Indian Head Division
Naval Surface Warfare Center
Indian Head, MD 20640-5035

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REVOLUTIONIZING THE ACQUISITION PROCESS AT THE NAVAL SURFACE WARFARE CENTER, INDIAN HEAD DIVISION

A Final Report On Reengineering Government Procurement

The RAP Team

Vince Pasquale
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INDIAN HEAD DIVISION
NAVAL SURFACE WARFARE CENTER
Indian Head, Maryland

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EXECUTIVE SUMMARY

In December 1995, the Acquisition Quality Management Board at the Naval Surface Warfare Center, Indian Head Division appointed a project team to "reengineer" the simplified acquisition (small purchase) process using a Business Process Reengineering model adapted from Texas Instruments. The project consisted of four phases: Phase I, Project Initiation; Phase II, Current Process Understanding; Phase III, New Process Design; and Phase IV, Implementation. This report documents the results, findings, and recommendations for the first three phases of the project. It also is intended to serve as a guide to future reengineering teams that may want to use this Business Process Reengineering model.

Results revealed that the current "simplified" acquisition process at Indian Head contains approximately 100 steps, which include numerous process handoffs and duplications of effort, multiple levels of review, and intensive paperwork and documentation, all of which produce a very slow, costly process that frustrates customers and causes many instances of excessive delays, errors, and unanticipated expenses. The reengineered process establishes a procurement strategy that positions Indian Head to take advantage of leveraged buying by grouping procurements of common items using any one of three new processes: a streamlined and automated bankcard process; a partnership method for high-volume, low-risk, off-the-shelf goods and services; and a commodity method for higher risk, volatile-market, custom goods and complex services. Each option consists of no more than ten steps and four or less handoffs. The new process significantly reduces cycle time and expense, reduces inventory requirements, fosters prompt payment through increased use of the bankcard, reduces the amount of paperwork and forms required, and enhances teamwork—all of which contribute towards creating greater customer satisfaction and operating efficiency.

According to Indian Head's 1995 procurement data, these three process options should initially capture about 80% of the total number of requisitions generated, which accounts for 60% of the procurement dollars spent. While the project team was originally chartered to look at the simplified acquisition process that covers procurements under $100,000, the reengineered process can work for procurements at any dollar amount. Once an agreement is in place, under either the partnership method or the commodity method, any item covered by the agreement can be purchased regardless of its cost. This means fewer contracts, better utilization of resources, reduced paperwork, knowledgeable buyers, better supplier relationships, and value-added jobs for employees. The reengineered process also offers significant corporate cost savings estimated to be approximately $5 million.

Indian Head has requested approval from the Office of Federal Procurement Policy (OFPP) to be part of their Procurement Innovation Test. Under this program, Indian Head is requesting exemption from the Competition in Contracting Act, Small Business Act, Service Contract Act, and the Truth in Negotiations Act as well as relief from posting solicitations (Public Law 99-591) and vendor rotation (FAR 13.106). Indian Head is awaiting OFPP's decision and, if granted, would use the exemption during the pilot implementation.

The implementation phase started in October 1996. After contracts are awarded, the pilot studies will run for 90 days and the results will be evaluated, problems addressed, and savings calculated. Final results should be available by September 1997. The metrics that will be used to gage performance are as follows:

- Reduce process time

  - From up to 8 weeks to 2 days for off-the-shelf items
  - From up to 7 months to 2 weeks for custom items.

- Reduce process cost

  - By 80% for requisitions (from $240 avg. to $50 avg.)
  - By 66% for bankcard transactions (from $75 avg. to ≤$25).

- Reduce the number of requisition and invoices in each commodity area by 50%.

- Obtain a minimum of 5% to 8% price discounts on products in a commodity through leveraged buying.

- Reduce labor hour expenditures on payment resolution by 50% and reduce late interest penalties to zero.

Once the results of the pilot programs are evaluated, this process will be used throughout the Indian Head Division as the new way of doing business.

ACKNOWLEDGEMENTS

The RAP Team talked to many people at Indian Head, other government organizations, and private industry. To everyone we spoke to, interviewed, exchanged ideas with, and relied on for service, and to those who covered for us while we were otherwise indisposed, we say "thank you!"

We send a special thanks to the following organizations who allowed us to visit with them: Honda, IBM, Wright-Patterson Air Force Base, Defense Industrial Supply Center, and NASA.

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INTRODUCTION

As a result of acquisition reform initiatives within government, the Acquisition Quality Management Board (QMB) at the Naval Surface Warfare Center (NSWC), Indian Head Division appointed a project team to study and recommend changes to the acquisition process at Indian Head. Specifically, the simplified acquisition (small purchase) process was selected for two reasons:

- It represents a significant majority of the procurement actions at Indian Head.
- It involves just about every employee, either as a customer or stakeholder. Most employees have experienced some form of ordering, buying, requisitioning, receiving, or paying for items or services that are needed to complete a job.

Originally the project started as a process action team (PAT), but it was soon changed to a reengineering project using a Business Process Reengineering (BPR) model adapted from Texas Instruments. Dr. Michael Hammer, a renowned reengineering expert and lecturer, defines reengineering as the radical redesign of business processes for dramatic improvement. A reengineering project is different from a PAT in that it radically redesigns how a process operates. PATs tend to look for smaller scale, incremental improvements. While PATs continue to be important, reengineering projects are selectively chosen where they would have the most impact on improving business operations.

This was the first reengineering project for Indian Head. Previous PAT teams consisted mainly of employees from the department that owned the process. The QMB felt that this would be a barrier to "out-of-the-box" thinking. Therefore, the reengineering team was structured with the emphasis on cross-functional teaming and customer focus. The team consisted of five members, four of whom were from outside the Supply Department representing customers of the process. The group officially called themselves the RAP (Revolutionizing the Acquisition Process) Team:

Vince Pasquale - Weapons Engineering Department (Team leader)
Donna Dancausse - Corporate Operations Department (Facilitator)
Michele Gilroy - Supply Department
Tim Marquart - CAD/PAD Department
Bob Tyo - Ordnance Department

In December 1995, members of the Acquisition QMB and the RAP Team attended a two-day reengineering training seminar given by Texas Instruments. This was timely information and helped to provide a "strawman" project plan for the RAP Team. The project involved four phases. The RAP Team worked approximately 20 hours per week and finished the first three phases in 8 months (January to August 1996).

Phase I, Project Initiation, involved becoming familiar with reengineering principles; conducting initial research on acquisition reform initiatives in government and private industry; structuring the problem to be reengineered; and defining boundaries to limit the scope to a manageable, understandable size. In addition, the team determined the "customer careabouts" for acquisition, developed a list of subject matter experts, began establishing some internal and external contacts, and started researching Indian Head's procurement data to better understand the acquisition environment in quantitative terms. Finally, and most importantly, the team developed initial metrics (referred to as stretch goals) that would drive the remainder of the reengineering effort.

Phase II, Current Process Understanding, involved modeling the current process; benchmarking; assessing the impact of laws, regulations, and current technologies; conducting a "walking the wheel" exercise (an analysis of the current corporate culture); and identifying and recommending quick hits (internal process changes recommended by customers that can be implemented quickly and easily). In addition, the team refined its list of subject matter experts and made follow-up phone calls or visits with many of the contacts in government and private industry that were established during Phase I. This benchmarking was critical to the reengineering process. It provided many creative ideas and best practices for the RAP Team to use in designing a new process, which was the main challenge in Phase III.

During Phase III, New Process Design, the team created a visionary procurement process that served to focus and direct the development of prototypes for the new process. Phase III also involved assessing the potential technology implications for the new process; conducting customer and stakeholder interviews to get feedback on the new process; conducting a "walking the wall" exercise (critiquing the new process to further develop and refine it); and finally, developing recommendations, a transition plan, and lessons learned for future endeavors. In addition, the RAP Team analyzed how Indian Head's corporate environment (organizational culture, behaviors, management systems, jobs, and technology) must change to support the new process.

In August 1996, the Acquisition QMB reviewed the RAP Team's recommendations and transition plan and approved them, leading us into the final phase of the project, which is expected to take 12 months to complete (October 1996 to September 1997). Phase IV, Implementation, is being executed by an implementation team and three pilot teams comprising employees with specific expertise in the commodity areas being tested. Based on the RAP Team's review of 1995 procurement data, 60% of Indian Head's purchases fall within nine Federal supply groups. The pilot implementation includes three of these groups: construction materials, chemicals and chemical products, and computer equipment and repair. The implementation team will provide overall guidance during the implementation phase to ensure that focus remains on performance improvement and cost savings.

PHASE I. PROJECT INITIATION

"There is no undertaking more hazardous than a new order of things, because the innovator has as fierce opponents all those who profit from the existing system and only lukewarm defenders in those who might profit from the new one." - Machiavelli

Background

Phase I contained the following steps. While these activities are discussed individually in this report, in reality the team worked on them concurrently over a period of several weeks.

- Form team processes and procedures.
- Define process boundaries.
- Make benchmark contacts.
- Collect customer careabouts.
- Devise a communication and networking plan.
- Establish/define stretch goals.

Form Team Processes/Procedures

The first order of business was to get organized! One of the first things we did as a group was view two videotapes produced by reengineering expert, Dr. Michael Hammer. These videos supplemented the formal reengineering training and provided focus, energy, and motivation to jump full force into the project. The second task was to determine how to best function as a team. Since the members knew very little about each other, it was important to establish some guidelines in order to structure how the team would operate during the project. During our initial meetings, the members of the team took time to personally introduce themselves and describe their background along with any particular skills or interests that might pertain to their role in the reengineering project. A list of ground rules was then created that would serve as the norms or expectations for the team. The ground rules covered topics such as what to do when running late to a meeting, how decisions would be made, how often to meet, and behavioral courtesies.

While we recognized the value of having meeting agendas, we decided not to keep minutes. This decision initiated the radical, out-of-the-box attitude that would be needed throughout the project. Since we had planned on meeting two to three days each week, we decided that at the end of each week we would briefly summarize what was accomplished during that week (by preparing a bullet list) and email these "weekly highlights" to the Acquisition QMB which served as our steering committee. The weekly highlights established a standard communication channel with management and served as a way to continually provide project status. In addition, we decided to give the team a name. After brainstorming many ideas, we selected the "Revolutionizing the Acquisition Process (RAP) Team." This simple gesture provided a sense of unity and cohesion, helped to shed individual organizational and functional identities, and provided a means to identify the project. The team found a conference room to use as a dedicated work site away from our regular offices and jobs. The room was christened as the RAP Team Headquarters.

Next we drafted a project plan that listed the major phases of the reengineering project and the primary tasks under each phase. Target completion dates and deadline dates were assigned for each phase, projecting a redesigned process to present to management in six months. The schedule discussions proved to be quite interesting. From the reengineering training, it was understood that reengineering is not a quick process. While dramatic results can be gained, it takes time to create those results because it essentially requires eradicating the fundamental underpinnings of a process and starting from scratch. It also takes time to understand the current process, understand the customers' perspectives, become acquainted with best practices, and then design a new approach. While we felt that each step in the project plan was a critical prerequisite for the next, we also realized that management wanted to see progress in a timely fashion. This discussion helped serve as the basis for each team member making a commitment to meeting the agreed upon deadlines and keeping management informed of the project status.

The RAP Team presented the project plan and schedule to the Acquisition QMB. There was a general endorsement of the plan. Some members expressed concern with the amount of time the entire project would take and questioned the value of doing Phase II. The RAP Team leader talked with upper management and discussed the pros and cons of the project approach. In the end, we decided to proceed as planned. Now we were ready to embark on our mission.

Define Process Boundaries

This step involved defining the scope or the beginning and ending points of the process to be redesigned. We also had to determine the performance elements that ultimately would become the project's stretch goals. Which aspects of the process would provide the focus of the improvement? Should the project be approached from the point of view of the number of purchase methods, from what we buy, from the dollar thresholds, etc.?

After reviewing data on Indian Head's current acquisition process, such as the volume of purchases by different purchase methods, the procurement action lead time (PALT—the time the Supply Department had the purchase action), and the volume of small purchase awards, we decided that the process should begin with someone having a need for a product or service. Initially, some members felt the process ended when the person with the need received the product or service; paying the vendor was not considered as part of the process. However, after discussion it was agreed that payment was truly part of the process outcome as it brought closure to some intricate customer-supplier dynamics that occur throughout the process. To exclude payment would eliminate a critical subprocess of the overall process and would project a narrow view of the process. Also, it would mean that the team was not really wiping the slate clean. We concluded that the process ended with a person getting the desired product or service (happy customer) and the vendor getting paid (happy supplier).

The team also postulated that the project approach might end up being oriented by *types* of procurements; that is, Indian Head purchases goods that are readily available (off-the-shelf) and also buys products that have to be designed or customized for specific needs. We concluded that the process used to buy a product will vary depending on whether the product is off-the-shelf or customized. The team then embarked on the activities that would form the crux of this first phase.

Make Benchmark Contacts

In general, benchmarking is the process of measuring an organization's products, services, and practices against the toughest competitor or against companies recognized as industry leaders. Benchmarking involves studying other organizations and adapting their best practices. The RAP Team embarked on an initial benchmarking exercise to obtain some overall ideas of the possibilities in the acquisition arena. The purpose of this initial step was to get points

of contact that could ultimately lead to in-depth interviews or site visits where we could explore alternative acquisition processes and philosophies in detail. The in-depth benchmarking would then be one of the sources of innovation and creativity needed to design a new acquisition process.

At this point the team initiated benchmarking with two objectives in mind. First, we wanted to understand how other organizations approached acquisition and how well their acquisition processes performed compared to Indian Head's. Second, we wanted to explain our project approach to an objective third party and get a "reality check." Specifically, we wanted to know if the way we defined the process and planned on approaching it made sense. We were also interested in talking with others who had actually reengineered a process to get pointers or lessons learned about reengineering.

The team brainstormed a list of potential benchmark candidates, and each member volunteered to contact several organizations to interview over the phone. The ideas for benchmark candidates came from various sources: magazine articles, word of mouth, and Internet searches. While we really did not know what to expect from these organizations, we realized that benchmark candidates could fall in one of three categories: (1) they may have an unreengineered acquisition process (which could perform the same, better, or worse than Indian Head's), (2) they may have expertise in reengineering, yet have not reengineered their acquisition process, or (3) they may have reengineered their acquisition process and it outperforms Indian Head's. The main objective was to find benchmark sources in the third category—organizations who had creatively overhauled and reinvented their acquisition process to yield outstanding performance.

An outline showing the typical flow of a benchmark interview is provided in Appendix A (exhibit A-1). The exact line of questioning depended on whether the organization's performance turned out to be better, the same, or worse than Indian Head's. In anticipation of the possible scenarios, questions were developed geared towards both the company's acquisition process and its possible reengineering experience. In preparing for the phone calls, we discussed benchmarking procedures and etiquette, including things such as setting an "appointment" time and faxing questions beforehand so the company could prepare in advance. We also had the performance data on Indian Head's current acquisition process ready to share with the benchmark contacts. This was in accordance with one of the cardinal rules of benchmarking: never ask for information you would not be willing to give in return.

During this initial benchmarking round, about fifteen organizations were contacted—eight government agencies and seven private companies. Based on these initial contacts coupled with articles the team continued to find in magazines, newsletters, web pages, etc., we found that many private organizations were completing the procurement process in unbelievably short times compared to most government organizations (days and hours versus months and weeks). For example, Allied Signal reduced the processing time for the procurement of low-dollar items from six weeks to one day. Harley Davidson receives parts in two days and relies on just-in-time inventory. Also, an initial hunch was confirmed. There were process differences between procuring available, off-the-shelf parts and routine services versus custom parts and complex services. These differences necessitate separate metrics and expectations for the procurement process.

At this point, the team made valuable contact with NASA. NASA had recently completed a reengineering project on their small purchase process. The RAP Team visited with one of the NASA reengineering team members and got much insight into the joys and frustrations of reengineering. One valuable lesson learned was the importance of upper management's commitment to the reengineering effort. During this visit, we got a point of contact at NASA's Langley Office, which we also visited to learn more about their bankcard program. During that visit, we learned that NASA Langley was consistently earning discounts by making prompt bankcard payments. Indian Head was aware of prompt payment discounts, but had no consistent practice or policy. Langley's policy was to pay the bankcard bill in full up-front and have individual cardholders resolve any disputes with the vendors. Indian Head typically held payment until disputes were resolved, reducing the opportunity to earn prompt payment rebates. Langley also allowed

employees to use the bankcard to purchase items requiring a quality assurance inspection while Indian Head did not. The team felt Indian Head could learn from Langley's practices, make some minor, quick process changes, and gain some immediate benefit.

Collect Customer Careabouts

One of the most important outcomes of reengineering is for the redesigned process to satisfy the customer. We certainly did not want to design a process that would not meet or exceed the customers' needs. Understanding the customers' feelings about the current process would give the team the impetus and direction needed to understand the current situation and get ideas for changing the process. Conducting customer interviews would help provide focus on what the frustrations were and pinpoint where the largest return on investment lay. These customer wants and expectations were referred to as "customer careabouts."

To begin this exercise, we brainstormed a list of internal customers (employees who use the current acquisition process to buy the goods and services they or their coworkers need to do their jobs) by selecting employees from all functional areas at Indian Head. The list also covered various job categories such as secretaries, program and business analysts, production controllers, engineers, and supervisors. We then developed questions that were geared to capture customer likes and dislikes relative to the current process (Appendix A, exhibit A-2) and divided the customer list among each team member to conduct interviews.

Approximately 16 interviews were conducted in total. After each interview, the team discussed the results and analyzed the data by grouping or clustering the data into various categories. The data reflected the general notion that customers want a process that is fast and easy to use, yields accurate results, and is cost-effective. Some specific customer interview data showed that customers felt that the speed of the process is important. There was an overwhelmingly positive response for using the bankcard because it is easy to use and yields quick results. Customers felt that with the exception of bankcard purchases, most purchases take too long. They also felt that requisitions for off-the-shelf material should happen very quickly (a few days) and seemed willing to accept longer wait times for custom goods, but still expected a simple purchasing process. Customers also communicated that the current process is not customer focused, but rather more concerned with following rules and filling out paperwork correctly. The rules and regulations are complex and ever changing and contribute to process bottlenecks and delays. Interpretation of a rule was inconsistent and could vary depending on whom one talked to. Customers complained about the amount of paperwork involved in a procurement action and felt that even the automated procurement system (ILSMIS) was not user-friendly. While some customers said the Supply Department could improve their level of customer service, there was an overall recognition that many good, hard-working people were encumbered by a poorly designed, inefficient process. In summary, the bulk of the customer complaints were directed towards process weaknesses or flaws, not the people involved in the process.

Devise a Communication and Networking Plan

The importance of continuous communication during a reengineering effort cannot be over emphasized. There were many compelling reasons for communicating and networking. First, we needed to publicize the team's purpose and the overall purpose of reengineering to all employees. Since this was the first reengineering project at Indian Head, it was important to dispel any perception that the purpose of the project was to reengineer (or "fix") the Supply Department (the project focused on the process not the organizations performing the process). Second, we wanted to encourage others to participate by offering ideas or sharing experiences to engender enthusiasm for the project and prepare employees for any upcoming cultural changes and new ways of doing business.

Starting with the list of internal customers from the customer careabout exercise, we prepared a list of subject matter experts and supporters to call on during the project as consultants. These people would be critical resources given their knowledge and experience with the process. We also hoped to use the consultants as a means of planting seeds of support and enthusiasm for the process changes. For example, customer interviews indicated the potential critical role of the bankcard and also revealed some immediate improvements that could be made to the current bankcard process. So we immediately conducted an interview with the bankcard administrator, included her on the benchmark visit to NASA Langley, and provided assistance in initiating improvements to the bankcard process at Indian Head.

We also brainstormed ways to communicate the RAP project to all employees. We took into account the various audiences we needed to reach and the myriad of ways to actually communicate our progress. We were already communicating with key managers through the weekly highlights and regular meetings with the Acquisition QMB. To reach a more general audience, we decided to write articles for the station's monthly newspaper and run continuous messages on the marquee that greets every employee when entering the front gate. These marquee announcements were snappy blurbs (such as "Reengineering is not downsizing;" "Reengineering is a clean slate approach;" "The RAP Team is here to reengineer.") that caught people's eye and brought the project some attention.

Establish/Define Stretch Goals

Phase I ended with reporting the findings on customer careabouts, the initial benchmark results, the project plan and schedule for Phases II and III, and the stretch goals to the Acquisition QMB. Customer interviews and performance data revealed that the current procurement process time can take up to 8 weeks for an off-the-shelf item and up to 7 months for a customized item (not including manufacturing and delivery time). The stretch goals were to reduce process time to 2 days for off-the-shelf items or routine services and 2 weeks for custom parts or complex services (the goal of 2 weeks for custom parts and complex services did not include manufacturing lead times as these will vary significantly).

The team now had a clearer sense of direction and objective and was ready to tackle Phase II, Process Understanding, which involves understanding the steps in the current process and usually includes creating a flowchart or model of the current process. Following the NASA visit, several team members questioned the value of modeling the current process. Why take the time to model and understand a process, only to throw it away and design a new one? After some debate, we decided to do the process modeling for several reasons. First, understanding the current process would give us a better understanding of what really needed to change. Second, it would help us understand the impact of any proposed changes on the work environment. Finally, it would give us a baseline of current resource investment to compare with the new process design to estimate potential cost savings.

PHASE II. PROCESS UNDERSTANDING

"The real voyage of discovery consists not in seeking new lands but in seeing with new eyes." - Marcel Proust, 1871–1922

Background

As this was a rather lengthy agenda, we decided to work on several areas concurrently. In Phase II of the reengineering model, the team focused on the following steps:

- Process modeling
- "Walking the wheel"
- Benchmarking
- Evaluating laws and regulations
- Assessing current technologies
- Developing quick hits.

Process Modeling

In modeling the current process, we hoped to familiarize ourselves with all the steps involved so that we could compare ourselves to our benchmarks. We also wanted to share the entire process with each individual stakeholder of the process to illustrate and communicate the duplication of efforts, the value-added steps, and the overall complicated nature of the requisition journey.

Our first step was to create a "strawman" illustrating the basic upper level steps involved. These included having a need, defining the need, satisfying the need, and payment and closeout of the requirement. We then went down to the next level and basically walked a requisition through the process. These steps consisted of the many handoffs that are involved during the process. Next, we determined the inputs and outputs of each of these boxes. In many instances, the inputs and outputs were the same. The requisition itself was often times the input and the output, and only an approval or additional piece of information was added.

We interviewed groups of subject matter experts to help us define the third and final level of the process. Each group outlined the macro-level steps of their jobs. Most of the people were very surprised at the number of total steps and the duplication that existed. Their main concerns addressed trust, differing goals, reputation with vendors, and work-arounds. Overall, the procurement process was not customer friendly. Technical personnel expressed reluctance to go after new business because they could not meet the sponsor's schedule or obligate the funds in time. Most experts said that if they could purchase something on the bankcard, they would avoid the entire requisition process altogether.

Figure 1 is a picture of our completed wall. At this level, there were over 100 steps and the number of handoffs was unbelievable. Only nine of these steps were considered to be value-added.

- Define and communicate need
- Quick-check stock for availability
- Evaluate/select quality vendor
- Communicate need to vendor/award-"buy"
- Track status
- Detect and resolve problems
- Verify that what you expected is what you got
- Deliver to final destination
- Pay the vendor.

Figure 1. Current Process

The procurement personnel questioned the value of required delivery dates, value of ILSMIS, inconsistent goals, lack of team work, and overall priorities. They felt that they were considered to be outsiders and that their customers did not trust them enough to know all of the details involved with a buy. Procurement personnel reported that their performance goals are very much driven by the PALT and audits performed by external agencies (e.g., the Procurement Management Review [PMR]). Most felt that these drivers get in the way of providing good customer service. As such, the buyers had their own work-arounds to get the job done.

Other areas, such as customer service, logistics support, receiving, and Comptroller, recognized the tunnel vision of their efforts. They knew their piece of the puzzle, but questioned the value of their actions. Their individual goals of in and out within one day, delivery on Tuesdays and Thursdays, and payment within 30 days were not customer focused and only added unnecessary time to the overall process. Most of the stakeholders, when asked "Why do we do that?", could not answer the question, or stated, "That's the way we've always done it." It seemed that we had some very good people within the process, but the process itself was broken.

"Walking the Wheel"

After completing our process modeling, we used this information to address the wheel elements. "Walking the wheel" (Figure 2) involves applying our current beliefs and behaviors, management systems, jobs and organizational structures, culture, and technologies to the model that we constructed. We found that customers and stakeholders were not comfortable with moving away from their defined boundaries. Stakeholders liked knowing their small piece of the process and were uncomfortable with the idea of expanding their current roles. However, they felt that they were providing a valuable service for their customers and were very proud of their knowledge in specific areas. The customers, on the other hand, saw these individuals as roadblocks. They did not appreciate the knowledge or the service that was being provided simply because it added time to their requirement.

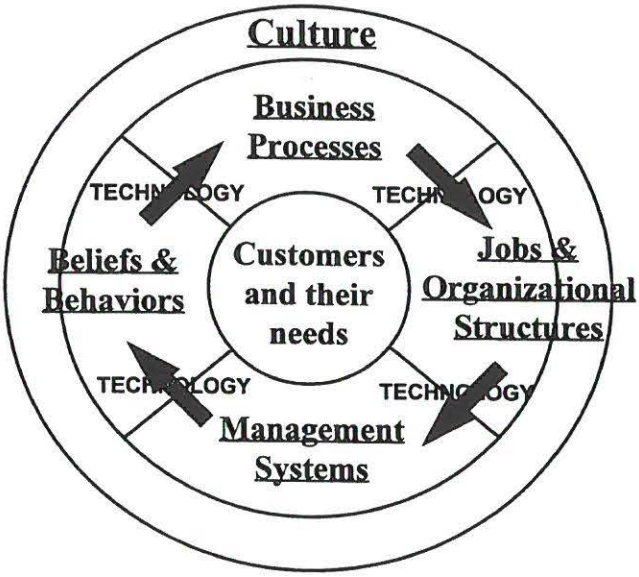


Figure 2. Reengineering Wheel

Stakeholders also seemed to believe that the process could not be changed or that they themselves had no control over it. They were not empowered to make decisions or even think for themselves. Their part of the process was taught to them, and they followed these steps for every requirement. This led us into the issue of trust. Stakeholders, customers, and subject matter experts expressed their concerns of trusting one another as well as trusting the vendors. It seemed that the numerous people who touch each requisition were "policing" their actions, and that a piece of paper was always required as backup. If a mistake was made, a new rule or regulation was put in place. It was said that this punishes the masses for the mistakes of a few, which in turn adds time and cost to the process.

Technology is a wheel element and a hallmark of reengineering. We asked our stakeholders what they thought about our automated procurement system (ILSMIS). The majority agreed that ILSMIS was not user friendly and was often off-line. The number of screens that had to be filled in and the amount of information required complicated the process even further. The databases that we use did not "talk" to one another, which caused rekeying of information. It seemed that we did not have one user-friendly system that did it all. Most felt that we were behind the times and should have already been using electronic data interchange (EDI) and electronic funds transfer (EFT). Even though much information was being captured via computer, we were still very paper intensive.

The next wheel element addresses jobs and organizational structures. From the information we gathered during process modeling, we discovered that there was little or no teaming between the customer and the buyer. The Supply Department and other departments involved in acquisition had different goals. The customer needed to satisfy an external sponsor, and the buyer needed to satisfy the rules and regulations. Training requirements also enforced this narrow line of thinking. Buyers were not taught the specifics of energetics and what this means to Indian Head. Instead, they learned to focus on laws, rules and regulations that pose roadblocks to the customer's goals. The customers, on the other hand, were not sent to classes in an effort to expand their knowledge of procurement either. Overall, each individual's position was very narrowly focused.

The final wheel element calls out our management systems, the measurements and metrics used to give feedback. Here again, the goals were completely different. The customer must meet a schedule that is dictated by a sponsor. The procurement process, however, was measured by the procurement action lead time (PALT). PALT is solely the time it takes a buyer to place an order. The entire requisition process was not a concern, and the goal was to meet the PMR's expectations for following the rules. Even when all rules were followed, the deciding factor when making an award was almost always low cost. This decision conflicted with the customer's needs in that quality and schedule could be more important than cost. Some customers suggested that customer satisfaction be added as a performance measure to every employees' yearly rating.

Benchmarking

Continuing the effort begun in Phase I, we contacted government agencies and private industry firms to assess the current procurement strategies being used outside Indian Head. While we were focusing on companies and agencies that had done or were in the process of doing reengineering, the overall metrics played an important part in our evaluation of this data. Our benchmark contacts are listed below. Most of these contacts were more than willing to share their processes with us.

Government

- Allied Signal - DOE
- ✓ NASA (Headquarters and Langley)
- Cherry Point
- Forest Service
- Dept. of Agriculture
- Internal Revenue Service
- Patents and Trademarks
- Treasury Dept.
- ✓ Wright-Patterson Air Force Base
- FISC, San Diego
- ARDEC
- Sandia Laboratories
- ✓ Defense Industrial Supply Center, Philadelphia

Commercial

- McCormick Spice
- Pillsbury
- 3M
- Harley Davidson
- Talley
- Caterpillar
- McDonnell Douglas
- ✓ IBM
- Boeing
- ✓ Honda
- Motorola
- Texas Instruments
- Beretta
- Aero Components
- Giant Foods
- Bombardier
- Pall
- Lau Technologies
- AOT
- Chrysler

✓ = Site visit

We received tidbits of information from those who were concentrating on one area of their process as opposed to reengineering the entire process. NSWC Keyport focused on receiving a complete and accurate technical data package. To achieve this, they integrated quality assurance (QA) specialists into their procurement department. The result was a 98% acceptance rate versus the former 22% rate. This was not the only benefit realized from their efforts. PALT was reduced from 30 days to 16 days, and the number of requisitions awaiting procurement action dropped from 4,000 to 600. We viewed this as a very significant improvement; however, it would not help us to reach our stretch goals of two days/two weeks. Also, Keyport took a process action team approach, in that they picked one area in which to effect change. We wanted to attack the entire process and radically change the way we procure things.

Other agencies and companies had similar tales to tell. As previously mentioned, Harley Davidson receives parts within one to two days and relies on just-in-time inventory. NSWC Carderock Division issues delivery orders within three days. Sandia Laboratories utilizes invoiceless payment procedures and takes advantage of 98% of the discounts offered for prompt payment. McDonnell Douglas's Helicopter Division implemented a material requirement planning system, which is an automated inventory system that maintains procurement history and automatically prints out a requisition when stock levels are low. They also limit their supplier base to two to five suppliers per part. 3M has a purchase order control system at their headquarters, and their buyers are at each individual site. Presently, they have long-term contracts set up for most of their items, but they would like to move towards long-term business agreements with single sources.

Pillsbury developed a rapid replenishment system through the use of EDI. They also have an electronic list of pre-approved suppliers and the materials they can provide in their pantry development area. After reengineering their procurement process, Pillsbury now focuses on sourcing, conversion, and sales as opposed to procurement alone. Texas Instruments (TI) has developed an express buy catalog. This catalog focuses on 15 commodities and lists a majority of the parts procured from outside sources. Duplicate part numbers were eliminated, the actual end users have access to this catalog, and delivery is made in one day. Since implementing this catalog ordering system, TI has reduced the cost of requisitioning an item to $1.00.

Wright-Patterson AFB, which the team visited, had a very user-friendly EDI program running in their procurement area. This software is called GATEC and was developed by Lawrence Livermore Laboratories. With GATEC, the buyers were able to issue solicitations as soon as a requirement was received, await responses (5 to 10 days), and make an award within one minute. Each buyer was considered a contracting officer, and no higher level signatures were needed. There was no backlog and very little paper. Wright-Patterson also established a $2,500 purchasing limitation, which means that any procurement under $2,500 must be purchased by the end user with a government bankcard.

While it seems that Wright-Patterson has taken major strides towards streamlining their procurement process, they have also suffered setbacks as well, the largest example being the replacement of GATEC with MADES II software, which is considered inferior in comparison. This was a politically based decision, which caused low morale and reduced productivity. However, GATEC was only being used for off-the-shelf, commercially available items with a dollar value of $25,000 or less. Another problem was their lack of a vendor rating system. Awards made to vendors using GATEC could not be guaranteed. Any vendor that was registered with a value-added network (VAN) could respond to a solicitation, regardless of its performance history. Also, delivery timeframes ranged from two days to two months, and sometimes the requirement data were incorrectly translated and the wrong item was received. Despite these problems, we still saw promise with the GATEC software.

Our next benchmarking visit was to Honda in Marysville, Ohio. We were very impressed with Honda's overall operations, philosophy, and procurement process. They focus on planning and have written plans of action for every perceivable problem that can happen. There is no QA inspection; defects are caught on the assembly line or by the consumer. After a reasonable evaluation period, suppliers are considered to be life-long partners with Honda. This means no contracts. Instead, they are issued boiler plate purchase and order agreements. These agreements are very general in that they do not state specific delivery times or firm fixed prices. Most of the items are delivered within a 15-minute to 2-hour timeframe, with the goal of keeping the line going being the priority metric.

To achieve these accomplishments, plus many others, Honda works closely with its suppliers. They do not keep them at arms length, but instead send their employees into the supplier's plants to assist in any area that needs improvement. Honda's management even participates in after-hours gatherings with their suppliers and their families. The philosophy here is that if the supplier is a part of Honda's team, they will not let them down. A company with no knowledge or interest in your goals will not be concerned if they do not perform.

Procurement personnel are considered an important part of the team at Honda. They are not a support function, but key players in keeping the assembly line moving. As such, these employees are assigned to work on the assembly line for the first two weeks of their employment. This familiarizes them with all the parts needed to make an automobile and puts an emphasis on form, fit, and function. Honda's buyers are also required to attend 420 hours of additional training in a broad range of subjects such as quality, automobile maintenance, computer technology, and more. They are expected to be knowledgeable in all aspects of the automobile world as well as purchasing. But their main responsibility is the quality of Honda's suppliers. They must maintain the best suppliers to obtain the best product, best price, best productivity, and best position. This is Honda's "best practices" philosophy.

Honda also has a quality group that works closely with the procurement group. This team is responsible for the quality of the parts. There is no QA inspection; they expect perfect quality and they get it. This is because the quality group (and others) work directly with their suppliers. They visit each supplier's plant and make suggestions for improvements and help in solving any problems that they might be having. They also send out a monthly performance report to each supplier which rates all aspects of their dealings with Honda. A survey form, which rates Honda's side of the partnership, is included with the supplier rating and is expected to be returned. This survey lets Honda know where improvement is needed on its part.

Overall, the team liked Honda's method of procurement. It includes all of the different focus areas, and it works well. With statistics like 98% on-time delivery, only four hours worth of parts to stock or warehouse, total quality with no rework, potential problem analysis plans in place, only 300 suppliers to manage, and overall team perspective, Honda has earned its place at the top.

Our benchmark visit to IBM in White Plains, New York, proved successful as well. There are 160 IBM sites worldwide, and each site has its own procurement group, called commodity councils. They buy by commodities using partnership agreements that are established with their supplier base of 4,500. Of these 4,500 suppliers, IBM uses 300 as core suppliers for 80% to 90% of their procurements. They are moving towards lowering the total number of suppliers and forming partnerships with their key vendors. These councils are responsible for establishing the terms and conditions for each agreement and negotiating the individual prices.

At the next level, IBM has set up divisional procurement councils. Their main concerns are commodity availability, total cost of acquisition, industry standards, inventory, and supplier performance. This group is composed of lead or key members of the commodity councils. These councils then report to the global procurement executive council. The executive council monitors the overall business results, establishes cost and expense targets, drives the company towards technology goals, and measures end customer satisfaction. With just these three levels of procurement comprising 2,400 employees, over $30 billion worth of supplies and services are procured for its 220,000 employees at 160 worldwide locations. This is ten times the amount of procurements executed at Indian Head.

To achieve this success, IBM instituted what they call procurement core values. These values consist of understanding, integrity and teamwork, and initiative and urgency. The overall IBM strategy comes first. All councils work toward this goal. To do this, suppliers, as well as IBM employees, have a full understanding of each other's capabilities, wants, and needs. Both sides also communicate their viewpoints and encourage this interface at all levels. There are no secrets, and trust and integrity are mutually shared. Therefore, there is no competition between councils or between IBM and its suppliers. Competition exists outside of IBM's procurement team and is measured by the rating they receive compared to the industry standard.

Like Honda, IBM also grades supplier performance, inspects only large, complicated items, is striving to reduce their supplier base, buys by commodity, treats suppliers as team members, and rewards its employees based on the overall accomplishments of the company. Both companies also have a strong philosophical outlook in the way that they do business. All employees believe in the strategies, goals, and values of the company, and it shows in their work.

After collecting all of this information, we had to decide what to do with it. We looked at each benchmark and decided whether or not they were truly a reengineering "guru" or simply had some good ideas or processes. We then singled out those ideas that would benefit Indian Head and decided to follow up with our benchmarks concerning those areas. From these ideas and processes, the new Indian Head procurement process was beginning to take shape.

Laws and Regulations

Before we could start designing the new process, we had to evaluate all of the rules, regulations, and laws that might hinder our out-of-the-box thinking. We made a list of the major laws and regulations and their meanings and discussed the reasons that may have put them into place. Although the total number of these regulations was large and formidable, the reengineering process directed us to be aware of them but to not let them suppress our creativity. After all, if the new process promised cost savings, time savings, and good business sense, obtaining a waiver to these regulations would be an uphill battle, but one worth fighting.

Assessing Current Technologies

During our benchmarking endeavors, we kept our eyes and ears open for technologies that might enhance our new process design. There were many different software programs being used outside Indian Head and a few that might be better than what we currently had in the ILSMIS system. We collected information on a few of these

programs and had one demonstration from DSR (Digital Systems Research, Inc.) on a system that is being used at China Lake. Although the GATEC software at Wright-Patterson AFB looked promising, funding problems seemed to hamper the scheduling of a demonstration from Lawrence Livermore Laboratories.

At the very least, we decided that if we could not change our current software operating system, we could submit system improvement recommendations (SIR) to make ILSMIS more user friendly and less time consuming. We were told by the ILSMIS System Support Group that if the SIR benefited all users NSWC-wide, the cost could be shared by all. However, if the change or improvement was solely to our benefit, the cost would have to be paid by Indian Head alone, and the work would have to be scheduled and could be a long time in coming. But the biggest disappointment came when we were told that DOD is trying to standardize its software operating system, and whatever we came up with would be changed when this is mandated.

Developing Quick Hits

The final task in Phase II, which actually continued into Phase III, was to identify and recommend some quick hits. These are process changes that can take place quickly, therefore demonstrating that change can really happen. These quick hits should be in areas that Indian Head has control over, should happen quickly, should not be embedded in law, could involve taking a risk, and should be worth doing even though we would be redesigning the current process. If done correctly, these quick hits could be stepping stones towards the new process and would hopefully eliminate roadblocks currently in place.

As our agenda for this reengineering project was enormous and somewhat overwhelming, the team decided to brainstorm a list of quick hits and submit them to the Acquisition QMB for implementation. The format would consist of (1) the issue/problem statement, (2) a possible resolution, (3) the impact and benefits, and (4) key players or organizations. All quick hits would be written up in this manner and the organization responsible for the action would be responsible for researching the issue and either eliminating the issue/problem or stating the reasoning behind leaving it in place.

Of the 26 quick hits developed by the team, six were submitted to the QMB for action, ten are in the process of being worked, eight are controlled by laws which may be relieved by a waiver, and two were determined to be more of a policy change than a quick hit. Overall, we found that when dealing with government procurement, nothing moves quickly. And if you want the quick hits to be implemented, you have to personally see them through, not hand them off. The six quick hits that were submitted to the QMB were mentored by the RAP Team and required numerous hours of research and persistence. As this was the initial step towards change and involved risk taking, process owners were afraid to relinquish their hold on these controls. But once these quick hits were achieved, the customer realized some relief, and it was proven that change can happen, which was one of our goals. The list of the quick hits can be found in Appendix B.

With all of the tasks in Phase II complete, two transition steps remained to be satisfied. According to the Texas Instruments BPR model, we were to destroy the "wall" that represented the old process and start the new process design phase with a clean slate. To accomplish this, we invited the Acquisition QMB, the commander and the technical director to join us in shredding all of the paper involved in creating our process model. The philosophy behind this exercise was to destroy the inefficient, costly, complicated way in which we handle procurements and never go back to this same way of doing business. This exercise was very symbolic but also somewhat sad because we had put a lot of work into this model and we finally knew the entire process from beginning to end. On the other hand, the idea of designing a new process and knowing that it would be more efficient made us look forward to the next phase.

The second transition step involved creativity exercises for the team members. Our facilitator led us through two exercises that turned on our creative energies and drove us towards thinking out of the box. We were to forget all of the rules, regulations, and steps in the current process and visualize the ideal procurement process. The results ranged from on-line computer catalog ordering to virtual imaging, in which you think of an item and it is delivered automatically. Needless to say, some of us actually went way outside of the box.

Another exercise involved categorizing a list of supplies that were available for stocking a lifeboat after a shipwreck. Items were numbered 1 to 15, with number 1 being the most important and 15 being the least important. After ranking each item, we then explained why we chose each item. This exercise helped us to understand how each other thought and also encouraged using our imaginations to creatively survive this experience.

Continuing our communication efforts started in Phase I, we advertised our progress through email, marquee messages, special bulletins, and the *Flash Point* newspaper. This advertising was extremely important in that the process owners and customers became aware of the changes that were taking place and they had a chance to debate the issues or give input to our ideas. Also, this was a way of converting everyone from the old way to our new process design by letting them contribute and become champions for our effort.

After the wall was destroyed and our creative energies were turned on, we were anxiously awaiting Phase III, the new process design. Finally, we were able to begin on the task that we were originally chartered to do and use all of the ideas that we were given during our benchmarking venture.

PHASE III. NEW PROCESS DESIGN

"Creating the vision of a reengineered organization requires some artistry, because a vision is an image without great detail." - Michael Hammer and James Champy in *Reengineering the Corporation*

Background

Phase III of the reengineering project involved the following steps:

- Developing the vision
- Developing prototypes
- "Walking the wall"
- Finalizing the data
- Developing recommendations
- Developing a transition plan
- Closing—status of quick hits, lessons learned, metrics.

Developing the Vision

Drawing on the ideas and best practices collected from benchmarking, the team created a visionary procurement process that served to focus and direct the development of prototypes for the new process. Themes that had emerged from the creativity exercise at the end of Phase II were qualified vendors, expectations, technology, communication, and quality. We decided to prepare a vision to reflect where we wanted to be in the 7- to 10-year timeframe, which would serve as a guide on how to get from where we are now to the vision. In doing this, we tried to capture the themes from the creativity exercise in the vision. The vision statement is as follows:

> A smart, high-tech, user-friendly computer system with on-line help which facilitates metrics and satisfies all the users of the procurement process, including customers, system maintainers, and suppliers. It eliminates unnecessary handoffs while maximizing resource utilization.

The vision process shown in Figure 3 has eleven steps, of which only three require customer input. Overall objectives are to have as few steps as possible in the process, minimize the number of approvals required, provide accessible on-line help, have little or no paper and forms, and provide a quick and easy system to use and maintain. The basic concept is to provide one-stop shopping in which preparing a requisition would be as easy as sending an email. Fundamental principles supporting the vision are as follows:

(1) Competition is healthy. The market would be assessed periodically to confirm best value.

(2) Vendor philosophy:
- We want to support local and within-state vendors.
- Our vendor database will be minimized to include only quality performers.

(3) The visionary process must capture the majority of our procurements.

(4) There are no people handoffs involved.

(5) Up-front corporate business planning has been done and drives the commodity and vendor database.

(6) Dollar value of the procurement does not matter.

(7) People involved in the process are users, maintainers, and vendors.

(8) There is 100% accuracy on shipment and quality.

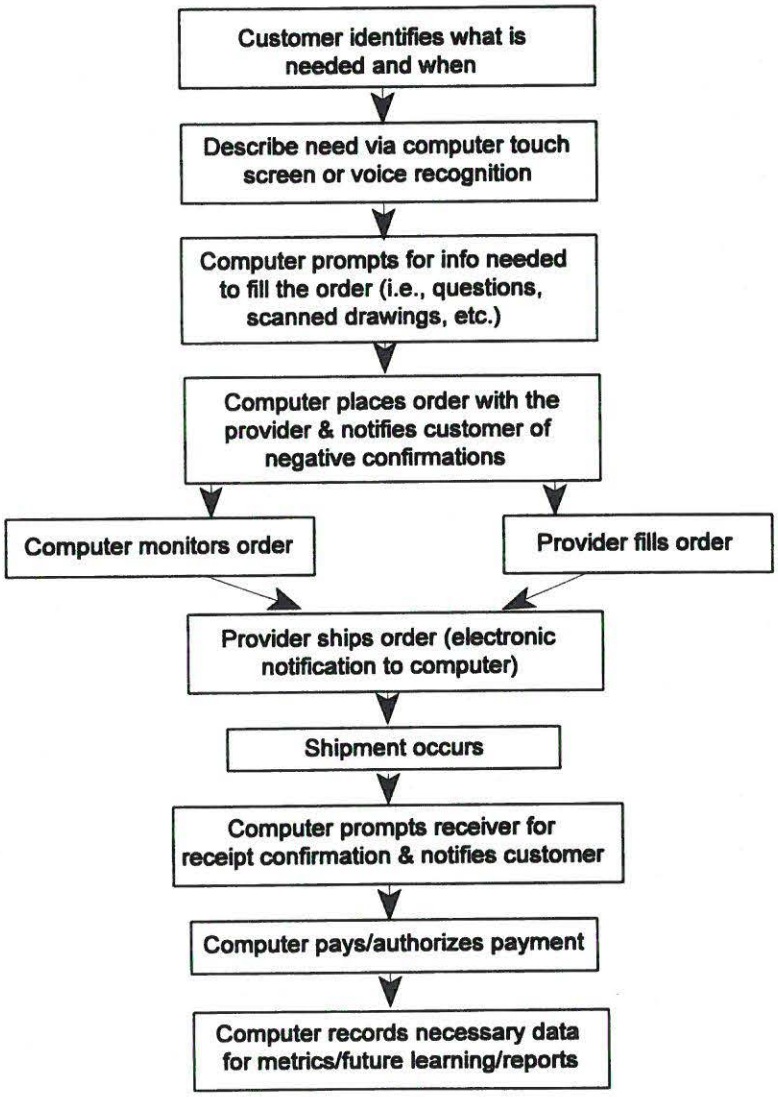


Figure 3. Vision Process

Developing Prototypes

The team reviewed ideas generated from benchmarking and brainstormed eight prototype methods for procurement which are briefly described as follows:

- Bankcard method — A streamlined and fully automated version of the current bankcard process requiring only one data input by the card holder and automatic reconciliation of invoices via computer to eliminate most of the current paperwork and forms.

- Automatic ordering — A computerized bill of materials ordering method suitable for repetitive production type items. The user enters the top level quantity required, and the computer automatically determines the amount required for each line item factoring in past usage data and then automatically places the order with established vendors.

- General contractor — A spinoff of the engineering services omnibus contract. A contract would be established with a prime contractor who has a team of vendors (subs). Each different major commodity group would have its own prime contractor. The customer would place an order with the prime, who would determine the best price from his vendor team and deliver the item to customer.

- Commodity method — An expansion of the qualified bidders list (QBL) process currently being used for some metal parts, applied globally to all commodity groups. Solicitation would only be among qualified vendors that meet an established predefined set of quality and performance criteria. Award would be on a best value algorithm instead of low bid.

- Partnership method — Establishing agreements with a single provider (partner) for a given commodity group and ordering all items from that partner.

- Outsourcing — Contracting out the procurement function to another commercial or government agency with predefined metrics that would have to be met.

- On-line catalog — Having electronic vendor catalogs available allowing the customer to place an order directly with the vendor through an Internet web page.

- Bartering — Trading of goods or services in exchange for excess material or equipment. (This idea came from the Forest Service where a "scrounger" is used to trade items that the Forest Service no longer needs for items that are currently needed). Note: This method did not meet the cut because of limited application and was not considered for further evaluation.

We then proceeded to rank and score each prototype method using the following criteria:

Critical

- Time to implement
- Cost to implement
- Ease of implementation
- Will customers like it?
- Will stakeholders like?
- Will it achieve the stretch goals?

Important

- Does it fit our business?
- Is it flexible/adaptable to the future?
- Will suppliers accept it?
- Return on investment/payback period
- Cost to operate

Other

- Number of people required to operate
- Adaptable to other field stations
- Amount of training required

Each prototype method was given a rating of one to seven points for each factor (seven being the best) by consensus of the team members. Results were tabulated and are shown in Table I. After rearranging the results by total score, there was a natural breakpoint after the three top-rated prototypes which were the bankcard method, the commodity method, and the partnership method. The team then flow-charted and discussed these three processes in more detail.

Table I. Prototype Ratings

Method	Time	Cost	Ease	Customers	Stakeholders	Stretch goals	Fit business	Flexible	Supplier	Return on investment	Operating costs	No. of people	Adaptable	Training	Total
Commodity	4	4	6	5	7	3	7	7	6	5	4	1	6	1	66
Catalog	2	2	5	6	6	6	2	4	3	2	3	5	5	5	56
Auto ordering	1	1	2	4	2	7	1	1	4	1	2	4	1	7	38
Partnership	5	5	3	3	4	4	3	6	7	6	6	6	2	4	64
Outsourcing	6	7	1	1	1	1	6	2	1	7	7	7	3	6	56
General contractor	3	3	4	2	3	2	4	3	5	3	5	2	4	2	45
Bankcard	7	6	7	7	5	5	5	5	2	4	1	3	7	3	67

Partnership Method: The flowchart for the partnership method is shown in Figure 4. This process involves procuring items from a single vendor, one with whom we establish a long relationship and start to view as a business partner. Vendors would have to meet best value criteria before being selected as an Indian Head partner. The partnership method works best for items that involve a high number of requisitions, are relatively low-risk items, and are off-the-shelf goods and services. Examples include lumber, construction materials, and office supplies. Some characteristics of this method are that it reduces stock level and inventory requirements; the partner maintains much of the procurement data (e.g., usage rate, receipt confirmation); delivery is directly to the job site or office; the buyer would be located where the process is best supported; and the customer would only

be required to make one data entry into the automated supply/financial system. Because of the expected quick delivery time (2 days or less), the item will be receipted in our automated financial/supply system before it is actually received. In time, this process should become easier to use than the bankcard process.

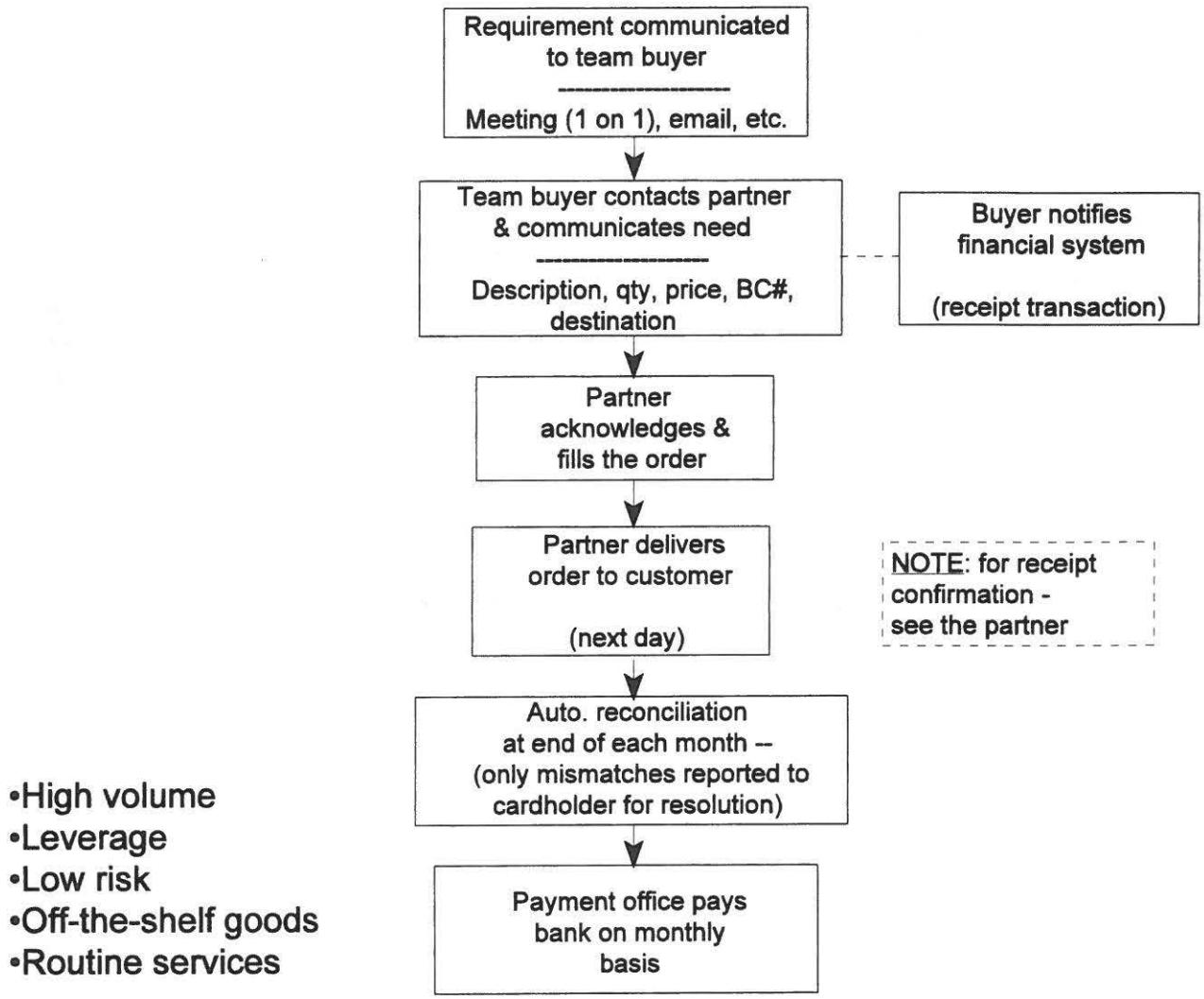


Figure 4. Partnership Method

Commodity Method: For groups of items or services that are more complex or require custom designs, the commodity method, shown in Figure 5, would be used. Items such as metal parts, automated data processing (ADP) equipment, and chemicals could benefit from this process. Purchase agreements would be established with qualified suppliers that represent the best value for Indian Head. Basically this method is an expansion of the QBL currently being used to buy some metal parts. There would be limited competition among qualified suppliers so that they would be bidding on a level playing field as opposed to "bidding against the world." As with the partnership method, these agreements would take advantage of leveraged buying, and prompt payment discounts would be negotiated. An important aspect of both the partnership and commodity methods is that our buyers will be buying "smart." They will know their commodity and the market forces involving that commodity (price, suppliers, quality parameters, etc.).

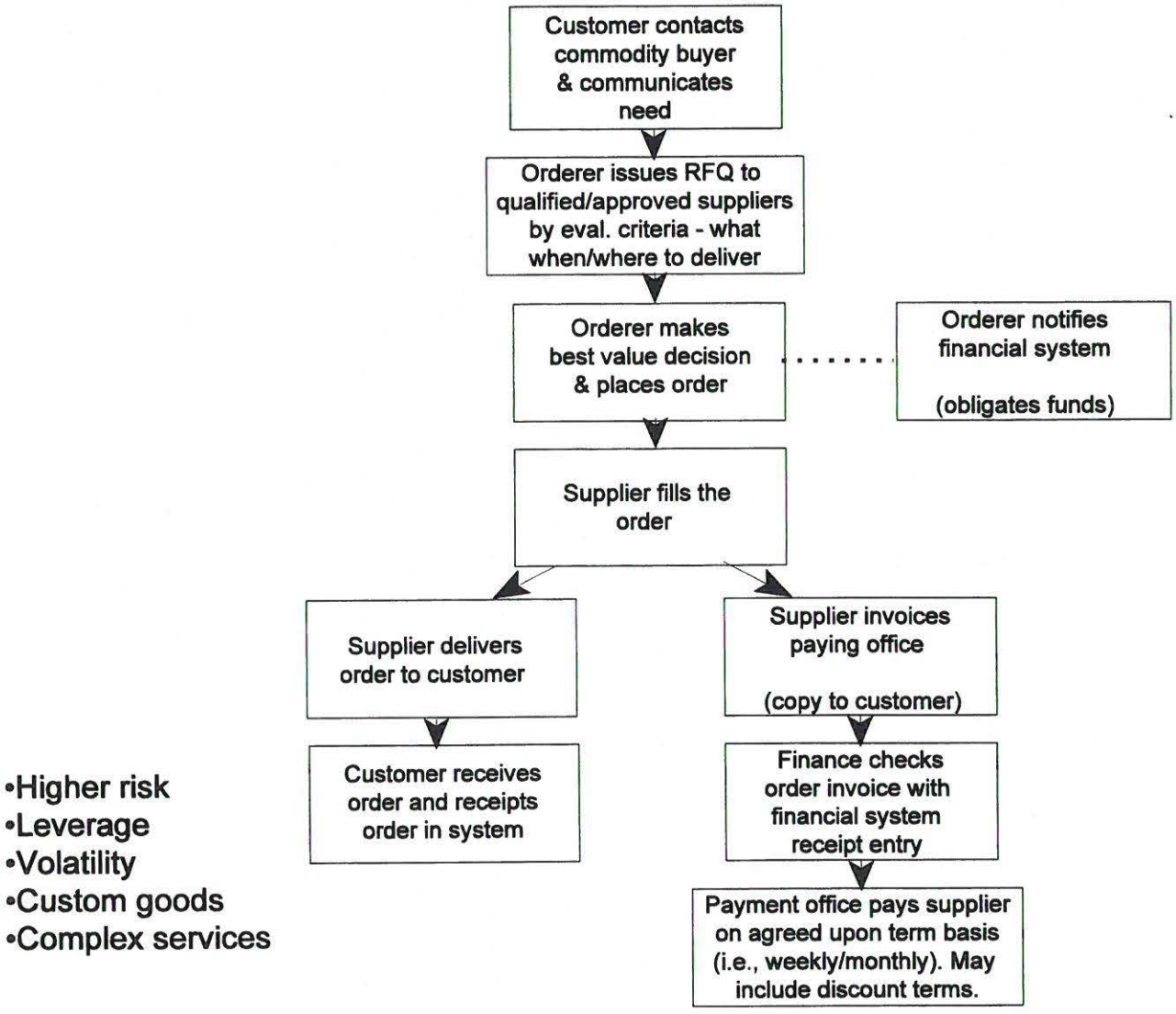


Figure 5. Commodity Method

Bankcard Method: The bankcard will continue to be used for low-risk, low-volume miscellaneous types of items, which do not present an opportunity for leveraging. However, the current bankcard process will be streamlined and automated as shown in Figure 6. Unnecessary approvals will be eliminated, the dollar thresholds will be raised, and automatic reconciliation of billing invoices with bankcard requisitions will be established, which will make the current bankcard process virtually paperless and much easier. There would be a one-time data entry after the item is received to reduce disputes and errors due to shipping charges and/or sales tax. We considered this a low-risk decision because of the quick delivery times on bankcard buys. During interviews with bankcard holders, it was found that most cardholders liked using the bankcard, but the cumbersome process approvals, numerous ILSMIS entries, and reconciliation paperwork at the end of each month placed unnecessary burdens on the cardholder. Therefore, the RAP Team decided to keep the method, but improve the process.

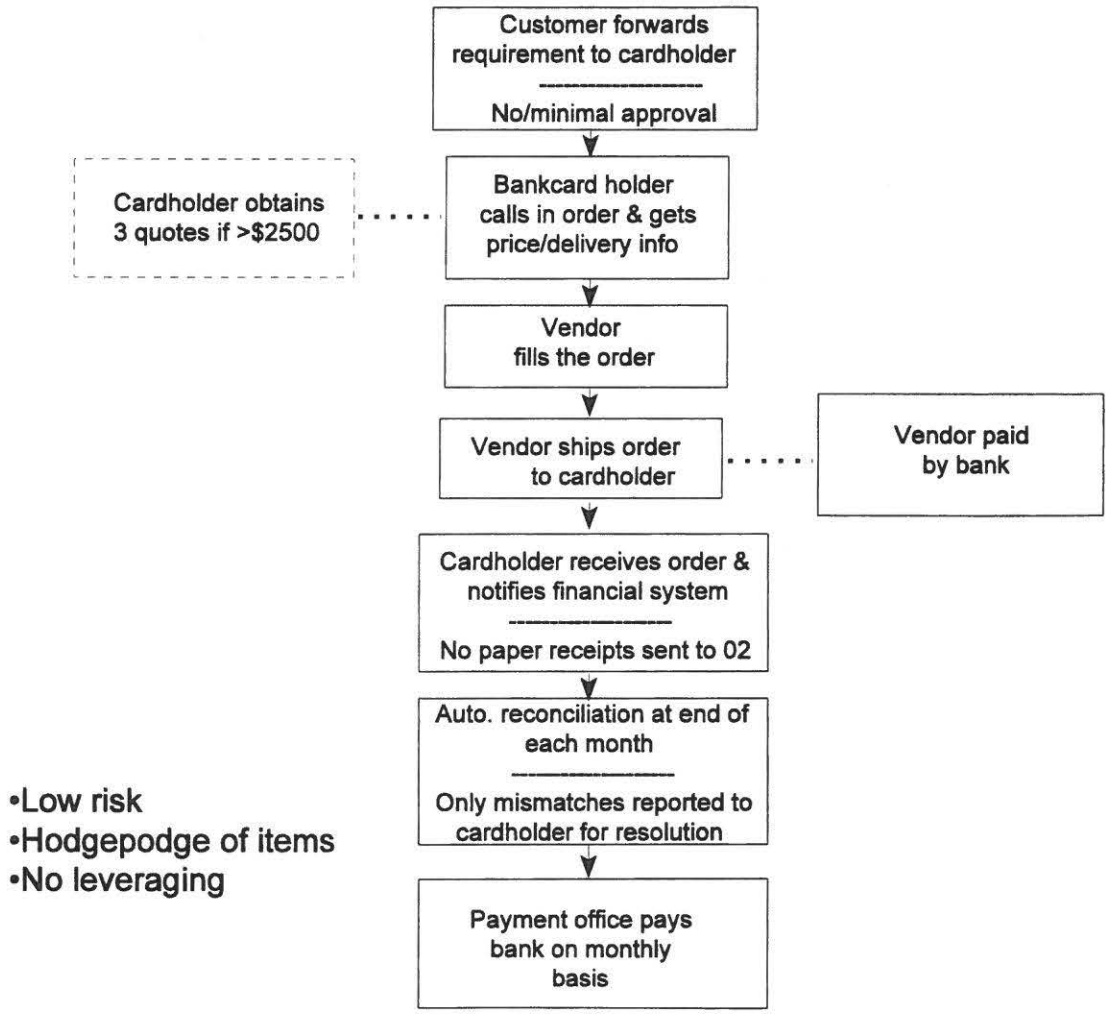


Figure 6. Bankcard Method

Summary: All three processes share the following characteristics:

- They involve internal trust.
- They build motivation for high vendor performance.
- They create a win-win situation for Indian Head and suppliers.
- They involve up-front corporate business planning. Indian Head needs to make acquisition part of the strategic planning process.
- They capture value-added services (i.e., cut to length, collection of scrap or waste material, etc.).
- Delivery is directly to the customer.
- Award and renewal of purchase agreements are based on the vendor's *demonstrated* quality and performance.

"Walking the Wall"

As a reality check, we then conducted a series of group interviews with customers and stakeholders of the current process to get their feedback on the new processes. We posted the flow charts for the new processes on a wall and "walked" each group through the proposed steps, giving the groups a chance to ask questions and offer ideas. These group sessions were larger than the customer interviews conducted during Phase I. We originally tried to structure mixed groups of customers and stakeholders across the entire process with about 10 to 12 people per group. However, because of scheduling problems, we conducted several morning and afternoon sessions and interviewed those individuals who were able to attend. Common themes that emerged from these interviews were—

- Overall, they liked the redesigned processes.
- Rules and regulations will be a big barrier.
- Trust is an issue.

  — Will management trust employees (e.g., to do a one-time financial system entry)?
  — Will managers trust employees to do away with approvals?

- Individuals interviewed did not recognize the change they personally would have to make.
- The overall feeling was that Indian Head could not be like private industry because of the rules and regulations.
- The process needs to be flexible to accommodate expiring funds.
- Major culture change will be needed.

We realized that for the business process to change, Indian Head's corporate environment would also need to change. Therefore, the team revisited each element of the reengineering wheel discussed in Phase II in regards to where we are now and where we need to be. This is graphically summarized in Figures 7 and 8. Specific changes that need to occur in the areas of jobs and organizational structure, technology, beliefs and behaviors, management systems, and culture are outlined in Appendix C.

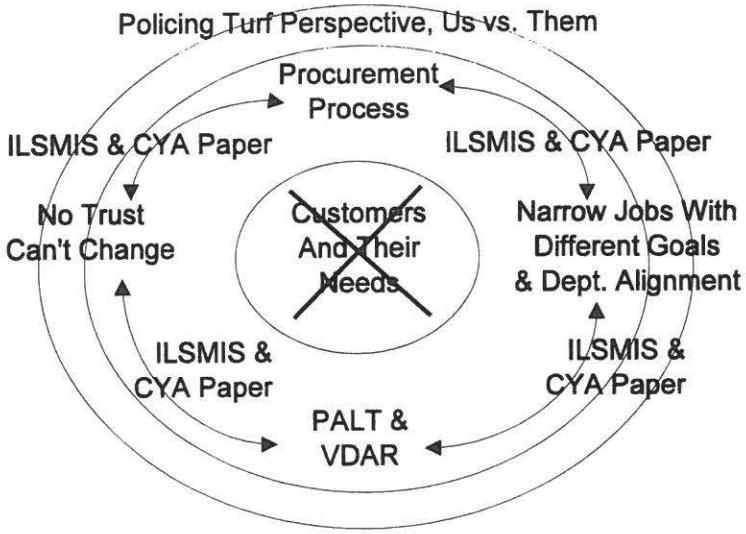


Figure 7. What Needs to Change

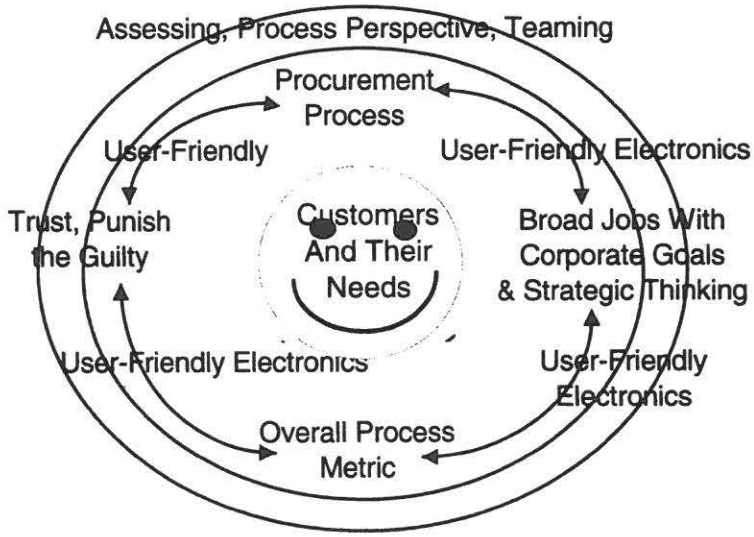


Figure 8. What Our Wheel Needs to Look Like

Finalizing the Data

The RAP Team then reviewed the procurement data from calendar year 1995 to determine the following:

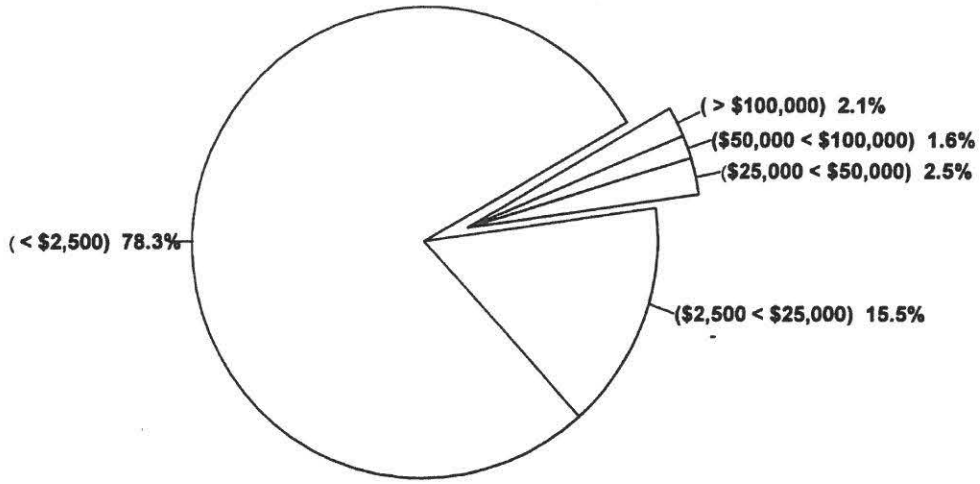
- What we are buying
- Where the work is being generated
- The percentage of non bankcard transactions in various dollar ranges, by—
  — Number of requisitions
  — Percentage of procurement dollars spent
- The number of bankcard transactions per month and average monthly dollar value.

Review of the bankcard data showed that—

- There are approximately 12,000 transactions per year totaling $6 million. This averages to 1,000 transactions per month at $500,000 per month.
- The number of disputes was very small, less than 4%.
- The current bankcard transaction cost was estimated to be about $75 (actual data does not exist to measure cost). Most of the process cost is on the back end of the process during monthly reconciliation of cardholder statements, which can take over an hour.

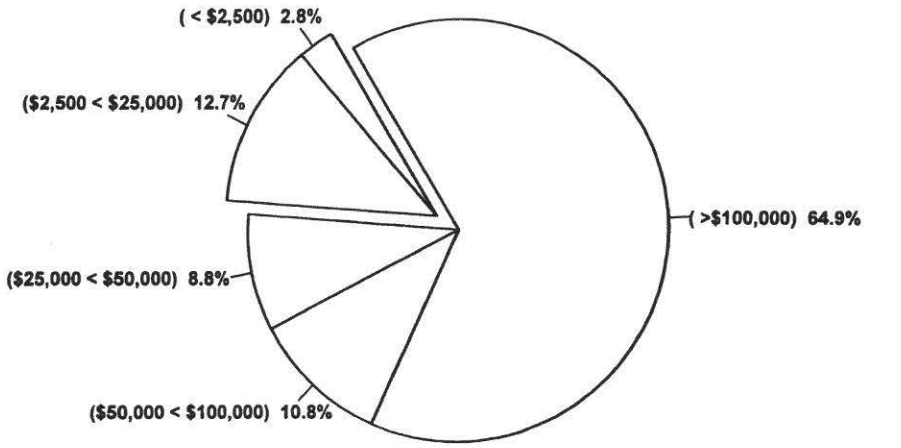
Procurement data for non-bankcard/non-pass-through requisitions for calendar year 1995 are shown in Figures 9 through 12. From these data, we found that—

- 78.3% of the total number of requisitions were less than $2,500 and these accounted for only 2.8% of the total procurement dollars spent.
- 93.8% of the total number of requisitions were less than $25,000 and these accounted for only 15.5% of the total procurement dollars spent.
- 2.1% of the total requisitions exceeded $100,000 (the new simplified acquisition limit) and these accounted for 64.9% of the total procurement dollars spent.
- 60% of the total number of requisitions generated on station were from six departments.
- The Supply Department generated 22.5% of the number of requisitions; the majority of this was for replenishment of stock items.
- 60% of what we buy falls into nine Federal supply groups.
- The average requisition process cost was estimated to be $240 (6 hours times $40 per hour). (Again, actual data other than PALT times does not exist to adequately determine process cost.)



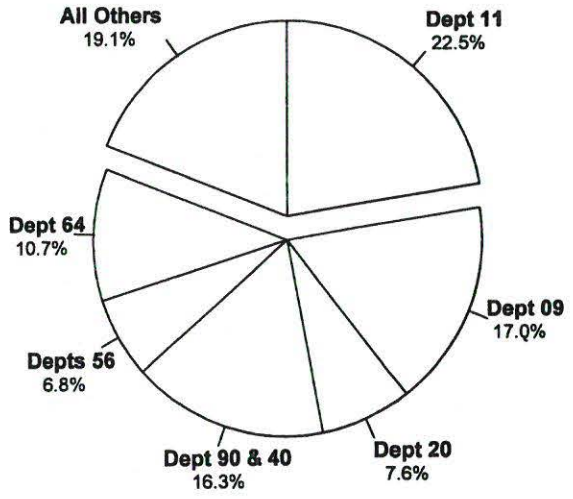
Non Pass-Through/Non Bankcard
Based on CY 95 Data

Figure 9. Procurements by Number of Requisitions



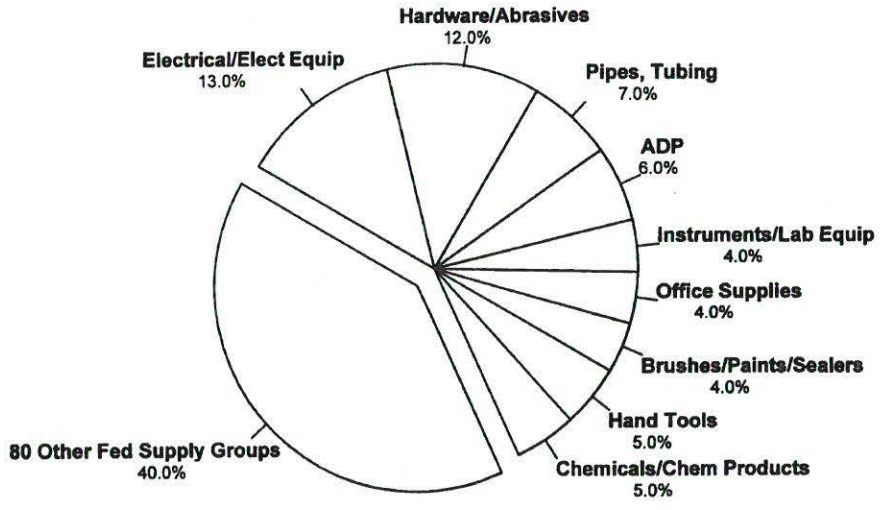
Non Pass-Through/Non Bankcard
Based on CY 95 Data

Figure 10. Procurements by Dollar Value



Based on CY 95 Data

Figure 11. 60% of Requisitions are Generated by Six Departments



Based on CY 95 Data

Figure 12. Nine Federal Supply Groups Comprise 60% of What We Buy

(1) We spend a lot of time and effort buying things of small dollar value.

(2) There may be some efficiency gained by decentralizing buyers into the departments generating most of the work.

(3) Leveraged buying appears to be feasible for some commodity groups of items.

After reviewing the data that were collected on what we buy (the raw data sorted by Federal supply group can be found in Appendix D) and rearranging it into somewhat larger categories, it was determined that the majority of the items purchased at Indian Head comprise eight main commodity groups.

Commodity Groups

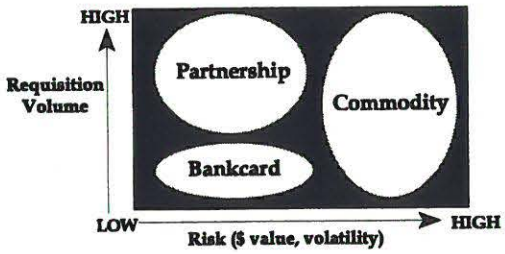
(Based on CY 95 Data)

Furniture Books/Clothing Office Supplies	ADP Communications Alarms
Electrical Supplies Electronic Equipment	Chemicals Chemical Products
Lumber Construction Materials Misc. Hardware Items	Fuels, Lubricants, Ores Oils/Waxes
Metal Parts	Instruments Lab Equipment

According to the data, the three new processes should initially capture about 80% of the total number of requisitions generated, which accounts for 60% of the procurement dollars spent. The RAP Team used the data as a starting point with the expectation that these percentages would increase as knowledge and experience is gained during implementation. It was also felt that these initial estimates should be reassessed when the 1996 procurement data are available.

At this point, we formulated a strategy based on leveraged buying practices common in private industry. The following chart shows the three top-rated processes and how each one fits into an overall procurement strategy in terms of risk and volume. These three processes occupy three distinct niches that represent where the majority of our procurement time and effort is being spent.

Procurement Processes Occupy Three Nicl



The bankcard method would continue to handle low-volume, low-risk items, which do not present an opportunity for leveraging. The partnership method would be for off-the-shelf goods and services that generate a high number of requisitions and are relatively low risk. The commodity method would be for groups of items and services that are more complex or require custom designs for which it would be beneficial to have a selection of several qualified vendors.

The RAP Team felt that if the procurement process were reengineered and simplified procedures were implemented stationwide, not only would customers have more control over what they buy, but the shear volume of requisitions having to go through the 100-step current process would be dramatically reduced. Most importantly, product discounts from leveraged buying could be realized by grouping common items together and buying from a single provider whenever it makes good business sense. If this can be accomplished, it will give experienced buyers more time to spend on the unique requirements and complex engineering services/R&D type contracts which are vital to Indian Head's business.

Developing Recommendations

In addition to providing the Acquisition QMB with a reengineered procurement process using any one of three new distinct process options developed by the team, we wanted to provide a road map on how to implement the changes. From the eight main commodity groups mentioned previously, it was decided to do a pilot test using three of these groups during the implementation phase. The three that were selected for the pilot test were ADP equipment, construction materials, and chemicals. It was felt that these three groups captured a good cross section of customers and stakeholders to test the new process, they presented a quick payback opportunity because of the volume and dollar value of the procurements involved, and subject matter experts were readily available to support the implementation phase. The recommendations consisted of forming three pilot teams, an implementation team, and proposing a new procurement organizational structure.

The role of the pilot teams was defined to be as follows:

- Establish vendor selection criteria.
- Establish best value algorithm.
- Establish vendor performance metrics and vendor report card.
- Conduct periodic vendor meetings.
- Create a feedback resolution loop to implementation team.
- Review commodity groups and recommend any changes.
- Establish agreements (both vendor and Indian Head responsibilities, expectations, roles).
- Establish a qualified vendor list for each commodity group.

- Decide how to assign procurement method to be used for the commodity group.
- Determine opportunities to consider that are specific to the commodity group such as value-added services.

The proposed membership and specific considerations for each pilot team are provided in Figures 13 through 15. Pilot team members were recommended based on their technical knowledge of the commodity area for the pilot study, their openness to change, and their proven determination to get the job done. We tried to create cross-functional teams to represent the major departments that would be involved in the process change. Each pilot team has its own buyer so that we could start to team the people who generate the requirement (technical side) with those who fulfill the requirement (support side).

- 4,200 req'ns; $1.9M
- *Lumber partnership*:
  - Cut to length
  - Delivery to job site
  - Return of excess material and/or scrap
- Consider use of DISC for lumber (*new info*)

- *Pilot Team*:
  - ***09***: Janet Coulby
    Glennda Taylor
  - ***11***: Cindy Bowie
  - ***20***: Bob Tyo

Figure 13. Pilot 1: Lumber/Construction Materials

- ***Chemicals via commodity agreement***; 766 req'ns, $1.5M (FSG 68)
- ***HMX/RDX/AP, etc., via partnership***; ??
- ***Unique characteristics***:
  - Vendor takes residue (re-blend and reduce haz. waste stream)
  - Specifics relative to chemicals (MSDS, AUL, shelf life)
- *Pilot Team*:
  - ***04*** : Karen Bonnin
  - ***11*** : Patsy Kragh
  - ***20*** : Bonnie Barger Tyo
  - ***30*** : Tracy Arnold Berrios
  - ***90*** : Jean McGovern

Figure 14. Pilot 2: Chemicals

- ***Hardware/software/ network components via commodity agreement***; 1,274 req'ns, $3.5M
- ***ADP repair via partnership***, 118 req'ns, $32.5k
- Specifics:
  - Life-cycle mgt. moved from line item level up
  - Standardiz'n & corp. procurement strategy (incorp. from ADP council policy)
  - Market trends/pricing
- *Pilot Team*:
  - ***11***: Michele Gilroy
  - ***30***: Joe Sferrella
  - ***56***: David Moon
  - ***64***: Billy McClure
  - ***80***: Jean Silverstone

Figure 15. Pilot 3: ADP

To help management pave the pathway for change, we decided to recommend a separate implementation team with a full-time leader. The implementation team would report to the Acquisition QMB, would be empowered to make decisions, and would focus on the overall process infrastructure for guidance and success. Membership would comprise representatives from comptroller, corporate operations, supply, engineering, and legal counsel. Specific responsibilities and membership of the implementation team are listed in Figure 16.

- Full-time leader
- Focus on process infrastructure & overall guidance & success
- Empowered to make decisions
- *Implementation Team*:
  - ***02***: Susan Hayes
  - ***05***: Donna Dancausse
  - ***11***: Penny Kennedy
  - ***50***: Don Burtchette
  - ***56***: Vince Pasquale
  - ***64:*** Stan Moore
  - ***OC***: Liz McIntyre

- *Responsibilities*:
  - Establish overall metrics
  - Town criers of effort
  - Changes in general
  - Expand pilots (go global)
  - Work with pilot teams (level playing field)
  - Review '96 data & adjust as nec.
  - Drive bankcard changes
  - Develop simple info (1 page max) to let customers know which mechanism to use, who to call, etc.
  - Move Indian Head towards "visionary" org. structure
  - Waivers to allow changes

Figure 16. Implementation Team

Because the RAP Team felt that form, fit, and function go hand in hand, a revised procurement organizational structure was proposed based on a model from the IBM benchmark visit. The proposed structure consists of a Procurement Executive Council and commodity teams as shown in Figure 17.

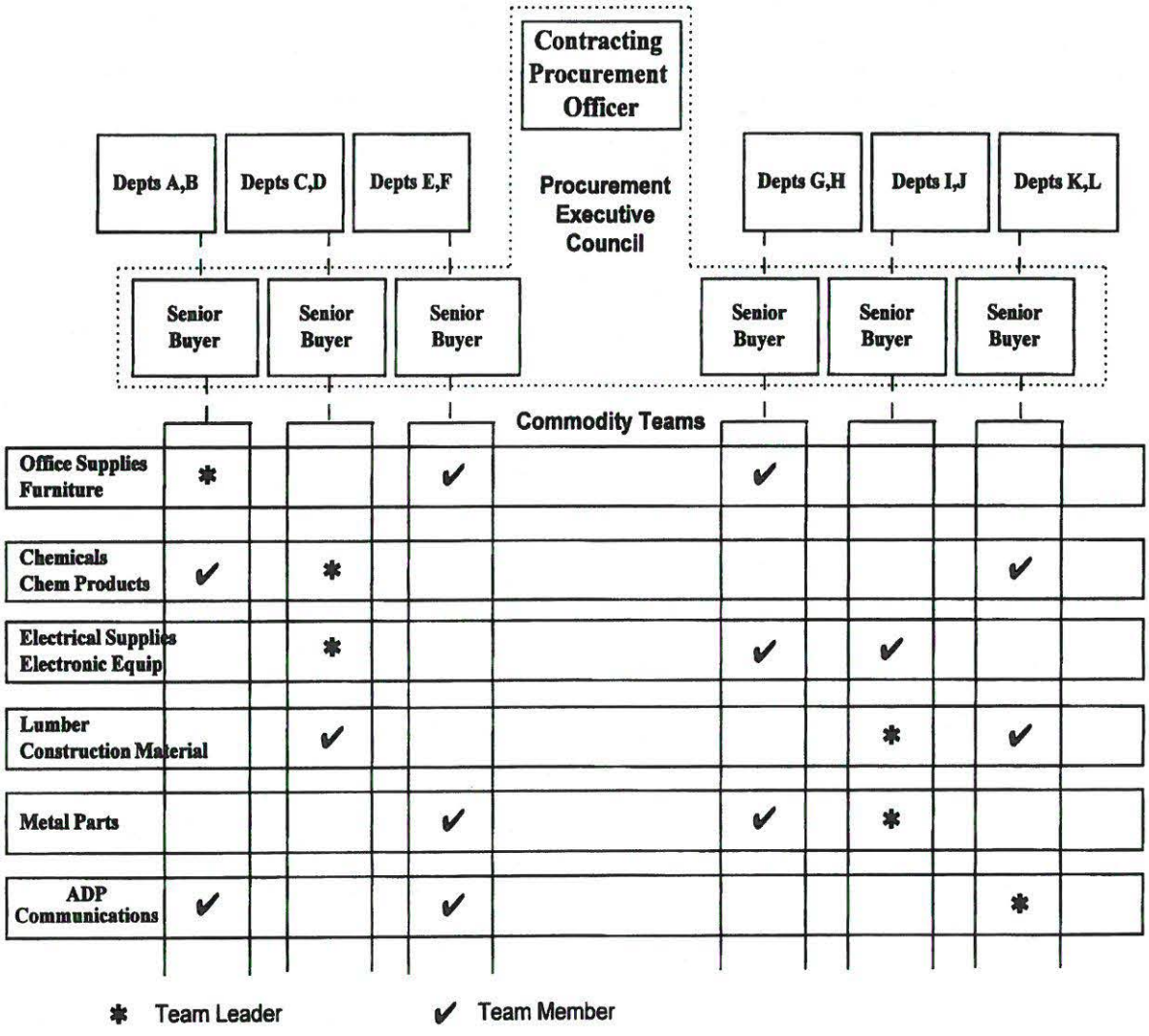


Figure 17. Revised Procurement Organizational Structure

The Procurement Executive Council—

- Comprises the contracting officer, senior buyers, technical advisors, QA consultants, etc.
- Reports to Indian Head's Command.
- Adopts the role of the implementation team.

- Interfaces with the Acquisition QMB or Indian Head's Management Team.
- Is responsible for integrating the Indian Head business plan into procurement methods and training.
- Maintains overall process metrics.
- Provides each department with a senior buyer as a POC who would be responsible for knowing/fulfilling the needs of that department.
- Serves as mentors to commodity teams to collect lessons learned, maintain centralized data, and ensure cross communication between commodity teams.
- Processes unique buys (the 20% not captured by the reengineered process).

Commodity teams—

- Are composed of a full-time buyer and technical advisor with one to four part-time members from departments that are the primary users of that commodity (size of team will vary according to workload).
- Have members from user departments (collateral duty).
- Report to the Procurement Executive Council.
- Adopt role of the pilot teams.
- Have a team leader which can be anyone on the team.
- Are physically located where it best supports the process.
- Are responsible for best value decision criteria, market research, supplier metrics, supplier relationship, and resolving process/quality problems.

The benefits of the proposed structure are as follows:

- It is flexible; can be structured on a department or program level.
- It promotes teamwork between organizations and between technical and support personnel.
- It promotes value-added jobs.
- It promotes "smart" buyers that are experts in their commodity area.
- It focuses on process metrics and leveraging.
- It promotes better planning and informed decisions based on a corporate business plan.

The RAP Team then estimated the first year cost savings for implementing the new process, summarized below.

Tangible savings:	
Personnel reductions	$760,000
Leveraging discounts	$2,000,000
Restructuring costs	($25,000)
Contractual costs	($100,000)
	$2,635,000
Intangible savings:	
Bankcard process improvements	$600,000
Requisition cost improvements	$3,000,000
Three pilot teams	($150,000)
Implementation team	($180,000)
Five remaining commodity teams	($165,000)
	$3,105,000
Estimated savings:	$5.7 million

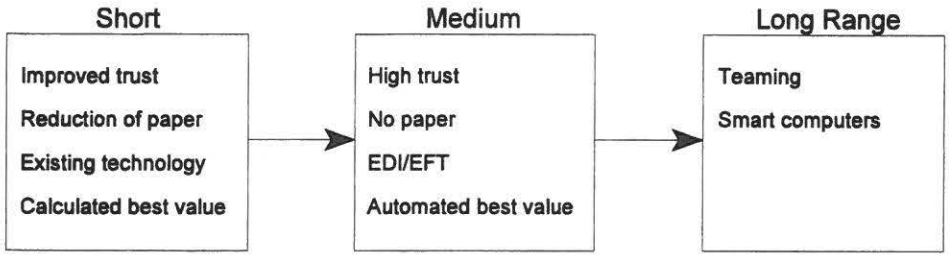
Additional information on how we calculated each line item can be found in Appendix E. The bottom line is that we estimated approximately $5 million could be saved in the first full year of implementation and $2 million each year thereafter depending on the volume of business conducted, funding levels, and getting an exemption from several statutes and procurement regulations. The cost savings are divided into product savings (tangible), which are mainly derived from discounts obtained through leveraged buying power, and process savings (intangible), sometimes referred to as cost avoidance, mainly derived from implementing the process improvements and automation. There would also be a one-time startup cost of approximately $100,000 for contracting support for programming changes to the ILSMIS system, computer upgrades, and other miscellaneous requirements.

We also realized that there would be other benefits for which we could not estimate an actual dollar value. These were listed as follows:

- ILSMIS avoidance cost (fewer entry times)
- ILSMIS performance improvement (less system strain)
- Reduced stock and issue (saves transportation, vehicle maintenance, and warehousing costs)
- Quicker HAZMAT procurement (saves disposal costs and improves use of shelf-life items)
- Expert's time better spent (versus approving individual requisitions)
- Bankcard holder's time better spent
- Approximate 50% reduction in disputes (bankcard)
- Focus on larger dollar items (tend to be schedule drivers)
- Better planning (can obligate funds quicker)
- Development of commodity experts (appropriate strategy relative to the market)
- Increased ability of Indian Head to buy for other organizations
- Less secretarial time (stocking of supply cabinets)
- Paper reduction
- Reduction in number of billing invoices received/processed.

Transition Plan

Realizing that implementing these changes would not happen overnight, we decided to recommend a three-phase approach. We prepared a list of short-, medium-, and long-range plans to serve as an action item list to guide the implementation team. The transition from one phase to the next is represented in principle by the following:



The medium- and long-term actions can be found in Appendix F. The short-term action items are listed here for convenience.

- Review and eliminate non-value-added forms.
- Start waivers.
- Nullify Indian Head prohibitive instructions.
- Eliminate unnecessary bankcard approvals.
- Review and eliminate or reduce departmental internal approvals.
- Create contract for development of ILSMIS interface.
- Warrant buyers in departments (training).
- Implement vendor prompt payments.
- Implement bankcard auto-reconciliation.
- Train more cardholders.
- Integrate and synthesize acquisition into strategic plan.
- Identify training needs.
- Give EDI/EFT demo.
- Give ILSMIS access for selected screens to customers.
- Reduce current stock.

From our research and contacts/visits with other government activities, the RAP Team listed eight major laws/regulations that would require a waiver or exemption to effectively implement the changes of the reengineered processes. The rules and regulations are listed in Table II. The NASA report (*Report and Recommendations of the Small Purchase Reengineering Team* dated September 16, 1994) and interviews with buyers and legal counsel were the basis of this list.

Table II. Rules and Regulations to be Waived or Exempted

Law/regulation	Citation	Problem/roadblock	RAP Plan
Competition In Contracting Act	Public Law 10 USC 2304 FAR 13.106, 41 USC 253	Promotes full and open competition for all contracting actions	Limit to vendors based on performance history
Vendor Rotation	FAR 13.106(a)(2) and (a)(5)	Distribute equally among qualified suppliers, including two not previously in RFQ	Limit to vendors that meet selection criteria only
Small Business - Small Purchase Set Aside	FAR 13.105, 19.501(f) Public Law 95-507	Limits all actions under $25,000 to Small Business	Use vendors meeting selection criteria regardless of size
Posting of Solicitations	FAR 5.101(a)(2) Public Law 99-591	Actions over $10,000 but less than $25,000 must be publicly displayed	Waive requirement
Reasonable prices	FAR 15.805-2(b)	Price analysis must be performed	Do price analysis only on an as-needed basis, not on every order
Mandatory Sources of Supply	FAR 8.4	Mandates buying of certain commodities from government sources	Change wording from mandatory to suggested sources
Ratification of Unauthorized Commitment	Public Law 85.804 FAR 1.602-3	Defines an unauthorized commitment as an action by an unwarranted individual	Redefine the term to mean an action executed without funding
Service Contract Act of 1965	Public Law 41 USC 351-357 FAR 37.107	Requires wage determinations for actions over $2500 for blue collar professions	Waive this requirement, not cost effective

The plan is to try to get an exemption to these rules and regulations based on the station's status as a reinvention lab. Otherwise, individual waivers will need to be processed. The two major ones on the list are CICA (Competition in Contracting Act) and Small Business Set Aside. The pilot study and commodity team structure can proceed without an exemption or waiver, but the time to get the agreements in place will take longer using current solicitation methods. A waiver or exemption will enhance the process and help drive the culture change needed. The bottom line is that we will not be able to achieve any significant cost reduction and delivery performance improvement unless there is some relief to the cumbersome federal acquisition rules and regulations.

It would be appropriate to point out here that the RAP Team was never a proponent of sole-source procurements as a major method of conducting business. As previously stated in the fundamental principles of our vision, "competition is healthy." However, we want to compete smartly using proven suppliers where low bid is not the main driver. Our vendor database should consist of suppliers who have met a set of predefined qualification criteria and have demonstrated a track record of good performance. Selection would be made on best-value determinations. Two concepts we would like to see implemented on a wider scale are (a) maximum practical competition, where the local contracting officer has the authority to determine the number of offers that will be accepted to insure reasonable competition, and (b) prequalified offeror, where only proven suppliers are allowed to participate (similar to our proposed commodity method).

We then prepared a schedule for Phase IV to pilot test and implement the new processes. The proposed schedule is very optimistic (this was done intentionally to keep things moving) and requires an exemption or waiver from the previously cited statutes and procurement regulations to remain on schedule:

- Form implementation/pilot teams and start waiver process ..... 1 Sept. 96
- Stand up pilot teams ..... 1 Oct. 96
- Pilot teams prepare solicitation packages ..... 60 days (Oct.–Nov. 96)
- Waivers approved ..... 1 Dec. 96
- Solicitation/award ..... 90 days (Dec. 96–Feb. 97)
- Pilot process ..... 90 days (Mar.–May 97)
- Evaluate results ..... 30 days (Jun. 97)
- Start full implementation ..... Jul. 97

Closing Actions

Since this was the first reengineering project for the Indian Head Division, we wanted to leave our steering committee (the Acquisition QMB) with information that we considered to be important not only for this project, but for future reengineering efforts. We concluded Phase III by evaluating the status of the quick hits that were previously submitted to the Acquisition QMB, preparing a list of lessons learned, and developing a list of metrics to drive the implementation phase. A detailed discussion of the lessons learned can be found in a separate section of this report. The status of the quick hits and the metrics are provided here:

No.	Title	Status
1	Bankcard prompt payment discount	Approved/implemented
2	Vendor prompt payment discount	Approved/to be implemented
3	QA acceptance items on bankcard	Approved/to be implemented
4	Remove 30-day restriction on bankcard	Approved/to be implemented
5	Start synopsis earlier (in parallel)	Approved/implemented
6	Allow buyers to use customer quotes	Disapproved

All the quick hits were approved and were either implemented or are in the process of being implemented with the exception of quick hit number 6. The reasons given for disapproval were that information provided by the customer was sometimes inconsistent, the buyer needed to take other factors into consideration when placing some orders, and sometimes the buyer groups multiple items into one purchase order, which would cause pricing to change. While the RAP Team still thought it was a good idea, we did not pursue it because of other more pressing priorities and decided to ask the implementation team to revisit the issue during Phase IV.

As far as the RAP Team could determine, initial reactions by bankcard holders to implementing quick hit number 1 were favorable. There was some feedback that it was causing the cardholder more work, but when the reason for the change was explained along with the amount of the cost savings involved (incentive payment) and the planned changes to make things easier, almost everyone agreed with it. They were also pleased to hear that quick hits numbers 3 and 4 would be implemented. This was another confirmation of the importance in getting the word out to everyone and publicizing what was being changed and why. Overall, we considered the strategy of using quick hits to be a success and very useful as a driver for starting the change management process.

Last but not least, we finalized a list of metrics to gage the performance improvement and cost savings during implementation. We started with the stretch goals that were established during Phase I and expanded them based on what we considered to be significant factors in the acquisition process.

(1) Reduce process time.

— From up to 8 weeks to 2 days for off-the-shelf items
— From up to 7 months to 2 weeks for custom items

(2) Reduce process cost.

— By 80% for requisitions (from $240 avg. to $50 avg.)
— By 66% for bankcard transactions (from $75 avg. to ≤ $25)

(3) Reduce the number of requisition and invoices in each commodity area by 50%.

(4) Obtain a minimum of 5% to 8% price discounts on products in a commodity through leveraged buying.

(5) Reduce labor hour expenditures on payment resolution by 50% and reduce late interest penalties to zero.

A final presentation was given to the Acquisition QMB in July 1996. The RAP Team's recommendations and implementation plan were approved, and approval was given to proceed with the final phase of the project, which is expected to take 12 months to complete. The RAP Team then gave the presentation to senior management, and they endorsed the Acquisition QMB's decision to proceed with implementation. To communicate the process changes and implementation plan to all employees, we issued a special bulletin and wrote an article for the *Flash Point*. In addition, we prepared a video presentation which was shown over the local area network.

LESSONS LEARNED

We developed the following lessons from both "hard-learned" and enlightening experiences. The list is by no means conclusive and is in no particular order. In the interests of resource conservation and reading time, we limited the list to those lessons we believe will be most constructive to future reengineering teams.

- *Find a separate meeting room as soon as possible (and, of course, use it!).* In virtually no time, the team will develop tremendous amounts of data, some informative and some not. A separate, dedicated meeting room will allow the team to place flipcharts and other materials on the walls for easy viewing and reference. This saves lots of time, which would otherwise be lost in logistics and setup/teardown of temporary facilities. It also facilitates meeting scheduling, privacy, and autonomy from other jobs or functions and even provides a sense of identity for the team. We would suggest that, if possible, there be significant wall space and enough tables and chairs to conduct meetings for up to twenty people (some crowding is okay and even tends to reinforce the "team" environment).

- *Top management involvement and commitment is critical.* Even though this was not a huge surprise as all reengineering gurus and publications mention it, we found a constant challenge in obtaining and retaining top management involvement. We frequently discussed how to get them involved, how to keep them involved, how to effectively communicate our message to them, etc. It was quite interesting to note the development of our steering committee (as decision makers and leaders) along with that of our team. We found that occasional, appropriately timed formal presentations were quite effective in selling the team's effort and building motivation for change. However, there is no substitute for frequent interaction and casual, informal, working-type meetings on a regular basis to foster commitment, involvement, and support.

- *Start benchmarking early.* In following Texas Instruments' reengineering model, we did not begin hard benchmarking (setting up visits and detailed information exchanges) until the end of Phase II. We found that the time required to make the appropriate contacts and plan visits was greater than anticipated. We would heartily recommend starting to benchmark (including visits) relatively early in the reengineering process (Phase I in TI's model).

- *Balance planning and execution.* It definitely helps to have a team of diverse individuals. Our RAP Team had one definite "lets-do-it" type and another "planner-extraordinaire" type. This balance wasn't always obvious, as there were some situations where we talked about what we wanted to do too much, but there were other times when we probably did not talk enough before diving in. Overall, for harmony, you need to balance the thinking and the doing.

- *Create a macro-schedule and monitor it.* For each phase of our reengineering effort, we developed a target completion date and a "deadline" date (which was the target date with some extra time added in). Part of developing credibility is being able to meet your milestones. If the reengineering effort is to succeed, such a precedent must be set early and maintained. In addition, keeping an eye on your target schedule helps you plan your work (just as with any job) and determine the appropriate time allocations for each task. Meeting the schedule is particularly important for implementation. There is no better way to alienate both management and stakeholders than to fail to implement when you say you will.

- *When mapping current process, do not get bogged down in details.* The TI model has Phase II dominated by mapping and learning the current process that is to be reengineered. We debated whether we should even attempt to map the current, broken process (especially considering we were going to destroy it and start over from a clean slate) and even did a brief pros-and-cons exercise. While we ended up doing it, we avoided excessive breakdown of the process flow to keep from getting bogged down in minor details. Such trivial issues are not very important to the reengineering effort and can take up inordinate amounts of time. After our team completed Phase III and prepared for handing off to the implementation team, we discussed the merits of mapping the current process. While we agreed that there were some drawbacks (mainly time-related), we also agreed that the benefits and general knowledge, additional networking opportunities, and full realization and appreciation of the ailments of the current process made Phase II well worth doing. Admittedly, we did not use any computer software to map the current process which may have made it easier, but we found it to be an eye opener for stakeholders to visually see the entire process on the wall and even help to construct it.

- *Resistance and support come from unexpected places.* This one sounds somewhat nebulous, but it just means that people are tough to judge. We found specific cases wherein those expected to be staunch supporters turned out to be roadblocks, and vice versa. The simple message is not to assume how people will react to changes despite how obvious their course may appear to be.

- *Do not underestimate the role of politics.* This lesson is particularly troublesome, since the learning comes at the most difficult time—when the new process is nearing implementation. During the time when things are rolling and momentum is building for change is when the big political roadblocks start to appear and to multiply.

- *Each quick hit needs a mentor to drive/implement the change.* We decided early on in our effort that the steering committee would be responsible for handling and implementing quick hits. However, unless the committee assigns a specific action to a specific person, the quick hit will likely turn into a not-so-quick hit. It is important for a single individual to mentor and drive the change for the quick hit to be truly quick and accomplish its mission of showing that change is happening for the better (important for both customers and stakeholders to view the reengineering team as "accomplishing" something instead of working in a vacuum for many months). We found quick hits to be a very successful method of getting change started.

- *Publicize what the team is trying to accomplish.* A crucial part of reengineering is spreading the news about the changes to take place. A process such as procurement touches almost everyone in some way, making nearly each and every employee a stakeholder. With almost 2,000 employees at Indian Head, we needed to take advantage of every possible media source, including messages on the lighted marquee board at the station entrance, special bulletins, articles in the station's monthly newspaper, and electronic mail updates. All of these, of course, merely supplement the personal interaction that is necessary to develop and nurture support. Our approach throughout the project was no secrets and no hidden agenda.

- *Reengineering team should work full time; part-time is difficult.* The main conflict resulting from part-time teams is the tendency to remain "loyal" to your previous/permanent job (which is understandable since you need to go back to it and are being evaluated on it). No matter how much you attempt to make the reengineering work primary, everyone realizes that the person signing your timecard is expecting your non-reengineering work to get done. Other issues include meeting and travel scheduling difficulties, prioritizing dilemmas, and possible "burnout" from the feeling that you're always rushed and needing to accomplish too much to get results for both jobs.

- *Celebrate "disrespect"—challenge the rules and question existing procedures.* Not much needs to be written here. Reengineering is about radical changes for dramatic results. It is just not possible to be truly radical without breaking a few rules. We found many examples of rules that had been in place so long, the reason for it had been forgotten.

- *Reengineering is just more fun than your regular job!* While some uncertainty and confusion existed initially, we quickly found that the reengineering team work was much more fun, interesting, and challenging than our regular jobs. Most jobs have fairly defined, established ways of accomplishing tasks. This reengineering assignment was unique in that we (sort of) knew the results that were expected of us, but realistically speaking had no idea of exactly how to accomplish them. While this can be somewhat daunting at times, it makes the accomplishments more personally rewarding and satisfying. Unfortunately, when you go back to your regular job, this becomes all too apparent!

CONCLUSION

Government procurement has grown into a costly, tedious, and cumbersome process that has outlived its usefulness. The once-needed regulatory control must be redefined and restructured. The Government cannot afford to continue procuring needed supplies and services in this manner. Some say that outsourcing this function is the answer. The RAP Team believes that reengineering is the solution.

Throughout this effort, "thinking out of the box" and putting aside the rules, regulations, and laws helped the team remain focused on radical changes. Through customer interviews, it was determined that customers want a process that is fast, accurate, cheap, and easy. The team believes that the solution involves leveraging. By grouping procurements by commodity on an activity-wide level, we can take advantage of leveraging discounts and reduce the total number of requisitions that are processed through the supply system. To obtain this benefit, we must reduce our supplier base. We need to utilize the best suppliers in each commodity grouping and work with them to build partnering relationships. The reasoning behind this philosophy is that if a supplier is a part of our team, he will strive to meet our requirements, he will know what our requirements are, and he will provide quality supplies, services, and customer service in an effort to retain our business.

With leveraging, partnering, and the use of the bankcard for payments, we believe that we can reach our stretch goals of two days for commercial off-the-shelf items and two weeks for custom parts/complex services. Of course, many of the rules and regulations will have to be waived to obtain this goal. The RAP Implementation Team has already begun the waiver process and will continue to pave the way for the pilot teams during their implementation efforts. When this is achieved, our vision for Indian Head's new look would be as shown below.

What's out	**What's in**
Reactive	Strategic
Stove pipe	Cross functional
Arms length	Strategic alliance
Short-term contracts	Long-term agreements
Lowest price	Best value
Organization	Process
Crisis mode	Planning
Paper and forms	Electronic communication
Policing	Trust
Individual procurements	Leveraging

In conclusion, the RAP Team found this project to be challenging and very rewarding in many ways. To those who may become involved in future reengineering projects, we wish you the utmost success in all your endeavors. Since reengineering involves radical change, we'd like to leave you with our definition of reengineering:

- When it's too difficult to fix it...
- Break it apart, throw it away, and start over...

Reengineer it!!!

GLOSSARY

Benchmark visit. A meeting with another organization to explore best practices.

Benchmarking. The continuous and systematic process of identifying, analyzing, and adapting best practices that will lead an organization to superior performance.

Customer. A user of the process.

Customer careabouts. Issues and priorities important to a customer.

ILSMIS. Industrial Logistics Support Management Information System. This is the electronic requisitioning system used by NSWC, Indian Head.

Leveraging. Obtaining price discounts over and above catalog pricing through higher volume purchasing power by grouping common items together (that are currently being purchased individually) into large buys usually with a single provider.

Metrics. Also known as performance measurement, a tool for objectively measuring a process or program to assess progress and results. Typical metrics include cost and cycle time.

Quick hit. An internal process change, usually recommended by customers of the process, that can be implemented quickly and easily which results in immediate cost savings. Main purpose is to drive the change management process and encourage ideas.

Stakeholder. An employee whose job is part of the process.

Stretch goals. The dramatic gains or improvements expected from the reengineering effort. As opposed to the incremental improvements typical of a continuous process improvement effort, stretch goals reflect an expectation of yielding results that are five to ten times better than the current state.

Walking the Wall. Basically a reality check of critiquing the new process model with customers and stakeholders to further develop and refine it.

Walking the Wheel. Analyzing the corporate environment in terms of culture, business processes, jobs and organizational structure, management systems, beliefs and behaviors, and technology.

Work-arounds. Undocumented shortcuts "around" established red tape procedures to get the job done quicker and easier.

Appendix A

INTERVIEW GUIDANCE

Exhibit A-1

PHONE CALL CHECKLIST

1. Introduction

- Who we are
- What we're doing
- Why we're calling

Focus: Purchasing
Procurement

Right Person

2. Focus on Indian Head Process

- Are you familiar with government procurement?
- Facts on Indian Head

— Categories by $

Small — below $50,000 — Takes (target) 30 days to award
Large — over $50,000 — Takes (target) 180 days to award

time = putting in requisition to vendor getting order

— Six Purchase Methods
Purchase orders
Bankcard

— Orientation/Organization
Commodity — ADP
— Electrical
Customer

3. How do you compare to Indian Head

* Categories * Metrics * Macro flow of their purchasing process
* Purchasing concept & boundaries

If Better Than Indian Head

* How did you get there? (Could go reeng. route)
* Benchmarking
* Documents to share?
* This is what we're considering, does it make sense?

If Same or Worse Than Indian Head

* This is our plan, does it make sense?

4. Closure

* Who would you benchmark for procurement?
* Are there reeng. POC's within your organization?
* Any other suggestions for us?
* Can we contact you again later?

Exhibit A-2

Customer: _____ **Date:** _____ **Code:** _____

CUSTOMER CARE ABOUT QUESTIONS

1. What types of things do you buy? How does the acquisition process affect you?

% bankcard=
% small purchase =
% contacts =

2. What do you like about the current purchasing process?

3. What don't you like about it? (Complaints/frustrations) Provide details as to why.

4. How long does it take for you to get what you need? How long should it take?

5. If you could change one thing in the process, what would it be? Ideal state? Any simple changes which would make your job easier?

6. How have you worked around the system to get the job done? Who helps you out?

Appendix B

QUICK HIT LIST

QUICK HIT LIST

Submitted to OMB

1. Take advantage of prompt pay discounts offered monthly on bankcard purchases
2. Take advantage of prompt pay discounts offered on Simplified Acquisition purchases
3. Allow items requiring quality assurance inspection to be purchased using the bankcard
4. Revoke policy requiring bankcard purchases to be received within 30 days after order placement
5. Synopsize before requisition submission
6. Allow customer obtained quotations to be used in official procurement process

Procedural Changes/Being Worked

1. Purchase hazardous material using the bankcard
2. Eliminate the need for a separation of function when using bankcard
3. Streamline overall bankcard process
4. Reduce required paperwork for Blanket Purchase Agreement orders
5. Eliminate required delivery date (RDD) field from requisitions
6. Automate technical data package contents
7. Automate Delinquency Letters
8. Program ILSMIS to sort requisitions by priority
9. Eliminate the need for duplicate Ozone Depleting Substances forms
10. Electronically transfer bankcard statements to cardholders

Controlled by Law, Regulation, Statute

1. Pay vendors immediately upon receipt of invoice
2. Adopt third party drafts for vendors that don't accept the bankcard
3. Consider prompt pay discounts in the vendor evaluation process
4. Raise bankcard threshold to $10k or higher; give cardholders warrants and certify them to do competitive procurements with minimal training requirements
5. Raise overall competition threshold from $2,500 to 10% of the Simplified Acquisition Process threshold
6. Waive requirement for Mandatory Sources of Supply
7. Eliminate the requirement to synopsize for sole source buys
8. Allow cash advances on the bankcard or American Express card for payment to vendors that don't accept the bankcard

Policy Changes

1. Provide incentives to reward good service
2. Clear up funding issues resulting from partial shipments or old open orders, to revert money back to original account holders

Appendix C

CHANGES NEEDED

Wheel Element	Current	Future	Specifics
Job & Organization Structures	Stovepipe	Cross Functional	Commodity teams don't report to either Supply or Customers. Report to Procurement Executive Council.
	Different Goals Reinforced by Mgmt	Corporate Goals With Strategic Thinking	Emphasize and reinforce that corporate goals > individual goals.
	Supply as Support	Acquisition as Strategic	Include in Strategic Plan. Publicize savings. Market service.

Wheel Element	Current	Future	Specifics
Technology	ILSMIS	User Friendly	Insert bridge between customer and ILSMIS. ($100K)
	CYA Paper	Value adding Dialogue	Focus on results. Do overall process metrics show improvement?
	Paper	EDI/EFT	

Wheel Element	Current	Future	Specifics
Beliefs & Behaviors	Policing	Trust	Eliminate/reduce line item approval(s). Establish within agreements delineating responsibilities (IH also).
	Punish the users	Punish the abusers	Negative confirmation as the rule of thumb. Be tolerant of honest mistakes. Take swift, fair action when misconduct does occur (IH and vendors).

Wheel Element	Current	Future	Specifics
Mgmt Systems	PALT	Overall Process Metric	Implementation team will develop. Metrics will capture all aspects, including IH, our vendors, and our interaction.
	VDAR & Dwg. Conformance	Customer Satisfaction	Pilot teams will develop. Cost, schedule, quality, service etc.
	PMR driven	Customer focused	May have to confront NAVSUP PMR.

Wheel Element	Current	Future	Specifics
Culture	Turf Perspective	Process Perspective	Establish commodity teams with reps from both Supply and Customers. Move from organizational alignment to commodity alignment to take advantage of leveraging.
	Us vs. Them	Teams	IH as an extended enterprise. Boundaries include our vendors.

Appendix D

WHAT WE BUY AT INDIAN HEAD (CY 95 DATA)

WHAT WE BUY AT INDIAN HEAD (CY 95 Data)						
Federal Supply Group	Description	Number of Req'ns	Percent of Total Req'ns	Total Dollar Value	Percent of Total Dollars	Average Value Per Req'n
10	*Weapons*	5	0.0%	$4,289	0.0%	$858
11	*Nuclear Ordnance*	1	0.0%	$96	0.0%	$96
12	*Fire Control Equipment*	5	0.0%	$4,952	0.0%	$990
13	*Ammunition & Explosives*	427	2.9%	$8,678,080	21.1%	$20,323
14	*Guided Missiles*	137	0.9%	$300,126	0.7%	$2,191
15	*Aircraft & Airframe Structural Components*	0	0.0%	$0	0.0%	N/A
16	*Aircraft Components & Accessories*	12	0.1%	$26,203	0.1%	$2,184
17	*Aircraft Launching, Landing & Ground Handling Equipment*	3	0.0%	$680	0.0%	$227
18	*Space Vehicles*	0	0.0%	$0	0.0%	N/A
19	*Ships, Small Craft, Pontoons & Floating Docks*	2	0.0%	$38,066	0.1%	$19,033
20	*Ship & Marine Equipment*	24	0.2%	$7,316	0.0%	$305
22	*Railway Equipment*	1	0.0%	$325	0.0%	$325
23	*Ground Effect Vehicles, Motor Vehicles, Trailers & Cycles*	2	0.0%	$12,615	0.0%	$6,308
24	*Tractors*	0	0.0%	$0	0.0%	N/A
25	*Vehicular Equipment Components*	8	0.1%	$100,775	0.2%	$12,597
26	*Tires & Tubes*	4	0.0%	$1,083	0.0%	$271
28	*Engines, Turbines & Components*	5	0.0%	$7,716	0.0%	$1,543
29	*Engine Accessories*	11	0.1%	$10,306	0.0%	$937
30	*Mechanical Power Transmission Equipment*	78	0.5%	$417,136	1.0%	$5,348
31	*Bearings*	29	0.2%	$11,665	0.0%	$402
32	*Woodworking Machinery & Equipment*	5	0.0%	$3,469	0.0%	$694
34	*Metalworking Machinery*	96	0.7%	$67,859	0.2%	$707
35	*Service & Trade Equipment*	11	0.1%	$45,828	0.1%	$4,166
36	*Special Industry Machinery*	101	0.7%	$461,993	1.1%	$4,574
37	*Agricultural Machinery & Equipment*	8	0.1%	$611	0.0%	$76
38	*Construction, Mining, Excavating & Highway Maintenance Equipment*	7	0.0%	$341,492	0.8%	$48,785
39	*Materials Handling Equipment*	15	0.1%	$16,768	0.0%	$1,118
40	*Rope, Cable, Chain & Fittings*	75	0.5%	$416,792	1.0%	$5,557
41	*Refrigeration, Air Conditioning & Air Circulating Equipment*	152	1.0%	$236,649	0.6%	$1,557
42	*Fire Fighting, Rescue & Safety Equipment*	107	0.7%	$275,559	0.7%	$2,575
43	*Pumps & Compressors*	109	0.7%	$487,108	1.2%	$4,469
44	*Furnace, Steam Plant & Drying Equipment; & Nuclear Reactors*	34	0.2%	$69,896	0.2%	$2,056
45	*Plumbing, Heating & Sanitation Equipment*	98	0.7%	$401,127	1.0%	$4,093
46	*Water Purification & Sewage Treatment Equipment*	4	0.0%	$4,747	0.0%	$1,187
47	*Pipe, Tubing, Hose & Fittings*	944	6.5%	$392,358	1.0%	$416
48	*Valves*	214	1.5%	$238,463	0.6%	$1,114
49	*Maintenance & Repair Shop Equipment*	95	0.7%	$1,025,123	2.5%	$10,791
51	*Hand Tools*	700	4.8%	$263,594	0.6%	$377
52	*Measuring Tools*	41	0.3%	$8,219	0.0%	$200
53	*Hardware & Abrasives*	1,749	12.0%	$638,918	1.6%	$365
54	*Prefabricated Structures & Scaffolding*	25	0.2%	$429,388	1.0%	$17,176
55	*Lumber, Millwork, Plywood & Veneer*	110	0.8%	$180,039	0.4%	$1,637
56	*Construction & Building Materials*	173	1.2%	$157,592	0.4%	$911
58	*Communication, Detection & Coherent Radiation Equipment*	102	0.7%	$893,281	2.2%	$8,758
59	*Electrical & Electronic Equipment Components*	1,915	13.1%	$1,816,784	4.4%	$949
60	*Fiber Optics Materials, Components, Assemblies & Accessories*	11	0.1%	$32,489	0.1%	$2,954

WHAT WE BUY AT INDIAN HEAD (CY 95 Data)						
Federal Supply Group	Description	Number of Req'ns	Percent of Total Req'ns	Total Dollar Value	Percent of Total Dollars	Average Value Per Req'n
61	*Electrical Wire & Power Distribution Equipment*	433	3.0%	$452,606	1.1%	$1,045
62	*Lighting Fixtures & Lamps*	220	1.5%	$149,965	0.4%	$682
63	*Alarm, Signal & Security Detection Systems*	89	0.6%	$72,729	0.2%	$817
65	*Medical, Dental & Veterinary Equipment & Supplies*	289	2.0%	$65,457	0.2%	$226
66	*Instruments & Laboratory Equipment*	642	4.4%	$2,856,475	6.9%	$4,449
67	*Photographic Equipment*	117	0.8%	$225,313	0.5%	$1,926
68	*Chemicals & Chemical Products*	766	5.2%	$1,513,923	3.7%	$1,976
69	*Training Aids & Devices*	102	0.7%	$7,099,407	17.3%	$69,602
70	*ADP (Including - Firmware), Software, Supplies & Support Equipment*	918	6.3%	$3,208,217	7.8%	$3,495
71	*Furniture*	309	2.1%	$608,808	1.5%	$1,970
72	*Household & Commercial Furnishings & Appliances*	80	0.5%	$51,011	0.1%	$638
73	*Food Preparation & Serving Equipment*	81	0.6%	$41,820	0.1%	$516
74	*Office Machines, Text Processing Systems & Visible Record Equipment*	14	0.1%	$8,665	0.0%	$619
75	*Office Supplies & Devices*	626	4.3%	$536,812	1.3%	$858
76	*Books, Maps & Other Publications*	239	1.6%	$139,027	0.3%	$582
77	*Musical Instruments, Phonographs & Home-Type Radios*	7	0.0%	$6,755	0.0%	$965
78	*Recreational & Athletic Equipment*	158	1.1%	$69,094	0.2%	$437
79	*Cleaning Equipment & Supplies*	157	1.1%	$104,516	0.3%	$666
80	*Brushes, Paints, Sealers & Adhesives*	557	3.8%	$190,600	0.5%	$342
81	*Containers, Packaging & Packing Supplies*	199	1.4%	$446,840	1.1%	$2,245
83	*Textiles, Leather, Furs, Apparel & Shoe Findings, Tents & Flags*	32	0.2%	$39,625	0.1%	$1,238
84	*Clothing, Individual Equipment & Insignia*	315	2.2%	$153,612	0.4%	$488
85	*Toiletries*	30	0.2%	$6,527	0.0%	$218
87	*Agricultural Supplies*	29	0.2%	$12,580	0.0%	$434
88	*Live Animals*	2	0.0%	$4,618	0.0%	$2,309
89	*Subsistence*	9	0.1%	$40,504	0.1%	$4,500
91	*Fuels, Lubricants, Oils & Waxes*	151	1.0%	$4,214,558	10.2%	$27,911
93	*Nonmetallic Fabricated Materials*	73	0.5%	$74,279	0.2%	$1,018
94	*Nonmetallic Crude Materials*	0	0.0%	$0	0.0%	N/A
95	*Metal Bars, Sheets & Shapes*	131	0.9%	$94,567	0.2%	$722
96	*Ores, Minerals & Their Primary Products*	2	0.0%	$1,439	0.0%	$720
99	*Miscellaneous*	164	1.1%	$126,414	0.3%	$771
	TOTALS	**14,596**		**$41,144,338**		**$2,819**

Appendix E

CALCULATIONS

Estimated first year cost savings were calculated as follows:

Tangible Savings: 2,635K

– Personnel reductions 14 wyrs @ $54k/yr. (from customer service, receiving, inventory, 1105, 1106, stock control)	760K
– Leveraging discounts 8% for 60% of the process @ $40M	2,000K
– Restructuring costs (rough guess)	(25)K
– Contractual costs (rough guess) off-line ILSMIS interface auto reconciliation electronic forms	(100)K

Intangible Savings: 3,105K

– Bankcard process improvements $50 less per transaction @ 12,000 transactions per yr.	600K
– Requisition process improvements $250 less per req'n @ 80% of 15,000 req'ns per yr.	3,000K
– Labor cost for the 3 Pilot Teams 5 people each @ $60k/yr. for 1/6 yr; 2 mo. @ 1/2 time, 4 mo. @ 1/4 time	(150)K
– Labor cost for Implementation Team 12 mos., 6 people 1/3 time @ $60k/year + 1 full-time	(180)K
– startup cost for 5 remaining Commodity Teams each approx. 2/3 cost of a pilot team	(165)K

Total Costs:	$620K
Total Savings:	$6,360K
Net:	$5,740K

Appendix F

MEDIUM- AND LONG-RANGE ACTIONS

Note: This appendix is missing from the original contributor.