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OUTSOURCING AUTOMATIC DATA PROCESSING REQUIREMENTS AND SUPPORT

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Over the last several years outsourcing has become an increasingly popular mode to reduce costs and focus operations upon the main objectives of an organization. This paper looks at outsourcing in general, and automatic data processing (ADP) outsourcing in particular. It discusses both private industry and government experiences with outsourcing, and their respective successes and failures. It further discusses several considerations that should be reflected upon before outsourcing is implemented by an organization. In general, outsourcing, especially of ADP processes, has been successful, but it should not be expected, carte blanche, to produce savings in all instances.

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Executive Summary

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Introduction

Outsourcing is taking a more prevalent role both in Government and Corporate strategies in the current fiscal constraint environment. As Secretary of Defense William S. Cohen has recently stressed (Cohen, 1997): in order to afford the future modernization of our force structure, we need to reduce the current cost of our existing support structure to "make it perform better at less cost by harnessing the revolution in business affairs." He goes on to say "we still do too many things in-house, that we can do better and cheaper through outsourcing." This sentiment is also present in new House and Senate bills which seek to require privatization of non-governmental functions unless they can be shown to be less expensive (Brewin, 1997; Federal Employees, 1997; and Harris, 1997).

What outsourcing offers to managers is a way to conceivably cut costs and improve quality for their organizations. To a large measure this has proven to be the case, as evidenced by the large corporate outsourcing stories that have unfolded in the past several years. Such companies as American Airlines, British Petroleum, General Dynamics, Kodak, McDonnell Douglas, Xerox, and the major automobile manufacturers have all entered into the outsourcing business and have improved not only their cost competitiveness, but also their product quality (Willcocks and Lacity, 1995). Recently, several large Government agencies have also joined the bandwagon, and plan to implement outsourcing for their computer systems: General Services Administration (GSA Presentation, 1997), Federal Aviation Administration (FAA Article, 1997) and National Aerospace Administration (NASA Memo, 1997). Likewise, OSD has recently considered the use of outsourcing to reduce costs, and has outlined the conditions that need to be considered before outsourcing is initiated (Defense Issues, 1996):

1. The private sector must be able to perform the work without impairing the DoD mission.

2. A competitive environment must exist in the commercial market for the process that is being outsourced.

3. Outsourcing must result in a best value (reduced cost or improved performance) for DoD.

Further, the following regulatory and policy guidance applies to Government outsourcings:

1. OMB Policy Letter 92-1 (1992), Office of Management and Budget. This letter attempts to lay out what types of Government functions might be outsourced, and which are "inherently Governmental functions."

2. OMB Circular No. A-76, Revised Supplemental Handbook (1996). This document describes in extensive detail the reporting requirements required for outsourcing. This is in response to Title 10, United States Code, Section 2461,

which describes the required studies and reports that must be submitted before conversion to contractor performance when a proposed outsourcing affects the laying off of Government personnel. It mandates extensive reporting to Congress, to include a detailed cost comparison study that justifies the outsourcing.

Reasons to Consider Outsourcing

To reduce operating costs. This is certainly the primary driver in outsourcing, and for Government activities, a requirement in order to justify personnel reductions. Cost reductions can occur principally in four areas: personnel, software development, consolidation of equipment, and/or time spent by in-house personnel on computer-related problems.

1. For Federal Agencies, cost savings as a result of personnel reductions are a sensitive issue, in that they involve working with local unions, political concerns, and also require a considerable amount of substantiated documentation to justify laying off personnel. The types of personnel reductions that might be considered are the personnel involved with the technical support of the equipment, administrative support, and/or the direct support areas (training, data management, downtime, peer support, etc.). Dr. Sam Kleinman of the Center for Naval Analysis (GSA Web Page, 1997) looked at 1,000 A-76 outsourcing competitions, and found the following results:

(a) Savings come from using fewer workers, not lower priced workers.

(b) Only 3 percent of Government employees take jobs offered by the winning private sector firm.

(c) Government was found to be cheaper than private industry in 50 percent of the outsourcing studies; up from 30 percent several years ago (Federal Employees, 1997).

The Government Accounting Office (GAO) has also looked at these previous A-76 outsourcings, and has voiced some concerns that they may not have been as successful as first thought (GAO, March 1997):

(a) Savings estimates represented projected rather than realized savings.

(b) The costs of the competitions were not included.

(c) Where audited, projected savings have not been achieved.

Further, in looking at outsourcing military depot maintenance, GAO came to the conclusion that privatization of highly skilled technical maintenance may not generate expected savings due to a number of factors: such as, the specific

technical nature of military equipment, the lack of competitive private sector companies that can perform these jobs, and/or that the reported savings on previous Government outsourcings were overoptimistic, and did not reflect subsequent cost overruns, modifications, or add-ons (GAO, July 1996; GAO, December 1996; and GAO, May 1997).

2. Cost savings associated with software development seem to vary considerably depending upon the function of the agency. These might involve not having to develop new software to perform various missions due to the service provider already having the requisite software, and providing it as part of the contract.

3. Consolidation savings can be realized in several different areas:

(a) Standardization of hardware and software, so that volume purchases can be made.

(b) Technical support may be cheaper.

(c) Changing hardware requirements, so that computer requirements are matched to the particular office environment. For instance, this might take the form of using a network to perform mission requirements, where individual stand-alone computers could be replaced by cheaper dumb terminals, or limited capability terminals which utilize the network server to perform the workload.

(d) Another form of consolidation would be through the reduction of hardware and software costs by either leasing or allowing an outside contractor to maintain control of the assets. This would allow the assets to be updated and/or upgraded at periodic intervals over time, which would provide the opportunity for offices to gain the latest hardware and software without continually buying new systems. Several major manufacturers are offering these plans (e.g., IBM, Dell, etc.) and claim that they will reduce the total PC ownership cost (PC World, 1997).

4. The saving associated with freeing up in-house personnel from performing minor help and/or technical support is more nebulous. For, while the argument can be made that a help desk can be exercised for questions and technical support, it is more likely than not that the response time will not satisfy some users, so that use of in-house personnel would still occur. The actual cost savings from freeing up local people is also hard to estimate (i.e., the amount of time they spend assisting their peers on computer support is not well documented). The Gartner Group and Nolan-Norton Studies have estimated that these soft costs could be 3 to 5 times the yearly systems costs (Entex White Paper, 1997), with the truly identifiable/manageable portion running about 40-50 percent of the systems cost.

To improve productivity or access new technology. The second most popular reason for outsourcing. Stefano Iacoponi, VP of Product Engineering for FIAT Auto, emphasized that business today needs to "get more with less...and faster," and part of that is the growing recognition that the battle for technological advantages in the future will be dependent upon exploiting and expanding a broad range of external technologies that are increasingly not resident in-house (Research Technology Management, 1996). This sentiment seems to be fairly common among many industry leaders as evidenced by a survey conducted by the Economist's Intelligence Unit with 50 CEO's and CTO's worldwide (EIU Report, 1993). They believed that 50 percent, or more, of their technological competitiveness will be derived from external technologies and partnering. One way that may be achieved in the Government would be to provide Internet or network access to all employees, so that they would be able to access and interface with a broad range of resources. Another way that productivity might be improved would be though upgrading hardware for specific individuals or offices that are computer software intensive. For instance, an argument can be made that if a computer is frequently in the wait mode due to either the CPU or drive access, that wasted time could well justify the purchase of a new upgraded computer, given the cost of the individual's time that is waiting for a response. Platinum Technology, in reviewing these situations as part of their monitoring software operations, has found that on some machines the break-even time could be as short as five to six months for highly paid individuals (Schwartzman, 1997).

To obtain specialized expertise that may not be available in-house. Finding personnel with the proper skills has always been a difficult process, and to hire subject matter experts who are abreast of the volatile changes taking place in all fields, especially high tech, is not easy when these people can demand premium salaries in industry.

To increase the focus on the mission of the organization, or the area of its expertise, thereby allowing the process to be executed at the least expensive level. Thus re-deploying the time and expertise of the workforce to the mission of the organization, and its strategic planning to meet mission goals. Perhaps the question as to what to outsource can be framed as: "Is it my core competency?" If not, it should be considered for outsourcing.

History

As one would expect in any type of venture, there have been both successes and failures in outsourcing. Some of the successes in the private sector have been evidenced by a study performed by The Outsourcing Institute (White Paper, 1997), which found that 30 firms realized a 9 percent average cost savings after outsourcing. In particular, outsourcing ADP requirements and their support has proven to be very successful in private industry. For instance, in a study of 32 outsourcings, 22 were successful, and only four were unsuccessful (Lacity, Willcocks and Fitzgerald, 1996). This study also came to the following conclusions:

1. That senior decision makers need input from their computer experts in order to make outsourcings work.

2. That internal departments should be allowed to compete with external venders for the outsourcings.

3. That shorter contracts (less than four years) are more successful than longer contracts.

Some of the principal ADP successes with outsourcing have been by SmithKline Beecham, which saved 24 percent on their network operating and management services costs through outsourcing (HP White Paper, 1996). Their contract provided 24 hour service to keep the network up and running at 90 sites in 30 countries, and addressed corporate software applications such as e-mail, groupware, finance, sales, administration and manufacturing data. Next, Hewlett-Packard (HP), which manages 100,238 computer "seats" worldwide, achieved a 44 percent annual savings when they reorganized how computer operations were being maintained (HP Briefing, 1997).

Tempering these successes, however, have been several studies and specific situations in which outsourcing was not successful. One significant early failure in the outsourcing area was the Air Force Materiel Command's award of an $87 million firm fixed price contract to design, develop, test, implement, operate, and maintain the Air Force Equipment Management System (AFAA Report, 1996) . This story emphasizes the importance of how one should view the contractor's role. That is, they should be considered as resources for your organization, but not given free rein in decision making. The contract established specific performance and sizing requirements, and stated that the contractor was totally responsible for sizing and providing hardware and software architectures sufficient to satisfy the requirements, and that the contractor would upgrade the hardware and software as needed to satisfy performance requirements. As it turned out, the system that was developed by the contractor did not meet either the hardware or software requirements for the program. However, due to the program office not establishing and performing adequate and complete acceptance testing, and failing to identify these deficiencies before acceptance of the software, the Air Force ended up having to replace the hardware and software at an additional cost of $4.5 million.

Another outsourcing failure occurred in 1995, when the Air Force awarded contracts to outsource the Aerospace Guidance and Metrology Center at Newark AFB, Ohio. The GAO study found that the privatization of the Center would not generate the expected 20-30 percent savings first projected, and even if it did, the savings were so minimal that it could take upwards of 100 years for the Air Force to do so (Concannon, 1996; and GAO, December 1994).

One of the most troubling studies about outsourcing was performed by Deloitte and Touche, where, in a survey of 1,500 CIO's in the United States and Canada, they indicated that only 31 percent believed that their outsourcings generated significant cost

savings, with 69 percent disappointed in their outsourcing results (CIO White Paper, 1997). Basically, this survey showed that:

1. Their beliefs that they would achieve savings due to economies of scale and/or superior contractor resources did not materialize, because the fixed price contracts they entered into did not pass hardware, software, or personnel cost savings over time along to their customers. This finding was also supported by Lacity and Hirschheim (1993), and Lacity, Willcocks and Fitzgerald (1996), who found that commercial contracts dealing with outsourcings have found problems with long term contracts, so that the current trend today is to look at shorter time spans. Another problem with long term contracts relates to changes in scope over time for the organization, where the contract no longer takes into account the new organizational requirements.

2. Customers complained that venders were not up front about the amount of subcontracting that would be used for the execution of their contracts. This became a problem when the subcontractor was unfamiliar with the contract provisions and customer expectations, and/or did not deliver the required services in the expected way. This concern was also voiced in an INFO WORLD (1996) article, where many firms that had outsourced their information technology functions were starting to reduce the scope, or cancel parts of those efforts, because of lack of control over the venders.

Concerns to Keep in Mind when Outsourcing

The literature has pointed out several concerns that should be kept in mind when considering outsourcing. First, that it could cost between 5 to 7 percent of the value of the contract to manage and oversee the contract. That would cover renegotiating the contract agreements, resolving disputes, and tracking the contract's performance (Scheier, 1996). However, these costs could vary depending upon the nature of the outsourcing. That is, the more flexible the contract, as to the work to be performed, the more contract oversight would be required. Thus, there will be a trade-off for the agencies involved, to make the contracts as flexible as possible to cover a broad range of needs, and changing requirements, without overburdening them with contract oversight. However, this is a fine line, for if the service levels are tightly defined, one could find oneself paying high fees for incremental projects outside the defined scope of the contract. Some companies have reported that they have paid as much as 70 percent more than the original contract value in some areas (Lacity and Hirschhiem, 1993). Lacity and Hirschhiem further point out, outsourcing does not seem to work well in the following areas:

1. Where a knowledge of the business is required.

2. Where all services are custom.

3. Where the employee culture is too fragmented or hostile for the reorganization to come back together.

Costs of Owning and Operating PC's

The Gartner Group estimated that the five year cost of PC ownership exceeds $40,000. That is, the annual cost of owning a Windows 95 PC is $7438 per year (PC World, 1997), which includes depreciation, technical support and administration costs of $3998 per year, and $3440 in end user operations. End user operations represent the time spent by the employees working on their own computer, helping coworkers install new drivers, and/or answering questions on applications/problems. Admittedly some of that time might be reduced by contracting out help desk and technical support services, but certainly a considerable amount of it would remain even after contracting for these services, due to human nature and the normal office interactions. To put these expenses in perspective, the Gartner Group also conducted a similar study on the cost of owning a coffeepot, and found that the annual cost of having a coffeepot was $39,679. The pot itself was valued at $279 (pot, coffee and filters), while the time spent walking over to it, pouring coffee, putting in filters, and chatting with someone for a 50-employee office at an average salary of $35K ran $39,400 per year (PC World, 1997), or a little over a man-year per coffeepot.

Areas to be Considered for ADP Outsourcing

• *Hardware/Software Purchases and Support*. Generally the largest dollar value area, and also the one having the most potential for outsourcing.

• *Networking/Communications*. The next largest potential area for outsourcing. Covers the setting-up and maintaining of hardware and software, monitoring performance of circuits, and rerouting around bottlenecks for the communications network.

• *Asset Management*. The next area, which covers all administrative control, warranty, planning, configuration, updating and disposal of equipments.

• *General Support*. The last area, which would look at the help desk and training areas. This area would also include those cost avoidance situations discussed by the Gartner Group above, where in-house personnel time could be saved by the use of "expert" help desk contracting.

Next, the agency should determine what its current assets, hardware, software, other property, and support staff constitute. This is important for determining what the current costs are to support its computer operations, and to obtain a feel for which areas might be the most beneficial to outsource. Further, it provides a basis of comparison against which the offerors' proposals can be evaluated, to determine if outsourcing would be cost effective.

Contracting Issues

The General Services Administration (GSA) will be outsourcing their desktop computer support in March of 1998 (GSA Presentation, 1997). Their contract will not specify the hardware or software requirements in the task orders, or what an upgrade schedule would be, rather it will be a master contract that local GSA offices and other Government Agencies can use to pick and choose options from, so as to cover their specific requirements (Powers, 1997; and Wren, 1997). Mr. Wren of the GSA Information Technology office said in an interview that their contract will be based upon a per "seat" cost, where the contractor will assume ownership of the computers, both present and future, and be responsible for upgrading them on a programmed basis. This brings up an important consideration in determining how the contract is structured. For instance, the offeror's proposal should delineate what will happen to all of the assets under consideration: which ones will the contractor assume responsibility for, which ones will remain with the agency, and which if any will go to third parties.

Lastly, there are a number of measures that one can include in the contract to aid in determining if the contractor is meeting the goals and costs projected for the outsourcing (Mylott, 1995):

1. Response time (average or maximum).
2. System availability (daily, by shift, by software application).
3. Downtime (daily, by shift, by software application, MTBF).
4. Turnaround time or schedule performance.
5. Operations Cost Measures (CPU hours, storage costs, total cost per hour, fixed cost, variable cost).
6. Communications Cost Measures (per hour, by distance, per line, per switch).
7. Services Cost Measures (per person, per application).
8. Performance reports.
9. Penalties for nonperformance.
10. Satisfactory performance: what are the organization's expectations of the vender? These need to be clearly defined and discussed with the vender.
11. Build subcontractor approval rights into the contract to specify that mission critical projects or systems are handled only by the primary vender.
12. Value-based pricing and benchmarking; to periodically adjust to the market place, or to insure that prices stay competitive.

Discussion

In general, it would seem that there are potential savings that may be achieved by the use of outsourcing, especially in the ADP area; however, in order to achieve those savings, considerable forethought needs to be taken in structuring the contract, in monitoring the contractor's performance, and in the administration and oversight of the contract.

Much of the preceding information on outsourcings comes from the private sector, so there is some question as to whether the Government would achieve these same cost savings. The differences include:

- Industry has tax incentives, investment write-offs, and other business related savings that Government activities do not have.

- Industry is not under the same oversight requirements concerning personnel reductions that Government activities have, for, as mentioned earlier, most industry savings come from reducing the number of personnel performing the mission.

- Several of the companies cited in the above studies were small businesses, achieving savings due to economies of scale, which would be different for Government activities, that already use large purchase agreements or site licenses.

These concerns are supported by Dr. Kleinman's research, pointed out earlier, for when one looks at A-76 studies for Government entities, only half of the studies indicate that there would be a cost savings with outsourcing. Thus, it would seem that outsourcing is more cost effective in the private sector than in the Government, for the reasons discussed.

Next, contracting out any in-house activity assumes that it is inherently a "utility" function that can be performed by someone unfamiliar with the rest of the organization. Likewise, it assumes that a cookie cutter approach can be used across offices that require an interface with that activity. For instance, while a number of alternative configuration setups can be used as the basis for fulfilling an activity's needs (i.e., different office equipment, software and support), to the extent that those configurations do not meet the true needs of all the offices, the offices that are unique may not be able to perform to their optimal ability.

Lastly, several of the savings reported with private sector outsourcings represent cost avoidance savings versus real hard dollar savings. For instance, some of the private sector outsourcing studies, like those discussed by the Gartner Group above, count as savings the salaries of those individuals who can shift time back to performing their intended job, when technical support help desks are provided to an organization. However, for the bottom line, it is uncertain as to the real amount of savings as a result of this shifting of work, for it depends upon the salary of the workers performing those odd jobs, the salary of the help desk employees, and the degree that those types of work actions are actually transferred.

In conclusion, it would seem that there are savings that can be achieved by using an outsourcing approach to various business functions. These would seem to be dependent upon the type of business function and its commonality; that is, the more common the activity, the more likely it would be to achieve savings. Further, it would seem that outsourcings in private industry are more likely to achieve cost savings than

those in the Government, since industry has different tax and investment incentives than the Government.

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