The System Integrator’s Value Proposition
In Today’s Government Information Technology

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Introduction
With the dramatic increase of large-scale government IT programs and mission complexity over the past several years, the need for System Integrators (SIs) has been rising exponentially. As information sharing becomes a top priority on a global scale, the expertise required to support these complex IT systems and missions has never been higher. A recent Washington Technology article reported that the federal government awarded more than $28 billion in IT-related prime contracts during the first quarter of fiscal 2006, an increase of more than 40 percent compared to the same period in fiscal 2005.

This phenomenal growth in IT contracts, as well as government contracting in general, has caused some concerns as to the evolving government business model and expanded role SIs now play in government IT programs and missions. These concerns are centered on two key points; 1) the cost effectiveness of using SIs instead of government employees to perform work, and 2) the “graying” of roles and responsibilities between government and contractor employees.

This paper will address the driving forces behind the current landscape, and discuss the value proposition that SIs bring to today’s challenges and missions.

Driving Forces
The current role of the SI has evolved over the years due to a number of influences and events. As in all businesses, macroeconomic shifts and pressures caused by world events force existing business models to change in order for the business to thrive and survive in the new environment. The government market is
no exception. Over the last 15 years, several significant events have occurred requiring the government to shift its business approach and leverage the expertise and resources of private industry.

**A Reduction in Government Spending**
After the end of the Cold War in the late 80’s, government defense spending began a substantial decline resulting in a government reduction in force as well as program funding. This program downsizing not only put federal employees at risk, but contractor employees as well.

In addition to reducing costs through personnel cuts, the budget reductions had a dramatic impact on research and development (R&D) and technology spending, forcing research programs to be cut or reduced. As a result, money was either not invested or invested at a significantly reduced rate, in future technologies and capabilities as more emphasis was placed on extending the life of legacy systems and technologies.

**Shift in IT Technical Leadership**
With the explosion of the internet in the mid 90’s, coupled with a significant reduction in defense spending, a noticeable and prominent shift in technical leadership occurred. Private industry invested millions of dollars in the evolution of information technologies and soon assumed the leadership position previously held by the government in creating innovative technologies.

As new technologies evolved, the impact had a ripple effect on adjacent markets such as geospatial systems, processing systems, communications, and software. IT technologies continued to push the leading edge forcing several of these adjacent industries to invest in order to keep pace with the IT industry.

**An Increasing Need for Government and SI Collaboration**
In the late 90’s, government spending was down while the IT industry grew exponentially with new and innovative technologies, as well as businesses, being created at an astonishing rate. World events and threats drove federal, state, and local missions closer together as the Global War on Terrorism (GWOT) reached new levels as a result of 9/11. This resulted in the need to share information across all levels of government driving new operational procedures that dramatically increased IT requirements. Government spending immediately rose as money shifted back into programs and personnel focused on combating this global, distributed threat. This increased spending caused a growing need for people and technology to meet these new mission requirements. However, the budget decline of the late 80s and early 90s left the government without all of the personnel needed to carry the workload of the new missions.

As a result, the government turned to private industry, especially the SIs, to assist with executing and supporting these missions. Private industry had the technology and the people needed, primarily due to the enormous investments made in the IT industry. Also, given that the GWOT was going to be a multinational effort taking place on multiple continents, the role of information technology moved to center stage as the essential backbone enabling the sharing of timely, accurate, multi-source and secure intelligence and information.

**The SI Value Proposition**
These driving forces created an opportunity for SIs to take on a larger role in government programs, especially within IT. While concerns remain about this expanded role, SIs continue to provide significant value in many areas and play a critical role in the success of government IT programs across federal, state, and local governments.
As the role of the SI has evolved, so too has the value proposition that SIs bring to their government customers.

**Experience in Large Scale Program Management and Processes Improves Program Execution**

SIs in the Aerospace/Defense market have a long history of successful, large scale program and project management. SIs have been involved with numerous major defense programs since the beginning, including space systems, ships and submarines, aircraft, and ground based systems. This expertise translates very easily to Government IT programs, as requirements and technologies continue to increase in complexity.

In addition, proficiency in various processes and methodologies such as CMMi, Earned Value Management System (EVMS), and Six Sigma have enabled SIs to more effectively and efficiently execute programs. The government has continued to demand improved program execution, incentivizing the SIs to continue making substantial investments in these capabilities. While the government benefits from this process expertise, the SIs are also leveraging these processes to improve their internal operations, striving to ensure they realize the same efficiencies as their customers.

The Health IT industry is an example of where this large scale experience can be leveraged. President George W. Bush has made Health IT a priority, placing significant focus on the integration and interoperability of disparate IT systems at the federal, state, and local level as well as commercial markets. The sharing of health care information is critical to improving services to clients and ensuring that emergency response and disaster recovery agencies and personnel have the most current and accurate information to plan for and respond to emergencies and potential terrorist attacks. SIs, with their experience in large scale architectures, systems, and program management, are uniquely qualified to bring together all stakeholders and technologies required to make the sharing of Health IT information across various boundaries a reality.

It should be noted that even though the SIs have large scale expertise, this by no means guarantees success. There are many external and internal forces associated with government programs that have a direct effect on the outcome. Some of these influences include:

- **Requirements Management** – How effective is the customer at managing the requirements set and the requirements process to ensure they are appropriate and not prohibitive? All too often, scope creep (the continuous changing or adding of requirements after they have been frozen) causes costs and complexity to increase beyond original expectations. In addition, our nation faces increasing asymmetric and evolving threats that drive expensive requirements changes.

- **Low Cost vs. Best Value** – Depending on the program and its complexity, problems can arise if the winning bid was selected based on lowest price instead of best value. In the long run, low cost bids have a tendency to cost more than best value due to false starts, scrap and rework, and schedule delays. The old adage “you get what you pay for” remains true.

- **Continuity of Government Expertise** – Personnel reductions driven by budget fluctuations and frequent staffing turnover impact the government’s ability to maintain consistency on large scale complex programs. In addition, the GWOT has pushed more government staff into direct operations here and abroad reducing the available skill levels supporting their programs. The need for industry to provide the full life cycle continuity is increasing.
**Horizontal and Vertical Integration Knowledge Improves Capabilities**

As the Government becomes more horizontally integrated (Homeland Security and Health, Intelligence and DoD, for example), the SIs provide a bridge between agencies and customers with regards to mission and technologies. One clear benefit the SIs bring is a broad perspective and experience base across many customers gained by understanding and managing the complex interdependencies and concurrent technologies across multiple government organizations and levels. This experience allows for best practices and new ideas to be injected into various government programs benefiting the entire federal customer set. This is especially true as the vertical integration of programs across federal, state, and local governments becomes even more prominent.

SIs bring acquisition, integration and technology expertise based on many years of service in the federal market place. As federal dollars flow to the state and local market, it will become more critical for state and local customers to draw upon the expertise, relationships, and technologies that are uniquely provided by the SIs. For example, the need to flow information between the federal-level defense programs to local law enforcement will increase to improve our ability to address the current and emerging threats. SIs understand these different environments, their connections as well as the disconnects, and how to improve overall mission performance.

**Historical Knowledge of Programs Increases Mission Success**

As previously mentioned, the late ‘80 and early ‘90s saw a substantial reduction in government spending. As programs, research and personnel were scaled back, corporate America became the knowledge repository for several key government programs. The government began to increasingly rely on private industry scientists, engineers, program managers, and executives who had been involved with the programs to provide a consistent knowledge and industrial base for complex systems and missions. This was especially critical at times when systems experienced difficulties or were being stressed beyond their design limits to meet the needs of new mission requirements. As a result, additional SI personnel were brought on to existing and new government programs in order to provide the knowledge and expertise previously supplied by government personnel. The continuity provided by SIs remains critical to the success of many government programs and missions.

**Positioned to Address Distributed Threats**

In today’s world, the threat we face is distributed and difficult to identify. Given this global theater, SIs play a key role world-wide as the government leverages their international presence and experience. With operations and locals already in place, the SIs can readily support many overseas operations. This is much more cost effective and less risky than the government setting up operations in foreign countries.

**Rapid Delivery of Capabilities and Resources to Meet Emerging Needs**

One clear benefit that SIs have always provided, although its priority has increased in recent years, is the ability to provide “surge” capability. In this model, personnel are moved from one program to another based on priorities for a prescribed amount of time. The government can redirect contractor resources as required in order to meet Quick Reaction Capability (QRC) demands, perform contract start up, resolve critical issues, or provide support to another government agency.

In addition to providing surge resources, the SIs can also rapidly deliver strategic and specific expertise, tools, technology, and processes from within various parts of their companies (known as “reach back”). For example, if a government IT program needs a signals intelligence technology expert, most aerospace/defense SIs can provide this expertise in a timely manner to the program for the period required.
Provide of “Best of Breed” Solutions for Complex Problems

Because SIs are not typically in the product business, they have a multitude of experience in working with a wide array of products and technologies from many vendors. This “multivendor” approach affords the SIs the ability to bring “best of breed” products and solutions to their government customers.

In the past, SIs created proprietary solutions which essentially locked in the government to their technology. However, with the proliferation of technologies and solutions over the past decade, most SIs have migrated to leveraging commercial off the shelf (COTS) technologies. These COTS technologies are primarily standards-based which facilitates the interoperability of systems and subsystems. This interoperability is key to information sharing and management.

Leverage Repeatable Solutions and Cross Industry Experience for Success

Within the SI’s customer base, many customers require very similar solutions in information systems, networking, and communications. As the SIs gain experience in these areas, repeatable solutions reduce risk and cost. While each customer’s solution generally requires customization, there is usually a part of the solution that is common, enabling the SIs to leverage their experience and technology from previous programs.

In addition to repeatable solutions, the SIs have a broad view of the challenges, needs, missions, capabilities, and technologies relevant to the entire federal government (and in some cases, commercial markets as well). This broad perspective allows the SIs to assist their customers in planning and executing business transformation as business models, demands, and mission evolve over time. Having seen what has and has not been successful, SIs are uniquely positioned to assist their customer in ensuring their business model is appropriate for today’s world.

Summary

The need for SIs will continue as the demand for vertical integration of complex systems and horizontal integration across multiple federal, state, and local government levels increases. The need to support government programs with key expertise and technology is also likely to continue. As the government looks to commercial companies for innovative and leading edge technology to solve hard problems, SIs will play a key role in bringing technologies together in order to deliver a comprehensive solution. One aspect of these solutions will include the need to integrate new technologies into existing architectures and systems in order to reduce cost and risk. Given the SI’s long history and presence in government programs, they will be well suited to assist the government in transforming current programs and technologies to meet these objectives.

One final point to address is the Government-SI relationship and the win-win that must result from their collaboration. Both sides must work to improve trust and remove adversarial undertones that sometimes exist. The performance of the government and the SI directly affect one another and therefore, we must do our best to ensure both remain focused on common goals and that each side comes away from the mission feeling good about the results and that constituents were served appropriately.

Reference