



## Design, Build and Service

Increase Profitability by Providing  
Solutions, Service and Satisfaction  
throughout the Project Lifecycle

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## ABSTRACT

In an era where the competitive market for goods and services continues to tighten, executives of project-driven organizations must increase their emphasis on the creation of extended, profitable relationships — much longer than just the initial sale. To succeed with an increased vertical integration strategy they will need an information-driven infrastructure that will promote quality, enhance sales, elevate loyalty, and increase profitability throughout the project lifecycle. For purposes of this paper, the term “project” will be used to denote the processes associated with the delivery of a tangible object such as a completed building or an installed piece of equipment.

For many project-driven organizations, a project lifecycle can be segmented into three distinct phases: *design, build and service*. In each of these phases the organization that designs, creates and services an end product must have the information necessary to ensure that key organizational parameters (quality, cost, timeliness, profitability and client satisfaction) are met. However, SPI Research has found that the key to sustain growth and maximize returns is to not maximize these individual stages, but to think of it as a complete and interrelated cycle. By integrating the three phases productivity improvement is achieved. The ultimate goal would be to move from thinking “project lifecycle” to a new “project profit cycle”. This SPI Research White Paper outlines the need for an effective information-driven infrastructure that will promote client satisfaction while meeting the company’s financial objectives.

## INTRODUCTION

Many types of project-driven firms provide more than just a product or service. Their capabilities can range from the physical design of an entity, through its engineering, building, installation, to ongoing support. Specific examples of these types of firms involved in the design, build, and service (DBS) lifecycle include: construction owner operator (Design-Build); specialty trades such as heating, ventilation & air conditioning (HVAC) contractors, and engineer-to-order (ETO) manufacturers (such as material handling system) — just to name a few. Each of these organizations conducts some type of design work (engineering to meet specific needs), builds the final entity (a heating system, building or material handling system), and then services (operates, maintains, enhances and perhaps even deconstructs them for disposal at the end of their useful life).

While the above-mentioned organizations differ in the type of projects delivered, each has a number of common goals that include a need to hold down costs while increasing quality, delivering the project on time and on budget, and the need to raise customer loyalty. These issues compete against the demands for high profit margins.

## THE DESIGN, BUILD AND SERVICE (DBS) LIFECYCLE

The term “project lifecycle” defines how many project-driven organizations successfully complete their work by delivering a system or structure. The process requires three distinct project phases:

- Δ **Design:** an initial phase when an entity ( building or equipment) is initially designed;
- Δ **Build:** the physical construction and installation following the design phase; and,
- Δ **Service:** the implementation and long term operation, maintenance and support (throughout its lifecycle).

Each of these phases in the DBS lifecycle has specific deliverables that can affect both the quality of the project, as well as ongoing operational and support costs. The following sections highlight important aspects of each phase.

### Design

During this phase owners, engineers, architects, contractors and other related parties go through the multiple design cycles associated with the creation of the system or structure (from idea to final design). They also develop and understanding of how it is physically positioned within the overall infrastructure of where it will ultimately reside.

### Build

Once designed, the organization must construct or assemble the entity at the desired location. It must understand all of the specific nuances required to assure high quality. It must also understand the construction schedule and have the resources available to complete the work in a satisfactory time and on budget.

### Service

After the “official” construction phase ends, the organization then shifts its emphasis into long term ongoing maintenance and support (operations, if required as part of the contract). This phase, which could last decades, is often overlooked, but is critically important to the long-term success of the project.

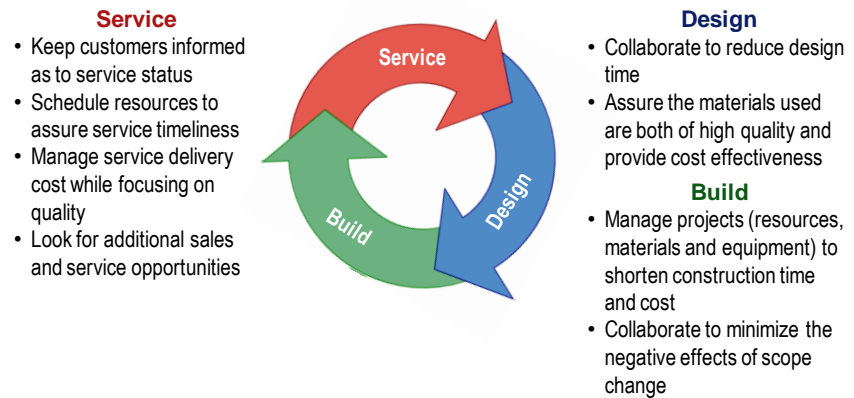
During this phase there may be occasional periods of time when the project returns to the design stage when additional work must be done to accommodate an expansion or addition to the end product. The service organization also has a responsibility, besides maintenance and support, to look for other sources of revenue at the location of the project. It could be another complimentary product or service.

## PROJECT PROFITABILITY THROUGHOUT THE DBS LIFECYCLE

During each of the three phases of the DBS lifecycle executives look to maximize profitability. This goal is accomplished by a combination of increasing revenues and decreasing cost. While each phase of the DBS

lifecycle is interrelated, the type of skills required to increase margins is somewhat different (Figure 1).

**Figure 1: Improvements in the Project Profit Cycle**



Source: Service Performance Insight, June 2008

## Design

Organizations that plan for the DBS lifecycle throughout its three distinct phases will be better prepared than their competitors to win and keep customers. This planning involves looking at the personnel, material and equipment needs throughout the DBS lifecycle. It must have them look at cost and time commitments required to maintain high levels of quality.

Design organizations should have the tools available to reliably design products. Some of these tools include a catalog of materials and their prices, Computer-aided Design (CAD), and project scheduling. There could be a need for the designers to collaborate with customers on the product as they iterate through the design phases. In this case it would be critical to have a knowledge base of the customers and extended design team members available for contact.

## Build

As work begins and there is increased contact with the customer it is paramount to have the right people who can both support the customers as well as look to additional revenue streams within the customer base. During this phase it is critical that the organization collaborates across all interested parties. In the construction of a building this collaboration should take place between engineering, electrical, construction, plumbing, and HVAC, as well as many other supporting parties. Project management is at the centerpiece of the build phase, as well as procurement and cost accounting.

## Service

In both product and project-driven markets there has been an increased emphasis on growing the business via services opportunities. Many companies offer services immediately after the sale of the end product, and

the services are generally short-term in duration. Now there is a growing movement to provide longer-term services that will not only provide the organization with a revenue stream for years to come, but will also offer the opportunity for the provider to sell additional products and services — discretely becoming a strategic partner of their customers.

For instance, an HVAC vendor might sell a heating/cooling system to a customer, while also providing installation services. This contract could be enhanced to provide long-term maintenance services, as the HVAC unit might be in-service for up to twenty years. This scenario also offers the opportunities for the vendor to sell additional products and services such as facility maintenance, security, and energy management. The catalyst for this increased revenue stream is keeping employees of the HVAC contractor in regular contact with their customer, which provides them with operational visibility, and could lead to other sales.

Offering services is a natural evolution for product-driven organizations. Services provide recurring customer contact and create the potential for a strategic partnership that could go well beyond the initial sale. In the technology sector many hardware manufacturers have moved beyond core computer systems and onto service. Many of these companies have also expanded into strategic consulting services, as they have customers around the world with similar issues and needs.

Companies that purchase goods and services have increased their emphasis on cost control given the unpredictable economic environment. This emphasis is both on the spending of new capital equipment, as well as ongoing maintenance and support. As cost becomes a concern many customers have seen service levels lowered over the lifecycle of a product. They have noticed that once the initial sale has been completed it has become difficult, if not impossible, to have services provided in a timely and efficient manner. This scenario invites additional competitors, which in turn could lead to reduced sales going forward or lower pricing — where neither scenario is desirable.

### **Automation and Information Integration is Required**

Ideally, in the DBS lifecycle the workers' processes should be automated, which reduces uncertainty and allows them to complete their work in a clear and structured manner — especially as they work in cross-disciplinary teams that require a certain level of understanding of each other's work in order to efficiently complete the job. These organizations do not have unlimited resources to support their customers. They need to optimize their resource pool, by making sure they have the right resources, working on the right projects, at the right time and at the right cost. The employees must be highly productive, sharing information with each other as needed, and have the tools at their disposal to efficiently complete work.

Over the DBS lifecycle, which could last for decades, the information must be available to support newly added team members so that they can be productive rapidly. The information requirements throughout the DBS lifecycle are critical as even the best people can sometimes be

overwhelmed when they're faced with the dual task of both supporting and selling products and services.

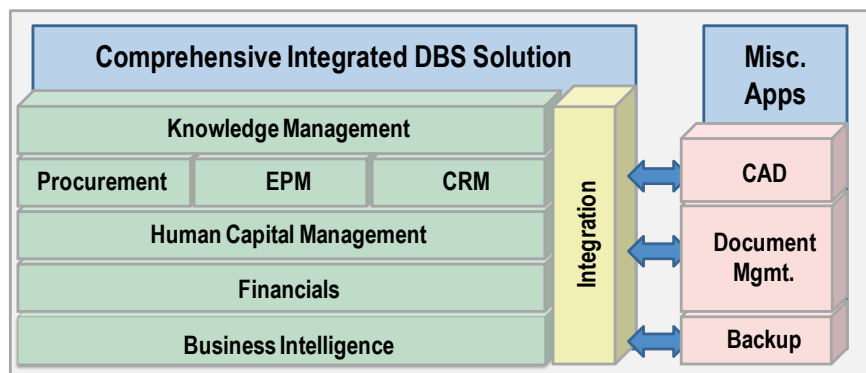
### COMPREHENSIVE SOLUTIONS FOR DESIGN, BUILD AND SERVICE

Business solutions have come to the DBS market that automate and manage core business processes, and provide extensive reporting and financial control. With these tools, executives, other management and other team members have the visibility into the entire DBS lifecycle, with the capability to analyze the design, development, construction, operations, support and customers in real-time.

### Integrated Information Drives Performance

The new information systems are composed of many integrated applications that support the design and build and service process. They begin with financial management, which is the core application in the DBS lifecycle. Other applications integrated with Financials help with the design and build, win business, manage service work, and build customer relationships throughout the DBS lifecycle (Figure 2). The primary applications include:

**Figure 2: Integrated Information Solutions for DBS Organizations**



Source: Service Performance Insight, June 2008

- △ **Customer Relationship Management (CRM):** The management of customer relationships to improve effectiveness with communications, sales and services delivery;
- △ **Human Capital Management (HCM):** The tracking of human resources from recruitment through termination;
- △ **Enterprise Project Management (EPM):** The initiation, planning, execution, close and control of projects and services;
- △ **Knowledge Management:** The ability to store information for collaboration and reuse;
- △ **Procurement:** The acquisition and management of product and service purchases; and

- △ **Business Intelligence (BI):** The assembly and use of information to improve decision-making.

With a comprehensive DBS solution, users have the information visibility necessary to make real-time decisions. The information can be analyzed to further support other initiatives that will help the organization grow.

### Information-driven throughout the DBS Lifecycle

Establishing long-term, profitable relationships with customers takes significant upfront planning and precise execution. The complexity of the DBS lifecycle mandates the need for improved decision-making capabilities. These capabilities should provide the visibility, intelligence and analytics necessary to help decision-makers better understand the choices they face. Leading providers of DBS lifecycle services have turned to comprehensive business solutions that support the design build and service lifecycle of products.

DBS providers need access to information in every phase of the product’s lifecycle, so that they can insure work is being completed correctly, on-time, and on budget (Figure 3). They should have visibility into cost accounting, as well as purchasing to efficiently manage and control costs. They might require project management capabilities, which allow them to accurately track and manage their project responsibilities.

**Figure 3: DBS Lifecycle Needs**

	Design	Build	Service
Customer Needs	Understanding of costs, components	Understanding of time frame and costs	Understanding of costs, issues affecting maint. & performance
Key Questions	What materials will be used? How long will design process take? What are the expected operating costs?	How long will construction take? How many people will be involved? While construction cost?	How often is the periodic maintenance? What will the maintenance cost?
Applications Used	Computer-aided Design, Financials, Procurement, Project Mgmt., Client Relationship Mgmt.	Financials, Human Capital Mgmt., Project Mgmt., Client Relationship Mgmt	Financials, Project Mgmt., Client Relationship Mgmt, Procurement

Source: Service Performance Insight, June 2008

### Comprehensive Information for Different Departments

The information requirements for any long-term DBS lifecycle are extensive. Staff in different departments must have access to the same information to assure work is completed as planned. Ideally, the information provided through the business applications has some level of integration so it can be used to support the needs of other departments.

For instance, as service contracts come up for renewal it is important to understand whether the customer had any specific complaints (through the use of CRM), what products they have recently ordered (Procurement), and what their payment history is (Financials). By having a “complete” customer view it becomes much easier to provide customer support and increase customer loyalty — improving the potential for additional sales.

This integration is especially important at the customer site, where field technicians should have key information at their disposal to efficiently and effectively serve the customer. They may require information that includes:

- Δ Customer contact information;
- Δ Installed equipment and change orders;
- Δ Additional customer needs; and,
- Δ Payment information.

An integrated information infrastructure enhances the organization’s ability to both supply the customer with important information, as well as provide staff with a way to stay current on every aspect of the business relationship.

An important aspect of DBS solutions is that information is available for individuals with different roles throughout the organization, and not just executives. This information is available on an inter-departmental basis, and employees can use their normal business applications for information on other areas that impact their work (Table 1). Employees now have the visibility into ongoing operations and can increase their own performance and provide the highest levels of customer service.

**Table 1: Department Information Needs**

Department	Core Applications	Core Needs
Executive & Administrative	Business Intelligence	Strategic planning, operations
Human Resources	Human Capital Management (HCM)	Hiring, training, compensation
Finance & Accounting	Financials	Financial management, operations, planning, forecasting, budgeting
Marketing & Sales	Customer Relationship Management (CRM)	Marketing and sales programs, sales force automation, customer relations, pricing
Purchasing	Procurement	Material and equipment procurement
Service Delivery	Project Management, Resource Management	Project delivery, quality, time and expense management
Research & Development	Knowledge Management Collaboration Mgmt.	New product & service development

Source: Service Performance Insight, June 2008

These solutions allow users to manage contracts, automate sales processes, track and manage budgets, and monitor and control costs.

They can also track and manage both human capital and assets and show where the organization is incurring excess cost.

Comprehensive DBS solutions can also help lower cost. They enable employees to track and monitor purchases and reduce inventory carrying costs, as they have a better understanding of when the materials and equipment are required. The solution can increase employee productivity as integrated scheduling enables the organization to have the right people available to get the job done, and at an accepted cost. The organization can utilize the collaborative capabilities of the solution to keep team members informed and up-to-date on important activities.

In many cases the DBS organization's partners can also utilize various components of the solution to assure commitments are met on time and on budget. These "partner portals" allow the organization to share information without providing partners access to any sensitive information.

Customers can also benefit from DBS solutions through alerts to critical and timely information that will enable them to take immediate action. They can track costs in the solution and utilize scheduling capabilities to find out when specific maintenance activities will be conducted. These features increase customer satisfaction, which should ultimately improve customer loyalty and help drive additional sales.

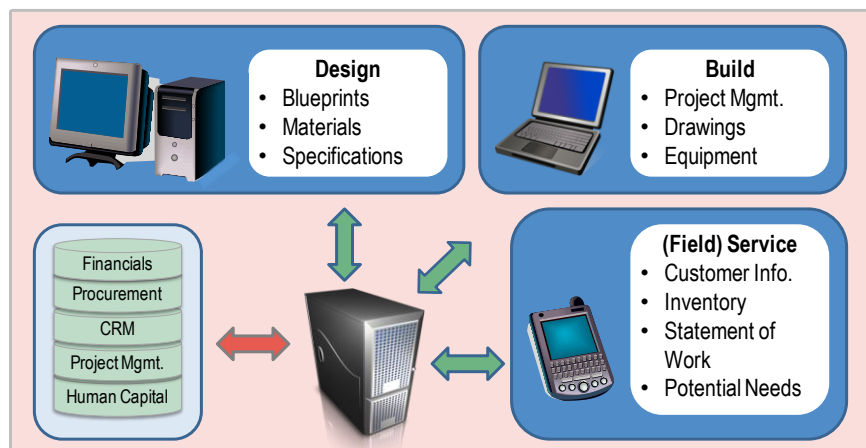
While new solutions do not come with every imaginable application out-of-the-box, they do have the application infrastructure that allows for easier integration with other critical business applications, some of which include: CAD, document management, and backup.

### **Provide Insight to More Workers**

The DBS solution lets more workers collaborate to meet the needs of customers and their own organization, not just executives. They have information that allows them to support the entire DBS lifecycle, from initial design and construction, throughout the ongoing lifecycle services (Figure 4). They have visibility into project-related information that will help keep projects on time and on budget. They can maintain the right mix of skills, assuring that they have the "right people on the right job at the right time."

As more workers utilize integrated DBS business solutions, more information will become available to see the true cost and revenue associated with every customer or project. They can also see products and services purchased by their customers, and this information may provide the insight necessary to sell additional products and services. This information aids in future planning for the company.

Figure 4: Information Delivered across Multiple Organizations



Source: Service Performance Insight, June 2008

## RECOMMENDATIONS & CONCLUSIONS

As the market moves toward more commodity-driven products, an increased emphasis on services will provide a competitive advantage for those organizations that design, build and service products. Managed correctly, organizations can both build and sell products profitably and also can service them over their life — building customer loyalty and profitability along the way.

Information visibility is at the center of the efficient and effective management of the DBS lifecycle. While many organizations use a variety of disparate applications to manage a product's life, economic and competitive pressures mandate the need for a more complete information infrastructure. Now, integrated out-of-the-box business solutions can directly impact each of the three distinct, yet interconnected, phases of the DBS lifecycle.

Executives must begin by reviewing their current application infrastructure, to see whether it meets the organization's long-term strategic goals for efficiency, cost control and customer satisfaction. They must initially begin with their core financial solution to see how easily it can integrate with the other business applications required by various departmental users. If the core financial solution does not provide for cost-effective integration with these other important applications, it might be time to take a new tact.

If the determination is made to consider the purchase of a pre-integrated DBS business solution, then executives must also began an analysis of core business processes, customer interactions, and quality initiatives, to utilize the new solution to optimize resources.

A strong information infrastructure assures employees working in the DBS lifecycle that they have the knowledge to understand each customer's unique installation, current needs and other information from prior contact that could impact satisfaction levels and future sales. Because there will undoubtedly be organizational turnover from both the organi-

zational and customer side of the business — keeping a strong repository of information will help support services throughout the product's life.

The DBS market is entering a new era. Organizations that understand the importance of providing information-driven lifecycle services will undoubtedly be in position to lead the market. Those organizations that continue to rely on less comprehensive and complete information will fall behind, and ultimately fail to achieve their long-term objects.

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