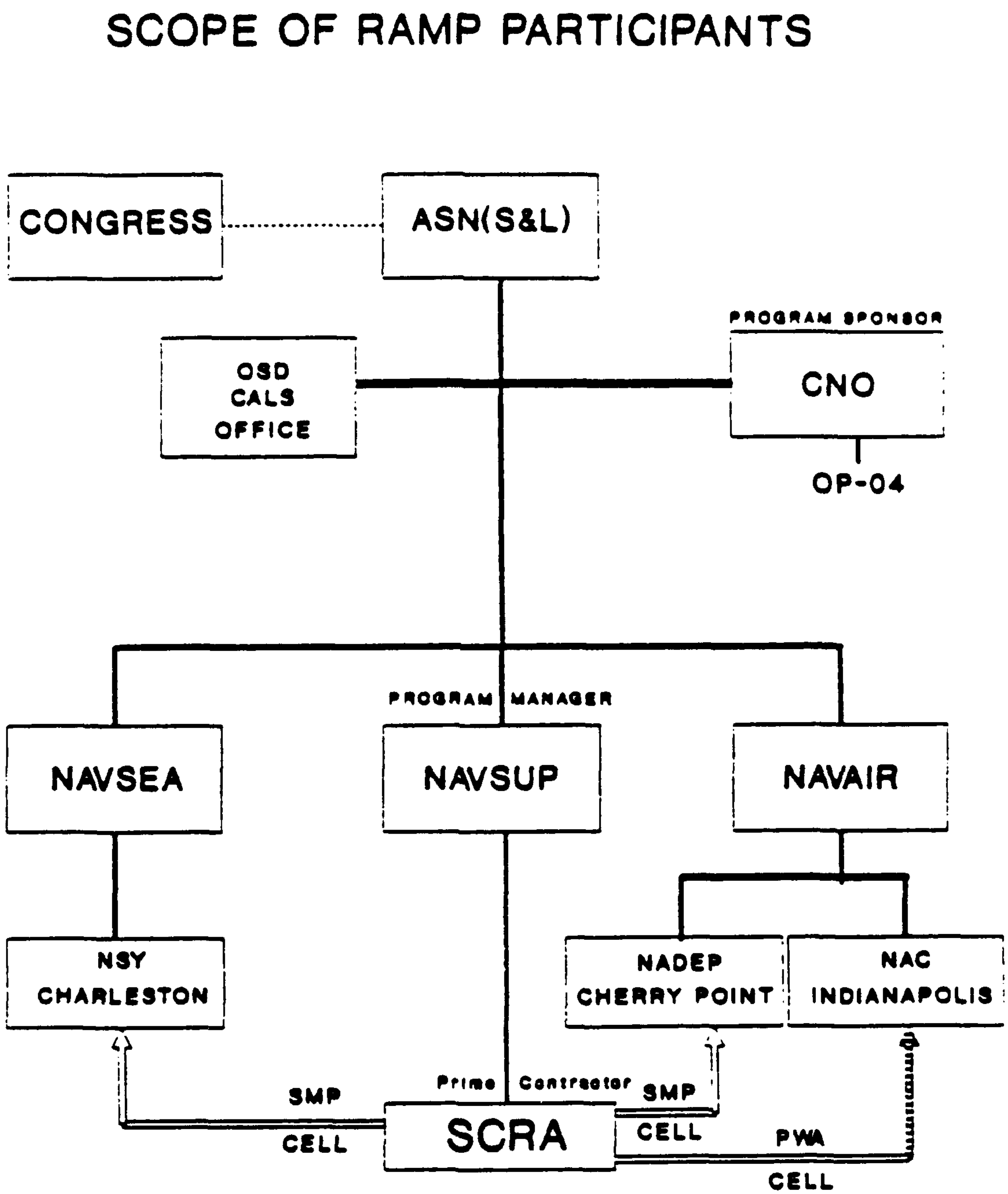
		SMP	PWA
1)	Test Readiness Review (TRR)/ Parts Demonstration	JUN 89	NOV 89
2)	Navy Test and Acceptance	JUL 89- DEC 89	DEC 89- MAY 90
3)	Production Demonstration/ Facilitation at Contractor's Plant	JAN 90- JUL 91**	JUN 90- AUG 91**
4)	Production Review/Acceptance	FEB 91	AUG 91
5)	Transfer to Navy Sites/IOC		
	NADEP Cherry Point	OCT 90- SEP 91**	
	NAC Indianapolis		SEP 91- MAR 92**
	NSY Charleston	MAR 93- SEP 93**	

** End Dates dependent on Military Construction (MCON) completion at sites.

* From the Rapid Acquisition of Manufactured Parts (RAMP) Strategic Implementation Plan, 1989-2010.

Exhibit 3

RAMP participants*



* From the Rapid Acquisition of Manufactured Parts (RAMP) Strategic Implementation Plan, 1989-2010.

EXHIBIT 4
TIME LINE FOR RAMP IMPLEMENTATION

1982-1985	SCRA developed RAMP concept and lobbied for Navy contract.
Fall 1985	SCRA awarded Research and Development Letter Contract.
DEC 1987	Current RAMP contract awarded to SCRA to establish RAMP computer cells at selected sites.
Spring 1988	Farley awarded Small Business Contract to local Virginia company to try to establish RAMP part data base.
MAR 1989	<u>Rapid Acquisition of Manufactured Parts Strategic Plan 1989-2010</u> forwarded to Congress.
1990-1991	Workload conferences held at various upcoming RAMP sites to analyze bid process procedures.
APR 1991	Louisville PDES/RAMP computer site implemented.
MAY 1991	Workload conference at NAC, Indianapolis to establish bid process procedures and time frames.
AUG 1991	Cherry Pt. RAMP cell implemented.
AUG 1991	Workload conference, Pensacola.
NOV 1991	ASO parts from August conference (60%) canceled due to budget cuts.
JAN-MAY 1991	SPCC prepares approximately 125 bid packages for 1992 RAMP sites, ten bids received back from sites.
APR 1992	Charleston RAMP cell implemented.
MAY 1992	Crane PDES/RAMP computer site implemented.
JUL 1992	Electronic workload conference, ALRE 41.

AUG 1992	EDI conference, Charleston, SC.
SEPT 1992	Indianapolis RAMP cell implemented.

III. TEACHING NOTES

LEARNING OBJECTIVES. This case was designed to enable a student to analyze the implementation of a new technological application. The implementation involved a variety of Navy commands or organizations, some of whom have completely distinct missions. It is therefore necessary for the student to evaluate the implementation of the program within particular commands and also its overall success or failure as a Navy program. Each of the following issues are topics that can be developed from information contained in the case.

1. The success or failure of the implementation and how the success or failure is defined.

2. How the new program was implemented into the current management control system and how the management control system and organizational process affected the implementation.

3. "Customer" needs and how to address them.

4. Problems inherent in implementing any type of program across several different organizations.

5. The importance of adequate communication and communication systems in a newly implemented program.

6. Comparison of expectations of a new program with actual outcomes.

7. The need to remain flexible with a new program and shift and adjust goals as necessary.

8. Support from senior officials and involvement in implementation planning by all participants.

9. Establishment of a management control system (especially feedback mechanisms) to monitor implementation.

10 The need for careful, complete and flexible planning prior to implementation to ensure success.

A. IMMEDIATE ISSUE

The immediate issue of this case is focused on the actions of Barney Farley, NAVSUP Ramp Project Manager, who was in charge of a program which was having difficulty in meeting the expectations of its developers and supporters. This program was executed over five years with high expectations. These expectations were generated from the supporting organization (NAVSUP) as well as Congressional supporters (who provided the funding) and the South Carolina Research Group (who developed the RAMP technology). The implementation, however, has not fulfilled these expectations. There were two major symptoms (both interrelated) that indicate the implementation of the RAMP program was falling short of expectations: low utilization of the local facilities, and a lack of orders from the Inventory Control Points (ICPs). The low utilization rate was the major symptom of the implementation problems – the technology was not being fully used. In conjunction with this – actually a reason for this – was that the ICPs were not awarding contracts to the facilities at the rate originally intended. Although the issues of the case deal with past strategies of implementation, solutions must focus on the future - what to do given the actions of the past.

B. UNDERLYING ISSUES

The underlying issues focus mainly on the interactions of the actual RAMP sites with the Inventory Control Points (ICPs) – primarily because they were the customers of RAMP. In implementing RAMP technology, issues such as strategic planning, the needs of the customers, and the interrelationships of the various commands involved must be addressed. No matter how good the technology – if it did not address the customer's needs AND if it was not incorporated into the existing organization's procedures – it was a questionable use of scarce resources. These issues fell into five main areas: strategic planning, customer needs, organizational policy, bid procedures and the communication process.

1. Strategic Planning

One of the problems with this implementation was the lack of planning. The formal implementation plan, while covering many topics, lacked one vital item: which commands would be using this technology to manufacture parts and what exactly did they need. Exhibit (3) which outlines the scope of RAMP participants did not include the ICPs. Yet, it was the staff of the ICPs which would be generating the orders for parts manufactured by the RAMP program.

Another failure was the lack of participation by commands involved in the RAMP implementation other than

NAVSUP. Many specific issues that became problems during the implementation (e.g. finding parts, lack of technical data) may have been identified. A wider scope of involvement by the RAMP participants may have generated solutions to many of the eventual problems which came up during the implementation.

Additionally, there was an apparent lack of ongoing strategic planning throughout the implementation. After the formal strategic plan was published, there was apparently little other planning. It appeared that problems were addressed as they came up, with solutions generated quickly. When the implementation was accelerated and all sites came on line within approximately one year, there was little time to determine and use any of the "lessons learned" from the other sites. *The EDI system proposed by SCRA* might have also fallen into this category.

Another planning issue involved the wide variety of participants in the RAMP program implementation. All of the commands (NAVSUP, ICPs, RAMP sites) who participated in this implementation had different missions and were responsible to different bosses. NAVSUP's main concern was to alleviate and ease supply problems, in this case, the expensive cost of small lot spare parts. NAVSUP was directly responsible to the CNO. The ICPs were responsible to NAVSUP but also had indirect, but strong, ties to NAVSEA and NAVAIR whose main mission was to keep the Navy's air and surface forces in a high state of readiness. NAVSEA and NAVAIR were also both directly responsible to the CNO. Finally, the RAMP sites were responsible to the individual shipyards or naval stations where they were located who, in turn, were in the NAVSEA or NAVAIR chain of command.

The missions of these commands varied, but all the commands needed to work together to make the RAMP program productive and cost-effective. These widely varying missions made communication and working together difficult at times. The physical aspects of communication are scheduled to be improved through the EDI implementation. But EDI would not necessarily ensure that all the commands would work together despite their different goals.

2. Customer Needs

One of the basic flaws of the implementation was the failure to address customer (ICP) needs. While the technology itself was impressive and the goals were admirable, actual customer needs were not specifically addressed. Basically, the designers of RAMP technology produced a technology that was to address the problems they thought existed in the procurement of spare parts. However, the ICPs (who were actually purchasing and dealing with the spare parts) had different problems. A major stumbling block that was discovered as the program was implemented was finding parts which fit the parameters of RAMP. In trying to find these parts, one of the most important deficiencies was uncovered: the lack of adequate technical data on parts.

In general, the parts identified for RAMP were spare parts which were expensive to make in small lot sizes - but were only needed in small amounts. The overall goal of RAMP was to provide a cost-effective method of producing spare parts in small lots. However, the implementers at NAVSUP and the ICPs discovered that it was difficult to identify which specific parts should be produced using RAMP technology. When the RAMP program was initiated, it was left up to the customer (the ICP) to determine what parts "fit" the technology.

Finding parts turned out to be more difficult to determine than anticipated by the implementers of RAMP at NAVSUP and SCRA. At one point, a small contractor was hired to attempt to identify a listing of all parts which would fall into the RAMP technology parameters but the task proved difficult and unwieldy. As a result, the points of contact at each ICP had to sift through thousands of parts specifications and attempt to identify those which could be made at the RAMP facilities - going outside the normal procurement process.

In essence, the customer was being asked to identify RAMP parts and then "feed" these parts into the local RAMP sites. Instead of the new technology responding to the needs of the customer, the customer was trying to fit their needs into the available technology.

Technical data was perhaps the most important issue faced by the implementers of RAMP. As the program was implemented, it was determined that nearly sixty-five percent of the parts at the ICPs did not have adequate technical data. RAMP was designed to make parts using full technical data. What the staff at the ICP needed was the capability to generate full technical data given a particular part – essentially, reverse engineering. The staff of the ICP needed to be able to send a part which had incomplete or outdated technical data to a Navy (rather than commercial) site. The site would conduct reverse engineering by the part and create the data to allow the part to be manufactured.

This need for technical data was often in conflict with the actual manufacturing process – and manufacturing was the original intent of RAMP, not reverse engineering. But ultimately, the RAMP implementation needed to address the customer's needs.

3. Organizational Policy

In implementing RAMP, there were several organizational issues that caused conflict. Internal policies and culture at the two ICPs were often completely different. Competition in contracting (between commercial contractors as well as commercial vs. government facilities) was an issue which appeared to have been inadequately addressed. There were several very precise regulations and laws that government activities MUST adhere to in awarding contracts. Although one of the goals of the RAMP technology was to provide SMP/PWA in small lot quantities more cost-effectively than commercial vendors, RAMP bids were not made in competition with commercial activities. When RAMP technology was initiated, it was implemented as an in-house (Navy) option. The ICPs, therefore, had to find reasons to keep RAMP bids out of the competitive arena.

Another consideration that apparently was not adequately addressed was the lead time versus cost issue. One of the major advantages of RAMP technology was the vastly reduced lead time for building these parts. However, the cost for parts with short turn-around times was larger than commercial costs with substantially longer lead times (60 days vs. 400 days). This was due to the fact that the computerized technology itself was more advanced and therefore more expensive. While the hidden costs of long lead times had been acknowledged by the procurement commands (ICPs), they had not been incorporated into the decision-making structure of the procurement process. If these hidden costs were not taken into consideration, RAMP technology would often provide higher cost bids for parts. Thus, even if the points of contact had found spare parts which fit the RAMP mold, the contracts would not be awarded because the bids were higher than the traditional commercial bids. Additionally, there was the issue of immediate availability of dollars. If there was not a high priority on the need for the part, an inventory control officer might choose to spend funds on the low dollar source regardless of lead time. This allowed remaining funds to be spent on other needs. This makes economic sense for the inventory managers and adversely affected the selection of RAMP technology for certain parts.

The two ICPs – ASO and SPCC – were also very different in their approach to awarding contracts. Each had different policies on competition, cost, and funding procedures. ASO wanted all parts possible to be bid competitively, considered cost more important than lead time, and had an complex payment system for RAMP contracts. SPCC, on the other hand, was more relaxed on the competition issue, considered lead time over cost when down systems were interfering with readiness, and funded the contracts relatively quickly once the bid was accepted. These different policies were acknowledged by Farley but proved difficult to resolve.

Finally, there was a more political issue with ASO: traditionally their internal contracts had gone to aviation commands – however, most RAMP facilities were located at NAVSEA commands. Awarding contracts to these facilities may have caused some uncomfortable feelings related to a traditional intraservice rivalry (aviation vs. surface communities).

4. Bid Process

In implementing the use of RAMP technology, the planners at NAVSUP and SCRA failed to ensure that it was incorporated into the existing procurement organizations. RAMP technology and its use was outside the current procurement system. In the initial implementation, the value of the new technology provided by the RAMP program was prominently emphasized and there was extensive discussion by the contractors (SCRA) and the planners at NAVSUP on how the technology would work and where the RAMP facilities would be set up and financed. However, one of the crucial questions was not addressed. How to get the orders? Even though the technology was developed to ease problems with expensive, small lot spare parts, little or no consideration was given to how the procurement system handled or used this new technology.

Basically, the initial implementation did not weigh the factor of how the (admittedly cumbersome) procurement process would be able to use this technology. In fact, this aspect was not considered as a major factor in the implementation process. Barney Farley understood the need for support of the ICPs and took a variety of steps to ensure that support and cooperation. This included making presentations to inventory control officers, ensuring specialized coordinators existed within each organization and briefing top-level officers.

However, integrating RAMP into the process of awarding contracts was not part of the implementation plan – either initially or at a later date. The actual bid process did not allow RAMP technology to be easily accessed as an option. When RAMP technology became available for certain types of spare parts, it was essential that the procurement process be adapted so that the inventory control officers could easily avail themselves of this new option.

In order to use RAMP technology, methods of going "around the system" were established by both ICPs. For example, Farley set up two points of contact (RAMP program managers) within each of the ICPs. These individuals were to provide information and generate orders for the RAMP program. But, these points of contact were actually outside the procurement awards process. They each were responsible for other functions within the organization. Instead of RAMP technology being an automatic option for inventory control officers (given certain pre-conditions), the points of contact had to solicit parts from these inventory control officers. Basically, the use of RAMP technology remained completely outside the procurement process.

The bids for RAMP technology were outside the system and this was a disincentive for inventory control officers to award bids to RAMP sites. These disincentives were created because the funding process itself had to be adapted. At both SPCC and ASO, any bid awarded to a RAMP facility had to go through a separate in-house processing procedures to be funded. Additionally, with a RAMP bid – because the funding was different – the inventory control officer or RAMP liaison retained responsibility for follow-up. Usually, follow-up was conducted by a separate department. Because the internal processes of the ICPs were not adapted to RAMP technology, it was difficult and cumbersome to award contracts to RAMP sites. The fact that a number of contracts had actually been awarded was attributable to the effort of the RAMP program managers at the ICPs and the diligent inventory control officers who realized the value of RAMP technology despite the lack of an institutionalized award system.

5. Communication

Communication was also a major problem from the beginning of the implementation. The main difficulty in the communication process existed because there were so many "players" involved with differing goals. This caused communication problems due to the actual physical problems of communicating as well as the fact that the commands had different missions and chain of commands. However, the proposed solution, an EDI system, might also have its own problems.

The physical problems of communication between the RAMP sites and their customers (the ICPs) existed primarily due to wide geographical separation. ASO and SPCC were located in Philadelphia and Mechanicsburg, Pennsylvania, respectively, while the RAMP sites were spread throughout the eastern U.S. from South Carolina to Indiana. Paperwork (including the required Request For Quote) for orders had to go through the mail. Even with phone calls to ease the process, delays were common. One solution to this was the establishment of workload conferences where the entire bid process was completed during the one-week conference – but these conferences were not always successful.

The proposed solution to these communication problems was the implementation of an EDI system. This solution was spearheaded by SCRA but there were doubts about the effectiveness of the system by some of the participants. First, many local sites already had some form of EDI and did not want a separate EDI system just for RAMP. Secondly, it might not solve many of the existing problems – such as merging the missions between different commands (i.e., the ICPs and the RAMP sites). Additionally, EDI would not solve the local administrative delays (especially given that the entire cycle for an order was as long as 150 to 200 days at times). However, the system would promote faster communication processes and perhaps identify existing problems more clearly. The big issue might be similar to that of the implementation of the RAMP program itself: Is the implementation thoroughly planned and does it have the support of all the participants?

C. PROPOSED STUDY QUESTIONS

1. Was the implementation of the RAMP program successful? Why or why not?

2. Were the steps Barney Farley took to implement the RAMP program adequate? What else should he have done? What should he avoided?

3. What kind of management control program did Farley use to track the implementation? Could he have done anything else?

4. What were the main issues for the staffs at the Inventory Control Points? What were the main issues for the RAMP sites? How were these issues resolved?

5. What strategies should Farley use for the future of the RAMP program?

IV. CONCLUSION

The purpose of a management case study is to provide a written account of an actual situation in which students can examine the facts of the case, analyze actions taken and propose solutions for the future. The RAMP implementation provides a myriad of issues for analysis and discussion. This implementation of a new technology affords the opportunity to examine strategic planning and management controls relating to factors such as strategic planning, customer needs, work flow processes and communication.

One of the important issues was the planning for the implementation of RAMP. The formal implementation plan was developed by the staffs at NAVSUP and the other funding commands with little or no input from other participants in the RAMP program. This led to some of the eventual implementation problems. Customer needs were not examined adequately during the evolution of the program. Many of these needs, as well as the procedures for bidding on parts, were not completely addressed during the planning stages. It is interesting to note that the formal implementation plan did not include the Inventory Control Points (ICPs) in the scope of participants.

Customer needs were not addressed adequately in the planning stages. The implementation planning failed to address specific customer (ICP) needs. This did not become apparent until the RAMP cells actually began manufacturing. First, finding parts which fit into the RAMP scenario – difficult to manufacture, small quantities and long lead times – was much more difficult than anticipated. Secondly, once the parts were found, the parts specifications did not always have adequate technical data which the RAMP cell needed to manufacture the part. Neither of these issues were foreseen and therefore were not addressed in the planning stages. However, if the ICPs, as the initial customers of RAMP, had been involved in the early planning stages, these issues might have been addressed earlier.

Another group of issues surrounded the actual bid process. Each ICP had a specific person, the *RAMP Program Manager*, who served as a liaison between the staff at the ICP and the RAMP sites to facilitate the bid process. The RAMP program was not a normal option for the inventory control officers (who monitored the need for spare parts) and each RAMP liaison needed to actually search for parts to feed to the RAMP sites. Additionally, the issue of competition in contracting was a problem - using RAMP technology required the staff at the ICP to justify using in-house bid procedures vice civilian contractors. Cost was also an issue. While RAMP could vastly reduce lead times, its cost was usually also higher. There was no set mechanism at the ICP to justify the additional cost as a trade-off against excessive lead times. Getting bids to and from the RAMP sites through both commands administrative procedures also caused difficulties and extended lead times. The bid process was not adapted to the new technology provided by the RAMP program.

A final issue was the communication problem. The implementation process had continual communication problems. These included the more mundane, such as delays resulting from mailing bids to and from different geographical locations, to the more complex, such as a lack of direct communication between those who needed the parts and those who were manufacturing them. Communication was also difficult due to the different missions and responsibilities of the commands involved in the program.

The RAMP program is a good example of trying to implement a program in a large organization with many interrelated factions. This is never easy and it is apparent that planning is imperative. But the other element that is necessary is flexibility. With an implementation so large and diverse, the staff involved must be flexible and willing to adapt to new situations as they arise.

The developers of the RAMP program started out with a goal of simplifying and accelerating the manufacture of certain hard-to-get spare parts. But the program has evolved into a flexible manufacturing program which provides reverse engineering to establish viable technical data on certain spare parts. The manufacturing process has apparently become secondary. The staff at NAVSUP, the ICPs, and the RAMP sites who were implementing RAMP have had to demonstrate enormous flexibility to be able to shift the emphasis of the entire program.

Finally, the implementation of the RAMP program is not just a case about how to implement a new program. It is a case about how to deal with new technology. New technology can provide a variety of innovative and different ways of conducting business - some of which will not be discovered until after implementation. New technology may also demand a change in the status quo - current procedures may be ineffective with new technological advances. The key is thorough planning combined with flexibility.

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Navy Ships Parts Control Center
5450 Carlisle Pike
P.O. Box 2020
Mechanicsburg, PA 17055
Attn: Code 05741

12. Mr. R. Johnson 1
MAILSTOP 70
NAC Indianapolis
6000 East 21st Street
Indianapolis, IN 46219-2189