

# Public Sector ERP Implementation: Successfully Engaging Middle-Management!

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## Abstract

ERP implementation problems often occur due to cultural problems that lie deep within the organizational structure. Highly departmentalized (referred to as “stove-piped”) organizations are averse to the open flow of information and to process oriented management solutions. Nowhere are these problems more evident than in our public sector institutions. To increase the success of future public ERP initiatives, this paper focuses on the important role of middle management to proactively support and advocate an ERP project in the pre-planning and requirements definition phase of a project. The research identifies high value middle management attributes that need to be identified by ERP project managers to co-opt these individuals into the role of “trusted intermediaries” to act as managerial bridges between traditional, and often adversarial organizational “stovepipes”. Existing project work by the author and interviews with former public sector, project managers and implementation consultants show that the role of middle management is much more critical to the success of a public sector ERP implementation than in a corresponding private sector effort.

**Keywords:** ERP, Process Change, BPR

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## Introduction

Since the mid-1990's many public sector organizations have followed the private sector and implemented pre-packaged commercial Enterprise Resource Planning (ERP) solutions in favor of a proprietary systems development effort. Although ERP software may not exactly support all complex business processes, public sector organizations are willing to trade-off complex domain specific functionality for the benefits gained from a pre-packaged enterprise information system. By not developing a proprietary solution, the expectation is that there will be significant cost savings and increased organizational efficiency (Gulledge and Sommer, 2004). In the U.S., the number of public sector ERP implementations at the federal level has risen rapidly in recent years. High profile implementations include efforts in the US Army, US Navy, NASA, Defense Logistics Agency (DLA), and several other Federal

agencies. Although there have been some successes, there have also been many failures.

Public sector ERP solutions have been difficult to scope, manage and implement in accordance with best industry practices and generally accepted project management principles. A 2005 Government Accountability Office (GAO) report outlined the implementation effectiveness in several US Navy ERP projects. The findings state that “The Navy has invested approximately \$1 billion in its four pilot ERP efforts, without marked improvement in its day-to-day operations”<sup>1</sup>. Although the report makes some basic recommendations that address management and process efficiency, it does not address the premise that there may be

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<sup>1</sup>GAO United States Government Accountability Office Report to Congressional Requesters, September 2005 “DOD BUSINESS SYSTEMS MODERNIZATION - Navy ERP Adherence to Best Business Practices Critical to Avoid Past Failures”

unique cultural, political, and organizational factors that negatively influence successful ERP implementation in the public sector. Since many public sector projects are over budget, they were subsequently de-scoped<sup>2</sup> to increase the chance of implementation success, and to make the projects more acceptable from a political perspective. Given that most U.S. Fortune 1000 companies have invested heavily in integrated ERP software solutions (and have achieved significant competitive advantage from these efforts), public sector organizations must understand the factors that contribute to the multitude of problems among their ERP projects. Failure to address these issues puts future funding streams at great risk.

### What is ERP?

Enterprise Resource Planning represents a process-oriented management view with regard to organizational re-alignment. In addition, ERP also represents a class of “off-the-shelf” software solutions that instantiate process-based management views within a suite of business applications. ERP is highly valued as an integral component of modern business transformation initiatives (Buck-Emden, 1996). These initiatives have their origins in the private sector, and the “lessons learned” have only recently been applied to public sector organizations. Hence, there is a need for identifying successful private sector experiences, methods, and models and applying them to public sector business transformation challenges. Traditional ERP has its origins in the business information system domain (Scheer 1992). It has subsequently evolved into a cross-domain solution that emphasizes the importance of processes, governance, and policy alignment in transforming slow and unresponsive business entities into highly competitive value chains.

Public and private sector business transformation efforts are driven by cross-

functional process change initiatives that attempt to eliminate the traditional “stove-pipe” management model. Many previous transformation efforts have failed due to outdated process structures that often operate under conflicting governance models. In addition, public and private sector management cultures are all too often wedded to traditional planning methods that run contrary to modern customer-oriented management practices. Therefore, to understand ERP within the context of a management paradigm as well as a business software application view, it makes sense to trace its lineage.

### *The Origins of ERP-Based Organizational Change*

Researchers can trace the need for ERP to the mid 1970’s when “systems requirements” and “systems integration” methodologies drove a significant amount of organizational change activity. The intent of these early efforts was to develop methodologies that would allow business and organizational change requirements to be more accurately defined within the traditional systems development lifecycle (SDLC). Most of the professional and academic research literature of the time was focused on this “systems approach” to effect change. Although highly researched, it became clear that the traditional systems development view of organizational change was ineffective in coping with the dynamics of complex organizational structures (Hars, 1994).

To mitigate the shortcomings of the traditional “systems approach”, during the late 1980’s, many well respected academic and professional researchers looked towards a new “process-centric” solution. Driven primarily by highly popular authors such as Hammer and Champy<sup>3</sup>, the “Business Process Re-engineering” (BPR) approach to organizational change was widely advocated. This method was based on the enlightened premise that the business process should drive

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<sup>2</sup> Intentionally reducing the functional requirements of the ERP system to meet timeline and budget mandates.

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<sup>3</sup> Hammer, Michael and James Champy (1993) *Reengineering the Corporation: A Manifesto for Business Revolution*, Harper-Collins, New York, NY.

organizational change requirements. Hence, it was imperative that organizational processes be re-engineered to support a lean competitive business model. The consensus in the literature was that once processes were re-engineered to meet business requirements, it would be much easier to develop accurate information systems and to sustain effective change initiatives (Nissen, 1996). The BPR revolution lasted until the early 1990's when, after many years of collecting and analyzing BPR-based organizational data, it became clear that although many companies were able to effectively re-engineer their processes, maintaining the initiative for change and then enabling the newly re-engineered processes with the appropriate information technologies was far too costly. Organizations had not considered the high software development costs associated with the development of new "customer and supplier centric" business processes. Therefore, the expenditures could not be justified; even within profitable or well funded organizations. By advocating a BPR approach, many projects ran over budget within the private and public sectors, and were eventually ended in favor of existing traditional processes and legacy software applications.

As the BPR era began to fade in the United States during the mid 1990's, there emerged a paradigm that was based on a radical new view of process-based organizational change (Scheer, 1994). In fact, it was the antithesis of the traditional BPR approach because it advocated purchasing business processes from a software vendor rather than re-engineering processes in-house. This "pre-engineered" solution provided an integrated set of business processes that were already aligned with supporting information system technologies; thereby correcting several critical flaws of the traditional "BPR approach". In essence, an organization would purchase pre-engineered business management software from a vendor and simply implement it. Since optimized "best practice" business processes are already defined in the software application, and the application is

already linked to lower level information technologies, the legacy cost constraints associated with the traditional BPR methods were effectively eliminated (Sommer and Gulledge, 1998).

The "pre-engineered" concept is driven by large software vendors such as SAP, Oracle, and formerly PeopleSoft (now Oracle), and although widely classified as Enterprise Resource Planning software, these solutions are also known as Standardized Business Software Applications (Keller and Meinhardt, 1994). However, simply purchasing pre-engineered processes does not guarantee a solution that meets organizational business needs. The pre-engineered solution requires extensive implementation support that is provided by many entities ranging from the software vendor, to the implementation consultant, and the business itself. These experts not only understand pre-engineered processes that reside within a software solution, but can help high-level decision makers identify specific processes to implement so that a competitive advantage can be realized. They also provide insight into the constraints imposed by restrictive policies and regulations, as well as the cultural nuances associated with process-oriented organizational change. This "gap analysis" (i.e. what configuration options the software offers and what process and policy changes the client organization needs to change to align their business functions with the ERP software) is very difficult for many organizations to accomplish (Gulledge and Sommer, 1998). Hence, there is a need for a team of experts to help identify, prioritize, manage and monitor the implementation of pre-engineered software. These experts advise on the organizational, process, cultural and policy ramifications of the ERP software implementation. Given the staggering software adoption and expenditure rates by Fortune 1000 companies, and the continued growth of ERP software vendors, it would seem that the "pre-engineered" approach, to organizational change, represents a significant improvement in business transformation when compared to the traditional "systems" or "BPR" solutions. However, there are significant

implementation problems among public sector ERP initiatives, and the range of possible causes varies greatly.

**Research Methodology**

The motivation for this research was to gauge the importance of middle management in the successful implementation of an ERP system. The information presented in this paper has

been gathered through qualitative methods such as interviews, and direct project work by the author on federal government ERP projects. This information was then discussed with three senior public sector ERP project managers, and five high-level ERP implementation consultants who were all involved in one or more of the following Department of Defense ERP projects (Table 1.)

**Table 1 – DoD ERP Projects<sup>4</sup>**

Department/Agency	ERP Project Name		
U.S. Navy	SMART	NEMAIS	SIGMA
U.S. Army	LMP	GFEBs	

As part of the protocol, the eight participants were initially asked to provide an overview of their projects, and then discuss and expound on the following question.

*“How important was the proactive participation of middle management on your ERP project?”*

The resultant information was used to identify potential management barriers to successful project performance now that some years have passed since these first generation public sector ERP implementations were funded. Although the sample size is small; given the contentious political nature of examining public sector ERP projects, a host of current and former senior managers and consultants contacted for this study simply refused to participate.

In order to provide a constructive and proactive tone to this research, the format of the paper is purposely “challenge and solution” oriented.

**Differences in Public and Private Sector Organizational Structures**

Unlike many of their private sector counterparts, public sector managers are forced to make decisions in a consensus driven manner. From a historical and security perspective, this is a valid management model that has stood the test of time, and assures that no one person wields absolute power. Within the Department of Defense, this protocol upholds the check and balances envisioned by our founders to assure the continued control of a duly elected civilian government. Although this model provides the necessary “checks and balances” on power within any governmental bureaucracy, it does present a problem when management tries to effect timely, cost effective, and proactive change.

The ultimate consequence of such a highly developed consensus driven management approach is that implementation timelines often get longer and project costs increase. Since early public sector ERP initiatives benchmarked their implementation timelines and costs on private sector data, it is not surprising that many projects were

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<sup>4</sup>Naval Supply Systems Command (SMART Project), Naval Air Systems Command (SIGMA Project) Naval Sea Systems Command (NEMAIS), Army Material Command (LMP Project), Army General Fund Enterprise Business System (GFEBs Project)

experiencing problems. The following factors were first identified by Sommer (2006) to show that there are significant management differences between public and private sector cultures; and that these differences have a lasting impact on ERP timelines and costs.

1. **No “Bottom Line” Incentives:** Public sector organizations have no strict bottom line incentives; such as profit, customer satisfaction, or competitive advantage. Although often used to describe public sector inputs and outputs, these concepts have a different meaning than in the private sector. It is often not clear who a “true” public sector customer is, because there is no straight forward “payment for services” model that can be baselined to measure performance. From an ERP perspective, if the customer cannot be readily identified, then the solution often falls prey to a host of competing political agendas that do little to enhance the business efficiency of the organization. This continual reconciliation of competing agendas causes timelines to slip and costs to increase.
2. **Shortage of Organizational and Political “Clout”:** Public sector organizations have a severe shortage of long term power-brokers that can force a vision and expend the necessary political capital to achieve that vision. Highly successful project managers are often needed on other projects. Hence, they are only allowed to stay long enough to start a project, or to get it back on track, before they are needed elsewhere. Most career bureaucrats never have enough organizational or political clout in their position to ensure that their vision is driven to a successful conclusion. Their lack of clout forces them to manage in the stovepipe model and aggressively compete for resources with other stovepipes. Ultimately, the loss of a good manager will cause projects to fragment and succumb to infighting among the implementation teams. This causes delays and ultimately drives up costs.
3. **Narrow “Windows of Opportunity” for Political Appointees:** Most all political

appointees have a very short time frame to drive an agenda. Realistically they must drive their initiatives during their first two-to-three years in office, because their tenure is tied to the fortunes of the presidential election. Hence, they may often use the latter years of their appointment to do political work, or to develop a plan for transitioning back to the private sector. Once this early window of opportunity has passed, the project commitment of the appointee often begins to wane and critical decisions will not be readily forthcoming. Although not endemic, critical decision timelines tend to get longer during the latter years of a political appointee’s tenure. This may cause project timelines to slip and severely affect overall costs.

4. **Mandatory Rotation:** Within the military ranks, many senior officers are most often on mandatory rotation, and although they may have an ambitious agenda, they must work diligently to get even a fraction of their programs funded and completed before they are assigned to a new position. Chances are that when a new officer is assigned to a recently vacated position, he will only provide complete support for his own agenda and interests. This effectively puts many critical decisions on hold, and can have dire consequences with respect to ERP implementation priorities.
5. **Organizational Rivalries:** To secure funding, public sector organizations are forced into very aggressive and competitive rivalries. Although some of these rivalries base their roots on historical and cultural contexts, most are driven by competition for scarce resources. Nowhere is this more evident than within the US Department of Defense where inter- and intra service rivalries are entrenched more deeply than in the private sector. With respect to ERP implementation, these rivalries will often negatively impact project control and oversight issues, and are directly tied to budget concerns. Such infighting forces timelines and failed milestones to expand at a rapid rate.

**6. *Mid-level Management Apprehension:***

public sector mid-level managers can delay projects far longer than their private sector counterparts. Their organizational reach and influence is often far greater than their job description would imply. Hence, public sector rank and file can move very slowly in implementing a top-level mandate with the hope that when the current leadership goes away, the mandate will also disappear. “Slow rolling” is detrimental to budgets, timelines and milestones.

**7. *Innovation Incentives:*** In the public sector, innovative (“out-of-the-box”) thinking is risky and not encouraged or rewarded. In fact most bureaucrats shun risk taking of any kind. The public sector provides very few incentives for pushing an innovative agenda, yet there are many disincentives for failure. Hence, few managers are willing to challenge the status quo. They may be quite satisfied with maintaining traditional inefficient processes because they support the prevailing organizational doctrine. If these legacy processes are implemented in an ERP solution, no innovation or efficiency will be gained from the endeavor.

**8. *Consensus-based Decision Making:*** All decisions (even at high SECDEF/Flag/SES<sup>5</sup> levels) are made by committee; where the prime goal is to achieve consensus. Again, much of this behavior is driven by a culture steeped in “checks and balances”. However, the committee-based decision model has shown to be very slow in driving critical decision making, providing clear guidance, curtailing special interests, and garnering support from lower level managers. This aspect of public sector culture may ultimately be responsible for driving many ERP project severely over budget.

These constraints are significant, and greatly hamper public sector ERP management and implementation efforts. Most can be overcome with proper planning, and within the context of a well defined change management strategy.

**Examining the “Middle Management” Factor**

The success of Enterprise Resource Planning (ERP) systems in the private sector has led public sector organizations to follow suit by developing new process management and cost reduction solutions. Since middle managers are quite pragmatic, many will agree with an overall “cost saving” and “organizational streamlining” premise. However, they often become very suspicious with the initiative once they fully understand the operational changes that are required by an integrated ERP implementation. The most important competitive advantage of an ERP solution is the critical process visibility and management control the software provides to all business functions. This “openness” and visibility does not necessarily align with the closed organizational silos that dominate mid-level management workflows. Traditionally middle management cultures have prospered because they have developed an isolated work culture and thereby can exert complete control over critical process and information flows. “Opening up” this isolated work culture to external scrutiny and oversight is in direct conflict with the status quo of middle management power structures. Therefore, instead of enabling middle management to become more productive, ERP is seen as a threat to their traditional authority and job security (Sommer, 1998).

Without a proactive strategy to garner their support, mid-level managers may become convinced that ERP is a threat to their power and influence. Depending on the organizational culture, and whether or not there were previous tensions with high-level management, middle management resistance can take on a most virulent and combative form. Typically there are four common tactics that middle managers have used to delay, or significantly curtail an ongoing ERP implementation (Sommer, 2006).

1. ***Negative Tactic One:*** *Arguing that there is a unique work environment.* Some middle managers will argue that their

<sup>5</sup> Secretary of Defense (SECDEF), Flag Officers, Senior Executive Service (SES)

processes and data requirements are unique within the organization. Typically, to be excluded from ERP standardization, a unit must have specialized process and data requirements that are not found within the ERP software application. Therefore, managers will attempt to put forth a convincing argument to suggest that their unit fits within this specialized group, and their work requirements are so different that standard commercial ERP software would make it impossible to effectively accomplish their work. Most often this tactic proves unsuccessful. However, the time and resources associated with disproving the “unique” standing of certain units has an immediate negative impact on project timelines and milestones.

2. **Negative Tactic Two: Creating Confusion and Doubt.** ERP projects require the cooperation and coordination of many individuals. Therefore, it is not uncommon to find authority vested in various teams and groups. This structure provides a perfect venue to those who want to oppose certain aspects of an ERP project. Usually a dissatisfied business unit will have a representative on many ERP decision making committees in order to gather enough strategic information to justify and support their traditional stovepipe business unit structure to higher management. At the same time, they may also have a secondary mandate to spread rumours and misleading information to higher level committees in order to disrupt and prolong decision making processes. While not an “everyday” occurrence, ERP projects have been delayed due to the spreading of misleading information with regard to ERP functionality, process execution, and organizational governance. Since public sector organizations are subject to many conflicting “checks and balances”, savvy and seasoned middle managers who have intimate knowledge of their “rule books” and of organizational doctrine can put forth many procedural obstacles that impede ERP progress.

3. **Negative Tactic Three: Data-Centric Management.** ERP solutions are

based on a process-centric view of the organization. The intent of any such implementation is to align current operating processes with those that are implied by the ERP software application. Since the requirements definition phase of a project is mostly process oriented, it is quite easy to impede a project timeline by substituting vital business process discussion with a data driven requirements agenda. Data security and interface issues are always of prime concern. Hence, many committees have fallen victim to this hazard. Managers report that it is quite easy to move a formal meeting agenda “off subject” and into endless discussion about data complexity. In such instances, the discussion often dwells unnecessarily on system interoperability, data interface, and application integration issues. This low level approach can effectively stall the ERP business process requirements effort, and it may take an inordinate amount of time for upper management to refocus a committee on appropriate business process decisions. The end result is that timelines slip and project management costs increase at a rapid rate.

4. **Negative Tactic Four: Reactive Decision Making.** Public sector management culture is such that timely proactive decision making is difficult. Many managers prefer to delay their decision making to a point where time pressure, or upper-level managerial mandates, force action. This delayed decision cycle not only increases timelines and costs, but also has a negative effect on overall morale. Reactive decision making causes unresolved issues to be revisited at a later date; when it is more difficult and expensive to implement the correct solution. Therefore, untimely or incomplete decisions effectively hinder an ERP effort, and introduce increased cost, frustration and confusion.

Dealing with the concerns of middle management is one of the most pressing problems on any public sector ERP project. In the private sector, high-level managers can make rapid and far reaching personnel decisions with regard to uncooperative

middle managers. However, their public sector counterparts are more constrained by federal employment rules, organizational culture, and union contracts. For instance, some mid-level management positions are created solely to act as information brokers with other departments or business units. These mid-level managerial “check-stations” exist to manage the information flows that enter and exit the stovepipe. Their purpose is to maintain the power structure of the stovepipe and to sustain the balance of power. ERP-solutions are cross-functional and directly challenge these existing management structures. In many cases, ERP severely curtails these legacy structures, or eliminates them altogether.

It is not uncommon for a senior manager in the private sector to transfer, fire, demote, or totally isolate an individual or group that hampers the overall progress of an ERP implementation. Profit, corporate shareholder value, and competitive advantage are on their side when making these decisions. However, there are no such incentives or provisions in public sector employment rules. In rare cases where project managers were successful at eliminating mid-level management resistance along a private sector model; the results have not been positive. In fact it was noted that the backlash from such actions among mid-level management groups and workers eventually caused much greater turmoil than was expected, or warranted. Why are these mid-level managers so important? In the private sector, high-level management has the power to isolate and affect punitive measures against uncooperative middle managers. This is not the case in the public sector, where regulations, policies and cultures differ. Public sector employment rules, organizational structures and consensus driven decision making processes make it difficult to fire a government employee with a long distinguished service record.

Over time many mid level managers have developed a wide sphere of influence that is simply not reflected in their job title, and which provides certain job protections that are not explicitly defined. In the US

Department of Defense (DoD) for example, mid-level managers may have worn a multitude of “hats” in their military and/or civilian careers. Longevity, experience, and rank have enabled them to develop strong personal and professional relationships within the civil service, the military, and among the consultant community. This level of influence not only crosses organization stovepipes, but also political and cultural boundaries. Many civil servant middle managers may have been the commanding officer, civilian leader, or colleague of individuals who now hold the most senior leadership positions within the DoD. Hence, they have a unique and very important role to play in any large scale ERP implementation. The influence of such enduring informal personal and professional links to other leaders within, and across units cannot be underestimated.

### **How to Proactively Address these Challenges**

Identify, educate, and provide incentives to middle managers that have the most institutional knowledge, and who have developed a wide sphere of personal influence within the organization; especially across stovepipes. The intent of this action is to garner their support for the successful completion of the ERP project. These individuals will become “*trusted intermediaries*”, and will use their vast organizational knowledge and personal networks to pave the way for productive interaction between all levels of internal management, and to actively broker cooperation between stovepipes. That level of experience and knowledge has far reaching consequences for any ERP implementations. Projects are seldom standalone solutions that support a particular stovepipe. In most all cases, the solution must cross multiple internal and external stovepipes. Hence, ERP will require numerous process and legacy system interfaces.

This presents a big problem for public sector ERP project managers. It is difficult enough to garner support from managers within their unit, yet ERP requires that they must also get consensus from



managers in other stovepipes. Because their implementation mandate may not include specific powers to directly co-opt support from other departments, they are forced to work through many layers of committees and protocols to get effective cooperation from these organizations. If timely cooperation is not forthcoming, ERP timelines, milestones and costs can significantly slip to a point where the overall functionality of the solution will be compromised.

To address this issue, and before any contract with an ERP vendor is finalized, it is “strongly” recommended that public sector ERP managers identify a cadre of “trusted intermediaries” who will serve as “go-betweens” when problems arise with respect to internal resistance, and to affect cooperation across stovepipes. In this respect, many potential “trusted intermediaries” have been overlooked and marginalized by inexperienced project leaders. These actions have been shown to cause serious negative consequences. If these potential intermediaries are not educated and co-opted to understand the benefit of an ERP solution, they may work against the implementation. Given their organizational knowledge, and their far reaching personal relationships (within, and outside of the stovepipe), it is much better to have these middle managers support an implementation rather than subvert it. What incentives should be used to garner the support of “trusted intermediaries”? The following solutions have proven successful in the public sector:

**1. Incentive One: Promotion.** Many managers respond to potential job advancement opportunities and higher status within the organization when an ERP solution was successfully fielded. Once they have completed an intensive education and training program, and were convinced of the overall benefits of ERP, the prospect of career advancement within the new organizational structure is a prime motivator.

**2. Incentive Two: Creating an “Esprit de Corps.”** Mid-level managers with long distinguished careers have often developed

a very positive group spirit with regard to their position and their organization. Overall, they want to help effect positive and lasting change within their units. Some managers may be convinced to accept their new responsibilities by appealing directly to their unique abilities as potential “trusted intermediaries”. Others can be co-opted by pointing out that their new job would emphasize non-traditional management, a high degree of autonomy, continual interaction with senior leadership, and cross-domain responsibilities. Dynamic job positions offer new challenges and may be appealing to those managers that want to be part of an exciting organizational change effort. There is also strong evidence that suggests middle managers were motivated by the possibility of leaving behind a lasting legacy, and that the position of a “trusted intermediary” was one way to achieve this personal goal.

**3. Incentive Three: Creating Exit Strategies.**

Some managers see their role in a successful ERP implementation as a career enhancement. Mid-level managers who received very specialized training, and had embraced the concept of a process-oriented ERP solution, were able to leverage their position as a successful “trusted intermediary” in the private sector. Encouraged by their growing ERP knowledge, these individuals realize that their specialized role in a successful ERP project can be the genesis of an exit strategy from the public sector, and mark the beginning of a private sector consulting career. The personal challenges and monetary incentives of such a move are very appealing to highly motivated individuals.

**Discussions and Conclusions**

Although some would argue the point; a properly managed ERP implementation forces positive change, and is well suited for transforming the “old” culture and traditional norms of public sector organizations. However, ERP is the antithesis of traditional Business Process Re-Engineering because the organization and process structures have already been

pre-defined within the software. It is precisely this latter aspect that causes public sector managers so much concern. Because once ERP is implemented, many long held “sacred cows” are effectively eliminated.

One of the most interesting aspects of this research has been the realization that public sector project managers at all levels were quite unprepared to deal with the complexities of ERP. In the end, they could not clearly see that the underlying business process architecture and the business transactions executed by the software were one and the same. This statement is not meant to disparage these highly motivated public servants. It is merely used to point out that some of the first public sector project managers tasked to implement ERP did not have enough insight and training to undertake such a monumental task. Most all were selected because of their excellent project management capabilities. However, those capabilities were only relevant in traditional systems oriented projects where managing budgets, personnel and contractors were of utmost concern. ERP projects on the other hand require daily hands-on managerial input and decision making; all of which are hampered by a lack of proper education and training.

Further research on the importance of middle management in ERP-based organizational change is required; especially on appropriate incentive options. There are no studies that address the incentives for public sector managers in comparison to their private sector counterparts with respect to ERP projects. When compared to the private sector, the public sector has few options for motivating middle managers to become “trusted intermediaries”. Unfortunately, existing federal laws on compensation and conflict of interest excludes many of the truly innovative private sector options. From a high-level organizational perspective, real changes to incentives and compensation will only come when public sector agencies openly address these issues at the congressional oversight level.

This project represents a very small first step. Future efforts will endeavour to expand the sample size of senior participant informants, and also expand the number of public sector ERP projects under review.

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