



*"Deep Analysis with Top Executive Perspective"*

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## *SMART* Buyer's Guide to:

# Construction Project & Infrastructure Lifecycle Management Solutions

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2010 Edition

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# Introduction

No matter the economy, companies license new software technologies. Why? Some have outgrown prior solutions. Some are looking for new process efficiencies. Some firms have acquired companies and need a more robust solution. Some need new capabilities to manage their firm.

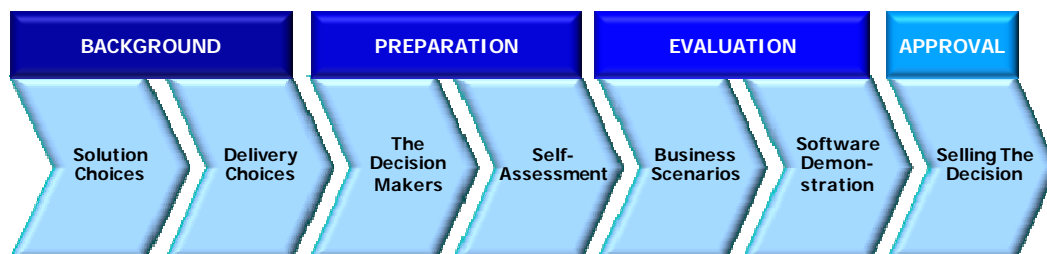
Today's buyer of construction project or infrastructure lifecycle management solutions is often reacting to a number of new market demands and economic realities. These firms need excellent processes as tight capital has meant a lot of competition, low margins and no room for inefficiencies or waste.

The government sector wants to rebuild America's aged infrastructure but the funding to do so, ARRA (American Recovery and Reinvestment Act of 2009), carries with it a number of requirements that mandate better processes and controls in many architectural, engineering and construction (AEC) firms. To win the new work, AEC firms may need a better class of solution. Simple spreadsheets just won't cut it anymore.

## The *Smart Buyer's* Guide to Project Management Solutions

This buyer's guide is designed for property owners and any executive within an AEC organization that is looking at new project management technology solutions. More specifically, this guide is for construction managers, project engineers, real estate executives and line-of-business executives. It should help them equip their organization with the business and decision-making tools needed for future technology success.

There is a smart way to select a construction project or infrastructure lifecycle management solution provider and this guide lays out a quick seven step process to do so. Each section highlights many of the major issues your firm should consider in making a great selection decision. At the end of each section is a checklist for your organization to complete, before moving on to the next step.



The first two sections provide the background you need to evaluate the kind of solution you require and how you want it delivered. We discuss the different types of software your firm could use (e.g., from simple spreadsheets to full-blown infrastructure lifecycle management solutions). We then cover your options from licensed on-premise software to software as a service (SaaS), as well as hybrid solutions.

Next, we describe the preparations your firm will need to make before launching the selection process. This includes the importance of executive sponsorship and how to assemble the selection team that any successful selection effort requires. We then cover the tasks your firm must complete if it is to make a great software selection that meets the current and future needs of your business.

We have also included guidance on evaluating and selecting solutions, including the design and use of business case scenarios. To make that topic even more valuable, we have added a number of relevant business case scenario examples in the Appendix.

We have also included a short section on the software demonstration process and how you can maximize the results of that effort.

Finally, we've added a section that should help you communicate the selection decision to others within your firm.

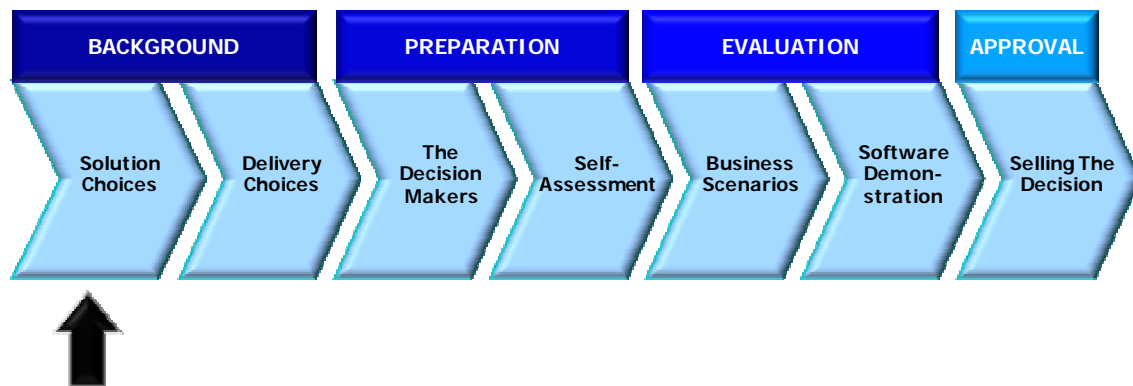
In summary, we believe this buyers' guide:

- Helps your firm get a software selection effort organized quickly.
- Collapses many of the best ideas in construction project management solutions into one, easy-to-read, structured publication.
- Accelerates your learning curve.
- Leverages your pre-existing software purchase experiences.

We hope you find this document informative, helpful and something you'll share with many of your colleagues before you make that next software decision.

Enjoy!

## Project-Based Solution Choices



### No Longer Several Solutions

Look inside many project-based firms and you will often find a systems cornucopia. These businesses often have project data stored in spreadsheets, in a project management application, in the general ledger, in a specialized project accounting system, on paper and even on the dashboard of several field superintendents' pickup trucks. Data is often everywhere and nowhere at the same time.

Project information in this type of dysfunctional world is usually highly redundant, frequently incorrect and late arriving to the people who really need it (if, in fact, they ever get it). The result is managers with no real-time visibility into projects. These are managers who are unable to make timely decisions and often encounter project delays and cost over runs. Those days are going away, thankfully.

Today's project-based solutions buyers can now get highly integrated and functionally complete solutions. Better still, these products:

- Provide a single source of project information.
- Eliminate many of the islands of automation that plagued older solutions.
- Provide real-time access to information.
- Serve an amazingly broad range of users: top-management, clients, sub-contractors, etc.

- Can reach every person involved on a project, anywhere, and on all kinds of computing devices (e.g., desktop, laptop, cell phone) via offline and online access.
- Can help manage all aspects of a project from planning through construction and operation.

As a result, you now have a very different set of decision criteria to consider when selecting new project-based software solutions:

1. It's less likely that you'll need to buy a number of individual component technologies and spend a lot of money integrating these diverse products together. You won't need to buy separate personal computer applications, spreadsheets, project tracking or other solutions. You can get most of this from one provider. Many of the vendors today have created very tight integrations with some of the standalone technologies your staff may be particularly attached to (e.g., Microsoft Excel or Project).
2. Your decision will likely affect your entire enterprise and not just an individual department or project. The days of software vendors knocking on the trailer door of a construction site to sell a highly localized solution have gone away. Today's firms want solutions that bring visibility of every project, every capital asset, every staff person and contractor to all parts of their enterprise. These decisions are moving away from a single project manager and to the executive committee of better-run project-based firms.
3. Newer solutions are being developed to specifically address the needs of various project disciplines and industries. Instead of making do with generic 'tools,' businesses can take advantage of a single system that speaks to their industry practices and processes.
4. The timeframe for project-based solutions has changed, too. Instead of technologies that helped with the planning and managing of a project, newer solutions aid in the operation and upkeep of a capital asset long after the project is completed.

## The Myriad Choices Today

Project-based solutions used to be limited to a few types just a few years ago. If you had one of those older solutions, it was probably a spreadsheet system or an application that ran on a minicomputer. When evaluating today's new solutions, you will find that there are:

- Different solutions for different industries, buyers and business needs.
- Solutions for builders, owners, engineering firms and more.
- Solutions for one project, many projects, complex programs and global enterprises.

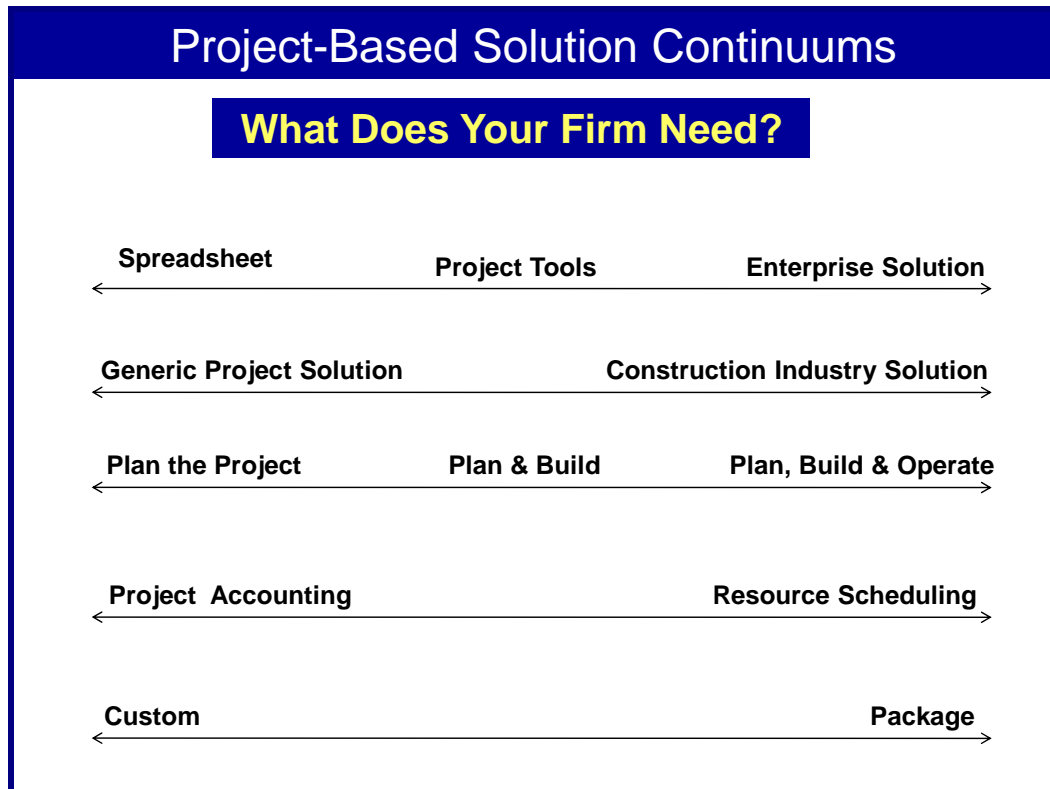
How these solutions are delivered has changed, too. Ubiquitous Internet access and low-cost cellular telephony means that project information can be collected, processed and shared

anywhere, anytime with anyone on the planet. Data now is acquired and presented via cell phones, laptop computers and sensors.

Many software providers have responded to this new environment with enhanced functionality. But, they've also had to create new methods for delivering their solutions. The traditional on-premise licensed software approach is yielding more and more to hosted, or SaaS (software as a service), based solutions. Even hybrid business models are offered by some vendors who want to offer maximum flexibility to their customers.

How project data is being used has changed too. Project data was often confined to a jobsite. It was hard for people on other projects to see or share the information between projects. Top management of construction, engineering, real estate and other firms had to make do with old summarized data. Today, because of the Internet, project data is now available instantly to all team members (program management executives, project engineers, project owners, and outside vendors and consultants). Not only are problems detected earlier but re-work and litigation claims can be reduced with better, timely communication.

As a result, the solution choices have expanded in recent years. There are at least five common solution dimensions buyers must assess. Let's discuss each in order (see graphic below). First, buyers must determine whether spreadsheet technology will suffice or whether a more complete set of project tools is warranted. For some firms, a more integrated project/business solution is needed to run the business (not just a project).



## 1. **Project Tools**

For those solution buyers who just need to plan and track a single project, there are a multitude of **spreadsheet-based products** on the market. These products work well for ad-hoc or one-off initiatives and some firms have been able to manage thousands of projects with this technology. Spreadsheets have limitations when it comes to collaboration, version control, and data latency issues, which can adversely affect data quality and usefulness of the solution.

Some Internet-based **project tracking** or **project management** solutions take a spreadsheet-like technology and extend it across the enterprise to multiple project team members. The Internet acts as the glue that connects all of these players together. These tools mostly focus on critical date and milestone tracking functionality, and are limited in their cost control, project analytics, and scope management capabilities. High-end products include advanced collaboration and other functionality while free or low-cost versions may only support one-user and have limited capabilities.

## 2. **Generic or Industry Specific**

Some companies can be quite content with a **generic project management solution** that solves the project tracking issues for service-based industries employing consultants, accountants, lawyers, etc. Construction and engineering firms often find these generic solutions leave too much of a business process gap, and seek an industry-specific solution that better addresses the workflows, regulatory processes and business needs of their industry.

**Construction industry specific** solutions are tailored to firms in the AEC space. Even these require some differentiation as some are designed for general contractors who self-perform their work, or specialty contractors only. Some solutions are designed for small contractors or home builders, while other solutions are truly designed for larger, multi-project, multi-discipline global firms.

## 3. **Plan, Build and Operate**

The third dimension concerns the business scope of the solution. Do you need a solution to plan a project or something much more expansive? If you intend to use a new system for preparing high-order estimates or for simple projects, then your requirements are considerably less complicated than those needing a solution to plan and build a new facility. And, those requirements are dwarfed by those organizations seeking a solution designed to track an entire portfolio of projects including all building costs, design changes, etc. over the entire life of an asset or structure.

**Infrastructure Lifecycle Management** applications are a type of plan/build/operate solution that is particularly appealing to building owners and manufacturers with large capital building portfolios; real estate developers and management firms; as well as, large public agencies overseeing transportation infrastructure. These solutions track everything related to a large, complex physical asset from initial portfolio planning and budget development, to reviewing construction plans and vendor contracts, through the building process, and to planned renovations and maintenance over the life of the asset.

## 4. **Cost Tracking vs. Resource Management**

Some project-based solutions were designed to optimize the way resources are scheduled while others were designed to capture costs. While both dimensions are needed in any system, the prevailing focus can be seen throughout the product and it will drive how data is collected, what data is collected, and how processes work.



**Project Accounting** systems keep track of project costs. Generally, these systems are adjuncts of General Ledger software products. These products are not well suited to project planning, real-time cost control, and managing the detailed work steps of a project. Project accounting systems are important to firms that must capitalize project costs and/or report project costs to one or more entities (e.g., branches of the Defense Department).

**Resource Management-based** solutions take a different approach. These systems approach labor, equipment and other assets of a company/project as items to be deployed in the most optimal method. These solutions attempt to find the best way to complete work while incurring the lowest costs, minimizing scheduling delays, reducing the need for short-term equipment rentals, etc.

**5. Off the Shelf vs. Custom**

And, lastly, you'll need to consider whether your needs are standard enough to utilize a commercial off-the-shelf packaged software solution. If your current project technology environment contains a number of custom solutions, you will need to assess your ability to accept process flows and business practices used by most firms as those will be part of package solutions today.

This table summarizes the different software solution categories and how they address different capabilities and needs of project-based organizations.

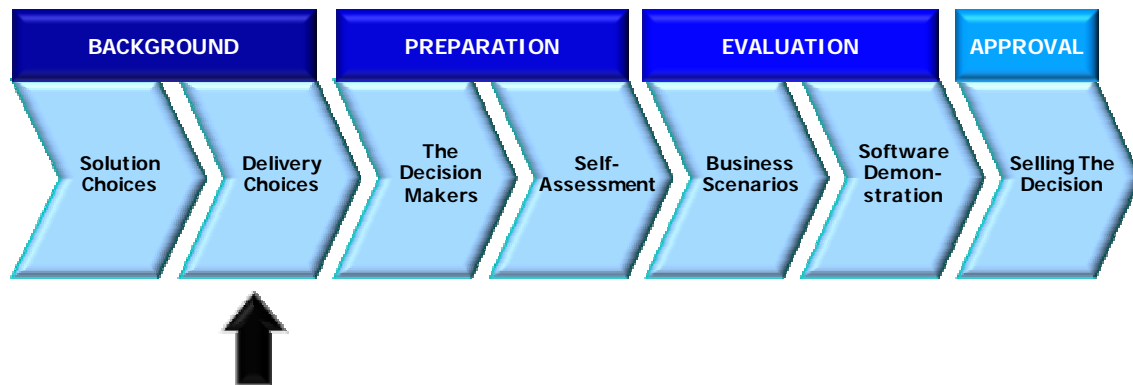
Capability	What Our Firm Needs	Spreadsheet	Project Management	Project Accounting	Infrastructure Lifecycle Management
<b>Plan</b>	Quick, Simple Work Plans	X			
	Project Portfolio Tied to Corporate Goals		X		X
	Permit Multiple Contributors to Plan	LIMITED	X		X
<b>Project Management</b>	Track Project Milestones	X	X		X
	Track Project Scope and Quality		X		X
	Manage Owner/Vendor Relationships		X		X
<b>Cost Management</b>	Budget and Cost Tracking	LIMITED	X	LIMITED	X
	Historical Expense Tracking		X	X	X
	Manage Changes and Track Approvals		X		X
<b>Resource Management</b>	Staffing of Third Party Vendors		X		X
	Resource Tracking and Time Sheets	LIMITED	X	LIMITED	
	Critical Path Scheduling	LIMITED	X		X
<b>Billing</b>	Progress Billing		X	X	X
	Vendor Payment Approvals		X		X
<b>Collaboration</b>	Project Team Collaboration		X		X
	Knowledge Management				X
<b>Back Office</b>	ERP Integration				
	- Financials (GL, AP, PO, AR)		X	X	X
	- HR (Payroll, HR, Time Entry)			X	X
<b>Executive Oversight</b>	Visibility into All Projects		X		X
	Executive Dashboards		X		X
	Global Team Collaboration		X		X
	Analytics/Business Intelligence				X
<b>Industry Relevance</b>	AEC Specific Work Processes (Architecture, Engineering, Construction)		X	X	X
	Renovations and Maintenance				X

## Section One Checklist: Your Solution Needs

Review the checklist below, before moving on to the next step:

- Why is your firm undertaking a project management technology initiative, and why now?
- Can you articulate and quantify situations where late, incorrect or incomplete project information has hurt or cost your firm? Did you suffer brand damage, high litigation costs, penalties, increased regulatory oversight, lost work, non-billable work, etc.? Are these losses so great that new solutions are mandated?
- Is your firm ready to move away from spreadsheets, or multiple, redundant, loosely interfaced solutions?
- Have you prepared an inventory of all of your project-based solutions? Can you identify which vendor makes them, which version they are on, whether these applications are secure, how the data moves to/from each system, etc?
- What are your organization's key project-based needs: project management, project accounting or infrastructure lifecycle management?
- If you previously had a number of custom or customized applications, could your firm now utilize a package solution?
- Do you need a solution that supports construction industry processes and terminology?
- Are there any regulatory compliance requirements that need to be incorporated in the software?
- Can your firm make an 'enterprise-wide' decision? Who can politically pull that off in your firm?
- What business value do you expect a new solution to deliver?

## Solution Delivery Choices



### Which Delivery Method?

By now, you understand what kind of project-based solution choices are available, but you also need to understand how these solutions can be delivered or deployed. The choice of delivery methods is important, as most firms retain their project-based solutions for about ten years.

Today, customers have choices. They can get products that they install themselves. These **on-premise** solutions are still popular with firms that have a number of other, complementary and/or custom applications. These firms want to create a single systems environment that is completely within their control. These companies have dedicated information technology (IT) personnel and equipment to enable, manage, and support their solutions.

With on-premise products, customers assume the expense of the initial software installation as well as the costs and effort associated with all subsequent releases and new versions. For some on-premise solutions (e.g., spreadsheets), new versions of the product may require a new license. For other on-premise solutions, customers that pay annual maintenance fees receive upgrades, patches and phone support.

At the other end of the deployment spectrum is **on-demand** or **Software as a Service (SaaS)** solutions. These products are accessed via the Internet. There is no software to install or hardware to buy. The software runs on a cloud-based server. The software provider automatically applies updates, upgrades and patches for its customers. There is no license to acquire. Customers simply pay a monthly fee for each authorized user.

SaaS solutions have gained significant market momentum in the last few years. Why? These products require a minimal capital expenditure to use, as well as a shorter timeframe to deploy. Customers can avoid buying servers, systems management software, backup/recovery technology, etc. Customers can also avoid the hiring of dedicated personnel to maintain the software.

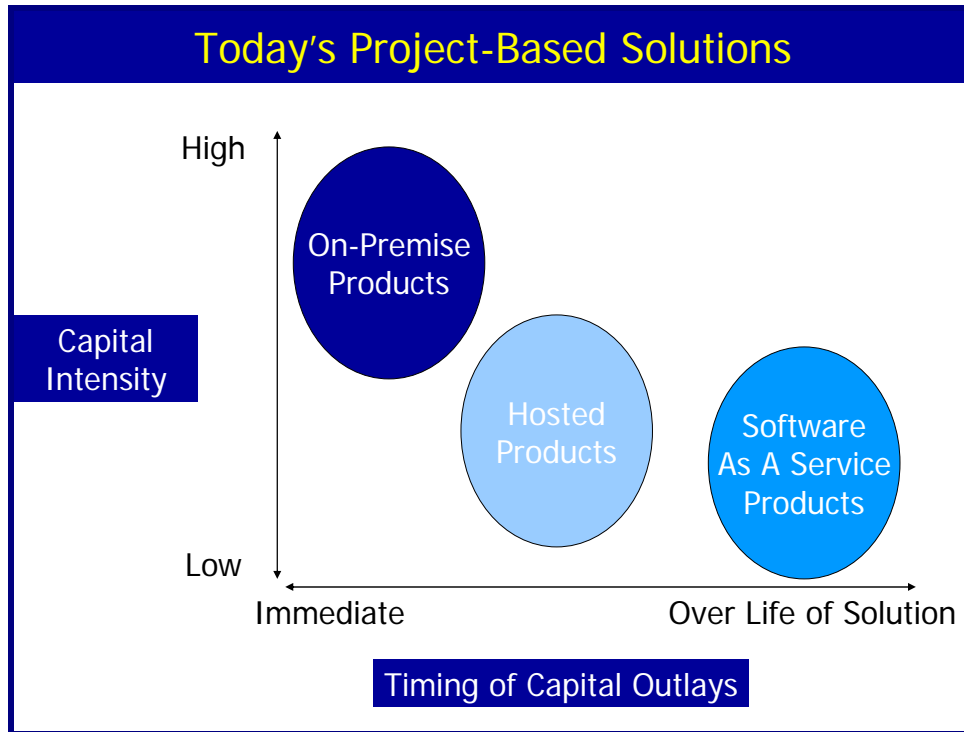
In a SaaS environment, customers must still migrate existing project data to their new technology system and may require other services such as:

- User training.
- Data cleanup.
- Integration of the SaaS software to other applications (SaaS or on-premise) in use by the customer.

Another option is to have the solution **hosted**. In a hosted environment, the customer licenses the software but has the software installed and operated in another firm's computing center. In some situations, project-based vendors offer hosting as one option for their customers. This option has the advantage of being less capital-intensive than an on-premise solution as the computer hardware is owned by a third-party. Customers choose hosted solutions as they may want the freedom to modify or tailor the software without incurring the up-front costs of acquiring computer hardware. Hosting allows them the ability to defer, almost indefinitely, those hardware acquisition costs.

Hosted solutions can often be completed faster than on-premise solutions simply because hosting eliminates delays caused by hardware and systems software component acquisition and installation. Users can often shave weeks or months off of an implementation via hosting.

In SaaS and hosted environments, your company's data will be stored at a third-party's premise on storage systems and disk drives that you do not own or directly control. Some companies may not be comfortable with having their data off-site. In this case, on-premise solutions may be the best option.



Whether a solution is hosted or SaaS-based, there are several items your firm should demand. The most important of these is a service level agreement (SLA). A SLA is essential in defining the terms that measure satisfactory performance of the solution and what remedies exist should a shortfall occur. The SLA will cover items like system uptime, response times, outages, scheduled downtimes and update/upgrade schedules.

One additional option exists. Some creative solution providers also offer **hybrid delivery models**. They can, for example, offer the customer a SaaS solution initially with the option to cutover to a hosted or on-premise model at a later date. Hybrid solutions can go the opposite direction as well. Structuring a hybrid deal may make sense if an organization expects volatility in the number of projects it is managing.

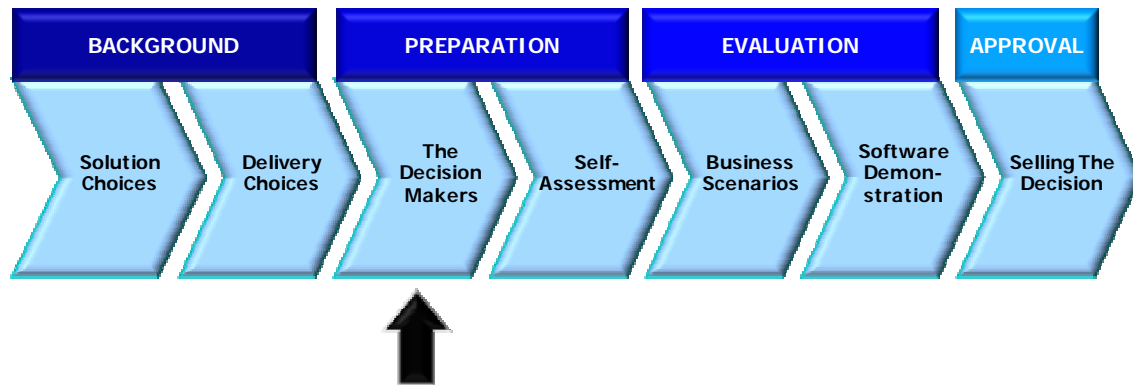
## Section 2 Checklist: Delivery Method

Review the checklist below, before moving on to the next step:

- Can you identify all of the different systems architectures your current applications run on?
- Will new solutions need to work with specific technologies such as smart cellular phones, PDAs, netbooks, CAD (computer aided design) software, and Microsoft Office applications? Can you produce an inventory of these requirements?
- If your firm works with partners, preferred sub-contractors, property owners or other material third parties, do you know if they have critical technologies that should be considered before a new solution is chosen?
- Has your IT group formed any position about the use of SaaS or other delivery models that will limit your potential choices? IT personnel will likely want to review the security, backup, recovery, etc. capabilities of any solution.
- Has your Finance group expressed a preference for one type of delivery method? For example, in firms with constrained capital, CFOs are often very interested in SaaS products. Tax considerations may need to be considered as Finance may want to capitalize implementation costs, but may not know whether it can or should do so for other software expenditures given the delivery method utilized.
- If your firm is interested in a hybrid approach, do you know when you would possibly make a switch to another delivery method?

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## The Decision Makers



### Project Sponsorship

Successful software selection and implementation efforts have one common ingredient: an empowered project sponsor. Software vendors will not engage with prospective buyers unless there is a committed, focused executive spearheading the effort. The importance of a project sponsor to a software vendor is simple: the sponsor ensures that budget monies have been secured for the initiative. Moreover, the project sponsor is now risking his/her career on the success of this initiative. The presence of a project sponsor means that a successful software project outcome is more likely.

The project sponsor is often a member of the company's executive committee. This individual will:

- Secure support for the initiative from other organizational entities (e.g., operations, property management) or functional departments (e.g., Information Technology).
- Procure budget for the initiative.
- Secure critical internal and/or external project resources.
- Approve (and own) the final selection decision.

As with any major software selection, your firm will likely need a project sponsor, a core selection team, a steering committee and input from several business users. External parties may be



required as well. Who are these players? Do you have the team needed to carry this effort, successfully, from selection through to implementation?

## The Internal Project Resources

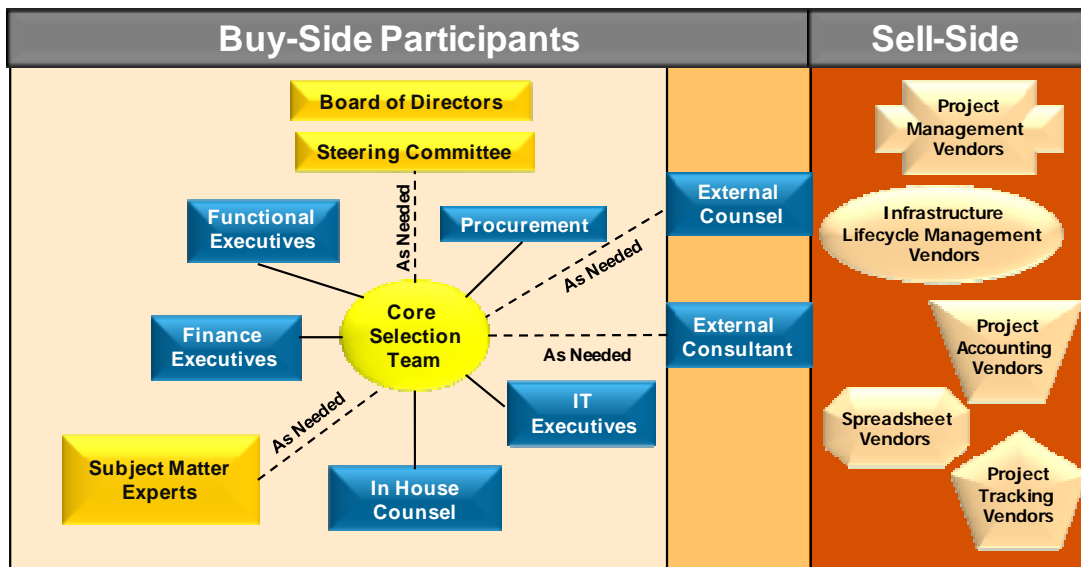
The software selection team will likely contain representatives from:

- Finance
- Procurement
- Subject Matter Experts
- IT
- Legal
- Business Unit Leaders

These individuals are responsible for articulating the company's strategic vision; identifying potential business changes that could affect a software selection decision; developing the parameters for short listing a project-based solution; performing much of the due diligence; and, making the key recommendations to the executive and/or steering committee. In sales parlance, this group represents decision makers and influencers.

A leader needs to be named for the selection team and this may be the project sponsor. The leader needs to have clear backing from the Steering Committee and be able to work cross-functionally. Collaboration across business units in the enterprise will be crucial not only for a successful vendor selection process, but also for application implementation and rollout. This is especially important when the company is likely to adopt a software delivery method that is very different from the one in use (as in moving from spreadsheets to an integrated SaaS application). New solutions are usually accompanied by new business processes and workflows and the leader should be prepared to spend their political capital to move the team through the process, to build consensus for a final decision, and to get the solution implemented with any necessary business process and workflow changes.

## Project-Based Software Selection Players



**Finance** needs to analyze the effect of the software selection decision on the company's capital position, cash flow, lifetime solution cost (or return on investment) and other financial measures. The role of the Finance executive in these project-based solution decisions is evaluating new solution types, such as SaaS (software as a service) which have significant capital and cash flow implications associated with them. A SaaS solution does not require the same upfront capital costs of a more traditional on-premise software solution.

Finance also has a critical role to play during due diligence. A careful review of the capital structure, cash requirements, financial obligations, credit rating and other measures of a vendor's corporate health must be undertaken for each of the short-listed providers.

**Procurement** personnel are invaluable as the contracting process owners. Their core competency is to efficiently and effectively manage the procurement process. Typically, Procurement will control communications with potential providers and guide the negotiations. These proceedings cannot, though, be turned over entirely to Procurement. Project-based selections are not simple transactions. The wide variations in provider capabilities and provider experience make this a team selection effort.

The core selection team will be supplemented with critical **subject matter experts** (SMEs) that intimately understand the affected project-based functions within your organization. These persons know the unique business issues/requirements, project nuances, regulatory requirements, integration concerns, the needs of the broader user community and other factors that must be considered when evaluating new project-based solutions. These individuals will likely be major contributors to the deeply functional aspects of the selection documents, selection process and detailed evaluation of the long and short-listed vendors.

**IT** representation is needed as project-based processes will be integrated with the production IT systems of a company. Many project-based solutions will need to be integrated with applications like:

- **Payroll** – to record time worked by employees on specific projects.
- **Collaboration** – to facilitate the sharing of ideas and documents between project team workers.
- **Design Technologies (e.g., Building Information Modeling)** – to leverage intelligent building models into project costs, budgets and schedules.
- **Financial Accounting** – to record project costs, facilitate depreciation calculations, pay suppliers, track customer payments, etc.
- **Office Automation Integration** – to permit users to work with familiar technologies seamlessly.
- **Microsoft Project Integration** – to permit power users of this tool to continue to use, update and report in Microsoft Project while simultaneously supporting two-way integration with other project management tools.
- **Mobile Device Integration** – to permit all system users the ability to receive critical alerts, status updates and other project documentation whenever and wherever they are.

IT will also want to examine the ease with which each vendor's technologies will interoperate with the company's existing infrastructure. Different vendors use different:

- RDBMS (relational database management systems) or file access methods.
- Systems management tools.
- SOA (service oriented architecture) tools.
- Reporting tools.
- Data Warehousing/Analytics technologies.

IT should provide much of the technical due diligence in investigating the shortlisted providers' systems.

**Legal** needs to be involved from the start of any project-based selection. What exactly Legal will do depends on the kind of solution the company selects. An on-premise solution has different contractual matters to consider from a SaaS or hosted solution. SaaS and hosted solutions have the additional requirements present in a Service Level Agreement. Legal can be most effective when the project team determines early on what type of solution it desires and how it will be deployed.

**Business Unit leaders** from areas such as Construction, Real Estate Management, Engineering, Architecture, Project Controls, Equipment, etc. are often the most critical and knowledgeable subject matter experts within the firm. They must contribute to the team on a full or part-time basis. These executives have significant insights into the current and long-term business needs of the company as well as a deep understanding of specialized needs for their part of the business.

**Other Internal Experts** may round out the selection team or be brought into the process at appropriate times. Persons with significant knowledge of:

- Quality initiatives/requirements (e.g., LEED, LEAN, Earned Value Management.)
- International project management concerns.
- International tax/regulatory matters.
- Data privacy concerns.
- Prior project-based systems in use within the company.

### **Steering Committee**

The **Steering Committee** is a group of the firm's most senior executives. They should be apprised periodically as to the core selection team's progress. These briefings should occur at the completion of key milestones, such as the development of the vendor short list and the final decision. In some situations, such as when the scope and importance of the deal are significant, the **Board of Directors** will also need to be briefed.

## External Project Resources

Some external parties may be involved in the selection on an as needed basis. Large enterprises may acquire the services of an external negotiator. This could be particularly helpful when an enterprise is negotiating a type of transaction that they have had little prior experience, such as SaaS and service level agreement negotiations. Likewise, outside counsel may be brought in to supplement knowledge or experience gaps within the company's selection team.

In some situations, a new system may require sign-off or review from the external auditors. This is a recommended step especially if the new solution will need to integrate project data and expenses into the financial accounting software.

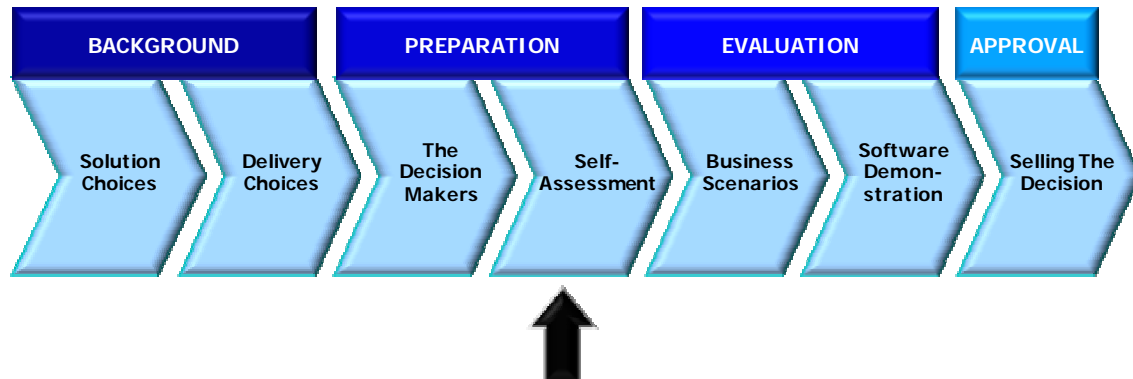
Finally, we couldn't leave this topic without emphasizing that your selection team needs signoff from top management for the initiative, a budget, a leader, a project and staffing plan, as well as a disciplined process. *Anything less for a project-based solution decision would appear less than professional.*

## Section 3 Checklist: Team Readiness

Check all that apply to determine your selection team readiness level:

- Project sponsor has initiated the effort and will support the selection team efforts.
- A selection team has been convened, and an empowered project leader has been appointed.
- The core selection team contains representation from: business operations, legal, IT.
- A steering committee has been established.
- Preliminary discussions with potential outside consultants/experts have been held.
- Top management has signed off on the initiative and the project has been funded.
- The core selection team has defined a preferred deployment option (on-premise, SaaS, hosted, hybrid), and is developing an implementation strategy.

## Self-Assessment



### The Self-Assessment

A company cannot make a great solution decision if it does not understand its needs, business processes, risk profile and long-term plans. Before the core selection team engages with potential solution providers, it needs to take a good look, inwardly, at the company's:

- Project-based processes
- Willingness to change
- Willingness to accept risk
- Strategic imperatives

This introspective review will help the selection team build a credible business case for the project. This effort also helps the team communicate key business needs and priorities to prospective solution providers. Should a selection team try to shortcut this step, it will only result in project delays and frustration. Better software vendors will insist that you have completed this effort as it is too costly for them to try to sell solutions to firms that have unclear, unrealistic or unknown requirements. We agree with vendors on this point.

### Corporate Strategic Alignment

Businesses undergo change more frequently and more dramatically than they usually acknowledge. It would be a mistake for a company to make any software selection decision assuming that the company will remain in some sort of stasis. The global business economy is anything but *ceteris paribus* (all other things constant). Smart buyers should anticipate that change, in general, will definitely occur although what changes will occur may remain a mystery.

The selection team needs to understand, and make appropriate decisions, regarding:

- Future revenues of the company.
- Markets it may enter/exit.
- Anticipated project volume and user count over the next 5 -10 years.
- Potential for acquisitions or divestitures.
- Facilities required to deliver future service/product lines.
- Anticipated capital improvements to existing facilities.
- Capital building investment forecast.
- Changes in the company's expected cost of capital or access to capital.
- Changes in the company's IT infrastructure or technology stack.

Why are these matters important? Traditional software purchases must endure for many years if the customer is to receive any value from their capital expenditure. More frequent solution changes aren't really practical as the switching costs are too high to justify a change. Remember a change in software generally requires:

- File conversions
- Master data cleanup
- User training
- Systems testing
- Interface design
- Change management
- Custom program development
- Software tailoring
- New computer hardware
- New systems management software
- New business processes and workflows

The core selection team needs to understand how:

- Project work will be done in the future.
- The distribution of work (between employees, subcontractors, consultants, etc.) will change.
- Big/small the company will become.
- Competitors will change their work processes and project-based solutions.
- Intense competition will become and from where these competitors will originate.

A list of key planning assumptions is a great output from this step. It can be circulated among the team, the steering committee and others to ensure that the right perspectives are being considered.

While no list can ever be complete, use the following as a starter set of discussions for your analysis:

#### **Economic Factors**

- Uncertain long-term outlook for this industry or inflation concerns?
- Government intervention possible in this industry (ARRA, for example)?
- Better growth prospects available in other countries/markets?

#### **Environmental Factors**

- Industry under attack from environmentalists, media, regulators, etc.?
- Competitors getting subsidized or foreign governments skewing competition?
- Industry facing major regulatory control?
- Non-traditional competitors taking away major market share?

#### **Governance Factors**

- New legal entities will be created to support sales agencies, joint ventures, etc.?
- Stakeholders demanding new levels of accountability from management?
- New corporate performance measures being rolled out?

#### **Operational Factors**

- Company desires more visibility into projects?
- Scale or complexity of projects increasing?
- Too many projects not well documented or understood by executives within the firm?
- Current project performance is in third or fourth quartile?
- Projects supported with old, obsolete or ineffective systems?
- No consensus as to the true status or data behind a project?
- Company wants to manage projects as a portfolio?
- Functions or processes have not been reorganized in a decade or more?
- Most of worker time is spent in transaction processing?
- Other organizations within the company have shadow personnel to backfill for current process/service deficiencies?

Every 'yes' answer needs to be discussed internally to assess the long-term impact on the firm and the software selection criteria. Afterwards, these implications should manifest themselves in the selection documents and the final contract.

## Software Selection Project Charter

A critical component of this self-assessment phase should be the creation of a project charter. This document is meant to help the selection team crystallize its selection decision. It also helps the team agree on and communicate its key project requirements, value drivers and other business needs to prospective software providers.

What goes in the project charter? While formats and content can vary from company to company, essentially a project charter should contain:

- **Prioritized Project Objectives** - what are the top 3 – 5 business priorities that your organization wants to address through this software initiative? (e.g., standardizing project management processes across all construction divisions or projects so users can consistently provide high service levels, and subsequently increase repeat business and lower project litigation).
- **The rationale** why each objective is needed (e.g., our inability to measure project performance and status from a company perspective is hurting us economically. It is causing significant non-value added time being spent by project managers who must manually roll-up metrics or submit status reports in multiple formats.).
- **Key metrics** that substantiate the need (i.e., what value would a new solution bring to the company?).
- **Key capabilities** the company needs (i.e., what are some of the key functional abilities that the solution must address?).

## Corporate Risk Profile and Alignment

Businesses exhibit widely varying degrees of risk tolerance. A key determinant in risk assessment is based on how strategic your firm views its capital project planning and construction processes. For some firms, project management is a core, strategic competency of the company. For these firms, better project outcomes enhance their competitive abilities to win new business, and improve their financial results. Technology that streamlines and improves these processes should be viewed as strategic operational systems.

Business leaders are paid to take calculated risks and to manage potential downside risks. No business executive wants to incur the bad publicity associated with a major project delay, failing to make payments to customers, litigation, etc. The last thing a business owner or executive wants is their photo on the cover of a major business publication with a headline "*Why Company XYZ is Failing.*" As a result, executives do not want to take any unnecessary risks with tactical processes.

To understand how much risk your firm will or will not accept in a potential deal, review the following checklist. A risk assessment is appropriate for screening out several potential solution providers early in the selection process. A more thorough due diligence should be conducted later in the process.



## Risk Tolerance Checklist

<b><u>Any Potential Solution Provider Must:</u></b>	<b><u>Required (Yes/No)</u></b>	<b><u>Comments</u></b>
Have proven success in your specific project space (AEC, Real Estate, Government)		Relevance in one discipline doesn't always mean applicability in other areas
Have a proven track record of customers in your specific industry segment		Isn't a new entrant to the project space
Be experienced servicing global customers		Can provide breadth of coverage and has knowledge of complex business issues
Be well capitalized and have revenues > \$20 million		To provide liquidity and long-life
Derive at least 75% of revenues from project-based solution sales		Shows focus and commitment to the project space
Can sell their solution in a variety of delivery methods: on-premise, SaaS, hosted or hybrid		Provides future flexibility to customers and shows maturity of distribution channels
Provide evidence of strong financial performance and profitable growth		Pick a winner in the making and not a potential failure
Have a positive image in the project and technology press		Find a successful player that will likely remain successful
Employ well-known thought leaders on staff		How can they advance the process if they don't invest in new ideas, thought leadership?
Be well regarded by industry analysts		Usually they possess vendor knowledge broader than your firm
Be free of patent infringement claims, theft of trade secrets or customer litigation		Do they own what they sell? Are customers happy?
Have no recent large layoffs		Are workers motivated and will they do a good job for you?
Not be up for sale or acquisition		New owners may kill investments in current applications
Provide access to their senior management and are attentive to customers		Dispute resolution must be swift and effective

If you/your firm answered "yes" to the majority of the items in the preceding checklist, do not be surprised. Most companies have a very low risk, conservative profile when it comes to choosing software solution providers.

## Maturity Level Concerns

A self-assessment would not be complete if a technology maturity level assessment were not undertaken. In its most simple form, ask yourself if your firm is:

- Dysfunctional
- Functional
- Process excellent; or,
- Transforming the industry

**Dysfunctional firms** are those struggling with their processes (e.g., broken systems, inability to pay suppliers, etc.) or facing economic collapse. For these companies, management has but one objective: getting the company to some sort of functional state, fast. These firms aren't necessarily looking to become world-class overnight. They would be delighted just to be modestly efficient and effective.

**Functional firms** are getting things done but they may be all over the map as to their abilities. Some functions or processes may be world class while all others could be grossly inefficient. For these firms, new software should help the company move to top levels of process efficiency and effectiveness. Most software buyers fall into this maturity level.

**Process excellent firms** are companies that perform most functions or processes at the highest levels. Their interest in new software is rarely to re-automate their processes but rather, they desire new capabilities that can provide them with competitive advantage.

Businesses that are **transforming their industry** are far and few between. Few software solutions exist for these firms as their requirements may dictate custom or one-off solutions.

The wider the discrepancy between your targeted performance level and today's results, the more likely you will need to do some serious re-working of your systems, personnel and processes. In real estate, there are times when homeowners elect to do simple remodeling (e.g., new kitchen countertop), complex renovations (with all of the hidden extra surprises that run up the cost), or, a complete start over (i.e., flatten the old house and build a new). Your dialogue with potential solutions providers should focus heavily on how they assess the current situation (i.e., remodel, renovate, start over) and how they will approach it.

This dialogue is important as you may not want a 'vendor' to provide you with just a software license. You may want a 'partner' who is willing to work with you to improve your firm, make it more competitive and stronger. The difference is critical. A vendor simply has an economic relationship with your firm. A business partner is willing to put some of their economic gain at risk to help your firm and theirs become more successful.

This leads one to get real clear as to the purpose of this deal. Do you want:

- An infusion of new project-based technology?
- An integrated and complete set of business technologies or just a single, technology component?
- To realize better operational results as a consequence of this solution implementation?

- The software provider to help rework/redesign processes to a higher level of performance?
- Lower cost processes by any means possible?
- Process excellence, low cost processes, or both?

Realistically, you should expect most project-based solution providers will help you:

- Improve service levels
- Lower operations costs
- Have more current technology than what you use today
- Move processes to a more efficient or effective level of performance

How much of these benefits you will receive depends on how well your current processes, systems and personnel perform today. Now is the time for the core selection team to decide what it wants from the new solution and solution provider. Do you want a partner or a limited function processor?

## Business Case Components/Considerations

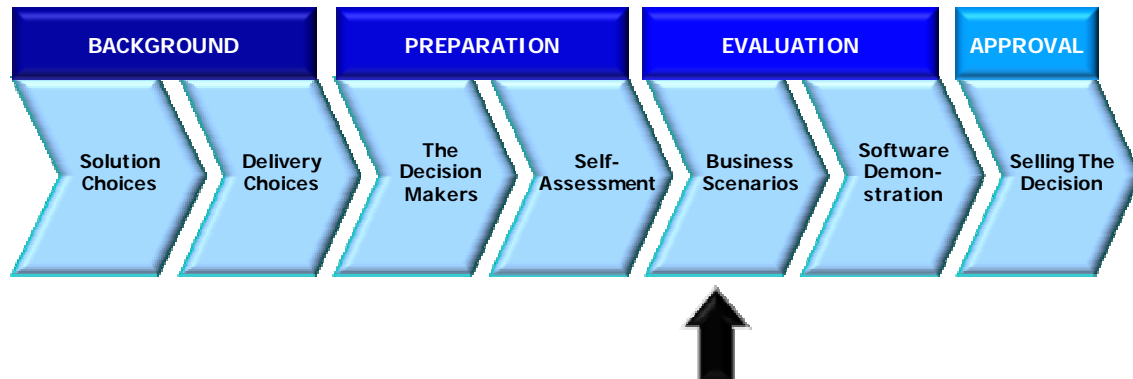
Smart project leaders recognize that different executives within their firm will have a different set of decision making criteria in mind as they evaluate different technologies. Each executive brings a different lens or scorecard to the table. They want to know how each technology meets their needs as well as those of the company. Great selections ensure that new solutions address these critical buyer needs and wants. The chart below provides some of the more common executive criteria you may encounter.

Business Value Perspectives		
CEO	Operations Exec	CIO
<ul style="list-style-type: none"> <li>• Sustained Top- Line Growth</li> <li>• Adaptability to Change</li> <li>• Enabling Entrepreneurship</li> <li>• Cost/Ability to Innovate</li> <li>• Tight Cost Control</li> <li>• Succession Planning</li> <li>• Seizing Opportunities for Expansion/Growth</li> <li>• Transferring Knowledge, Best Practices Within the Company</li> <li>• Reduce Litigation Risk</li> <li>• Broaden Customer Base</li> </ul>	<ul style="list-style-type: none"> <li>• Improve Asset Utilization (e.g., People &amp; Equipment)</li> <li>• Reduce dependency on contract workers</li> <li>• Timely/Lower Cost Bidding</li> <li>• Better Price Discovery</li> <li>• Improve Margins</li> <li>• Geographic Expansion</li> <li>• Improve Working Capital</li> <li>• Six Sigma, CMM, TQM Improvements</li> <li>• Greater use of personnel globally</li> </ul>	<ul style="list-style-type: none"> <li>• Solution Deployment Options (e.g., cloud)</li> <li>• Lower Total Cost of Ownership</li> <li>• Shorter Implementation Time</li> <li>• Integration With Existing Technologies</li> <li>• Facilitate Collaboration</li> <li>• Improved System Up-time</li> <li>• SAS 70 Part II (SaaS)</li> <li>• Reliability</li> <li>• Enhanced Functionality</li> </ul>
<small>Sources: The Conference Board - CEO Challenge, TechVentive, Inc.</small>		

## Section 4 Checklist: Self-Assessment

- Do you know what your firm's technology maturity level is?
- Can your organization identify and agree on the top 3-5 prioritized objectives you want to address?
- Are you committed to making a step-change in business operations (and solutions) improvement? Will you entertain new process improvements?
- Can your personnel adapt to new solutions and new ways of doing business?
- Are there specific fiefdoms, powerful political blocs or clients that will/could derail a new solutions decision? If so, how will you diffuse these objections? Will your steering committee have the authority to bind the company and its people to a new solution and the process changes that go with it?
- Have you discussed long-range strategic assumptions regarding the company and how these might impact a potential solutions decision? How confident are you that your decision can last (and, by inference, deliver value) for approximately a decade?
- Can you define the new ways your firm will want to work and deliver work in the future? Can you describe potential new markets the firm may enter and how your solutions choice will support these?
- Have you polled all affected executives within your firm for their input, guidance, insights, etc. regarding a new solutions decision?
- Can you identify what risk profile your firm has? There's no point in suggesting your firm utilize a startup firm's new solution if the firm has a very conservative approach to technology adoption.
- Which risks would your firm be willing to take (e.g., successful vendor who isn't in every country you need them to be in now)? Which risks are deal breakers (e.g., one year startup with only two customers and negative cash flow)?
- Can you articulate the top three to four value drivers that must be in place for this project to get green-lighted? Can you share these metrics with potential solution providers?

## Scenario Development



### Develop Selection Criteria

Businesses can't make software selections if they don't know what and why they're buying. As straightforward as that sounds, too many software buyers engage with vendors before they themselves are clear on what they want. This creates a bad situation for all parties involved. Software buyers may end up with a poorly fitting product that could cost more and deliver less than needed. Software vendors could end up spending way too much time selling and educating prospects only to lose a deal to a poorly thought through decision or indecision.

When you engage with software vendors, you should communicate the:

- Project management solution charter, which defines process outcomes, not necessarily process designs, that are expected of the new solution.
- Key technology priorities the selection team has re: product functionality, costs, integration, etc.
- Key business scenarios that the technology must address, such as improving project cost control, increasing visibility into project portfolios, lowering project risk through best practices and audit tracking.
- Criteria your team will use to assess or rate vendor viability, solution fit, etc.

## Business Case Scenario Overview

Business case scenarios are a technique used to identify particularly difficult, unusual or complex business problems and relate them to solutions providers. When used in software selections, scenarios help focus software demonstrations away from mundane, non-differentiated function and feature demonstrations. Instead, the value of scenarios comes from the focus they provide on the most important business problems of the customer. When all providers are required to respond to the same scenarios, it prevents the providers from showing the functions and features they want to demonstrate and makes them respond to the scenarios that matter to you.

An example of a business case scenario is presented below. Additional sample scenarios are available in the Appendix of this guide.

## Sample Business Scenario

**Title:** Project Portfolio Performance Tracking

**Role:** VP – Project Engineering, COO

### **Scenario Description:**

We are a North American construction firm with significant divisions set up to serve the transportation and utilities market sectors. Each division has been managing projects with its own technology and business processes. However, to remain competitive, we need to improve visibility into project performance from a company-wide perspective. Instead of waiting each division to manually roll-up their results at the end of each month, we need to create metrics tracking and dashboards that show real-time project status.

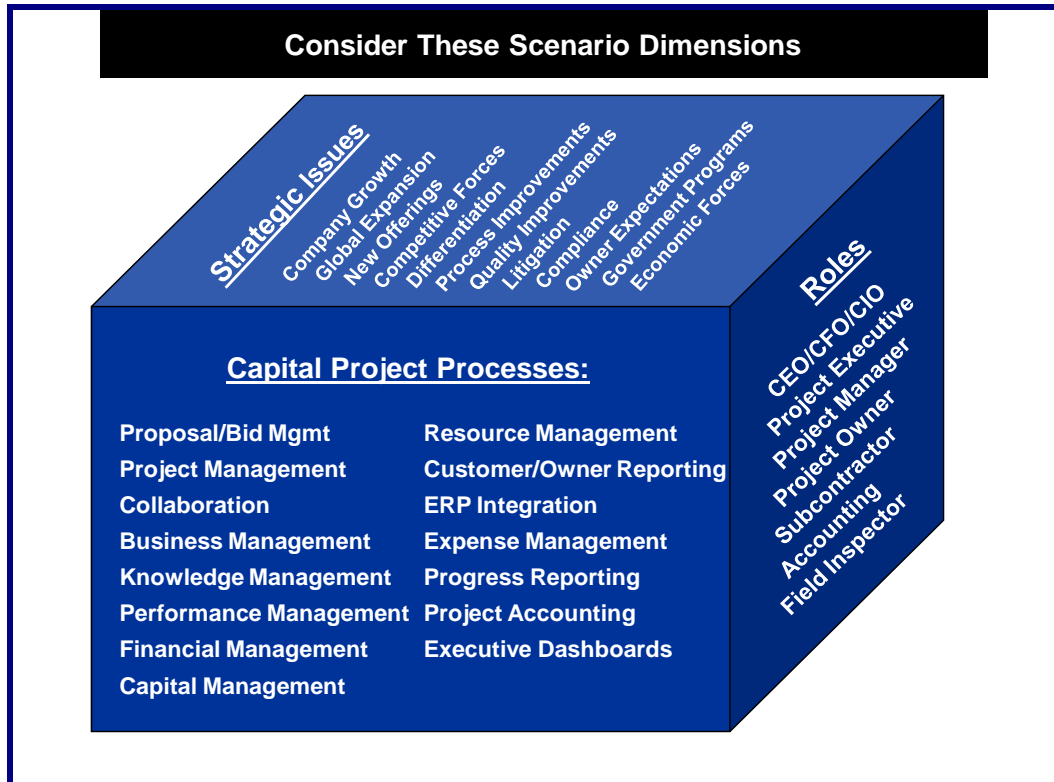
### **The Business Problem:**

How can we track standard project management processes and metrics for our entire enterprise, and quickly identify any performance problems early enough to take action?

### **Please Demonstrate/Discuss:**

- Your solution's ability regarding project and program analytics.
- Your solution's ability to track key performance indicators and to create dashboard views.
- How different project team members and executives can drill down into project details and related documents.
- How many different dimensions of project performance can be provided (e.g., by geography, by division, by market sector, by owner/customer, etc).

Scenarios work best when they are developed across many dimensions. Each scenario should originate from a given role or perspective within the company. Scenarios should consider a number of environmental, process, technology and strategy issues. The more complete a scenario is the more valuable it becomes. Great scenarios clearly communicate a key business problem. The more specificity a scenario contains, the better a provider can respond to it.



Scenarios effectively highlight how different providers' solutions will (or will not) solve material business issues of your firm. The chief alternative to scenarios is the function/feature checklist. While these can be scored and weighted, this technique does little to illustrate the lack of elegance present in some solutions. More to the point, function and feature checklists do little to illuminate how a process works but scenarios do. If you want to see how a prospective provider handles some of your more vexing project-based processes, document them in a scenario. A checklist provides a glimpse into a process' components provided you knew to list them all.

## Section 5 Checklist: Scenario Debriefing

Evaluate vendors using a scenario de-briefing checklist:

Did the vendor demonstrate their ability to resolve the scenario (Y/N)? \_\_\_\_\_

What aspects of this solution were noteworthy? Please describe:

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Was the demonstrated solution elegant in its approach (Y/N)? \_\_\_\_\_ How so?

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What aspects of the solution could be troublesome or require workarounds from your firm?

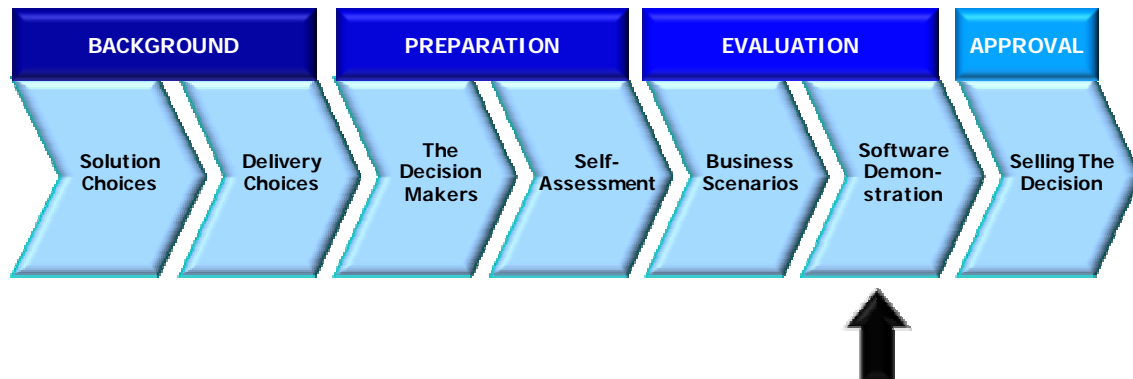
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## Software Demonstration



### Solution Demonstrations

The amount of time your selection team spends on this task is dependent on several factors. Will the provider:

- Use a delivery model different from the one currently in use at your firm (for example, moving from on-premise to SaaS)?
- Materially change the way your firm completes certain processes?
- Present new process improvement opportunities to you?
- Use technologies that are new or foreign to your firm or users?

Budgeting your demonstration time is not easy. Worse, you will likely have time constraints imposed by selection team members who cannot attend all of a provider's demonstration. Structuring technology demonstrations around key business case scenarios allows core selection team members to schedule their time around the most important (or most troublesome) issues they currently have with specific project processes. When a provider sets the demonstration agenda, then:

- The provider will showcase the capabilities, systems, personnel, etc. that they do best and avoid any discussion or disclosure of their weaknesses.
- You have less of a basis for comparing one provider to another. Because each provider's approach and content are different, you will have an apples-to-oranges comparison problem.

For these reasons, your organization should structure the agenda for these demonstrations using the following guidelines:

- Allow each potential provider time at the beginning to make introductions, provide some background on their firm and management team.
- Allot dedicated time slots to address business scenarios, critical processes and service concerns. For example, you may allow the prospective provider approximately 1½ hours per process to demonstrate how a process will now work, identify the new best practices used and explain any system features which may be new to your firm.
- Providers should have an opportunity to wrap up at the end. Let them reinforce their main messages, document follow-up points.
- At the end of each day's demonstrations, the core selection team should meet, privately, to de-brief and document what was seen, heard, understood and, most importantly, what is still vague or misunderstood. It is extremely difficult for people to remember what each provider said, so be sure to document every day's activities.
- Any open issues with providers should be resolved, if at all possible, while the provider is still on-site. For that reason, allow an hour at the start of any subsequent day's demonstrations to clarify any open issues from the previous day.

Also remember that these should be 'solution' not 'product' demonstrations. In the latter, providers show off neat features and functions that may have little or no relevance to your business. In the former, a provider needs to demonstrate how their offering is a superior choice in solving your business problems. For example, a product demonstrator could show you twenty ways and places to enter and update project information. In a solution demonstration, the presenter might demonstrate a self-service portal that lets team members enter key data once and obviate the need for expensive program management personnel to do this work redundantly, if at all. If you stay focused on complete technology solutions, instead of products, your firm will make a smart choice.

Finally, there are some behavior issues you need to anticipate. The two most common are:

- The provider wants to ignore your demonstration agenda and use their own.
- Members of your core selection team elect not to attend one potential provider's demonstration.

In the first case, you need to have someone senior explain, with authority, that this is how the process will work. No exceptions. If a provider won't listen to you before the sale, how bad will they behave afterwards?

In the second case, you must get this individual's commitment to at least attend the scenarios that most matter to them. Failing that, you need to re-schedule this provider's demonstration. However, this should be a last resort as the provider will no doubt have spent a lot to prepare and travel to your facility.

## Section 6 Checklist: Software Demonstration

As the demonstrations progress, periodically review the following questions:

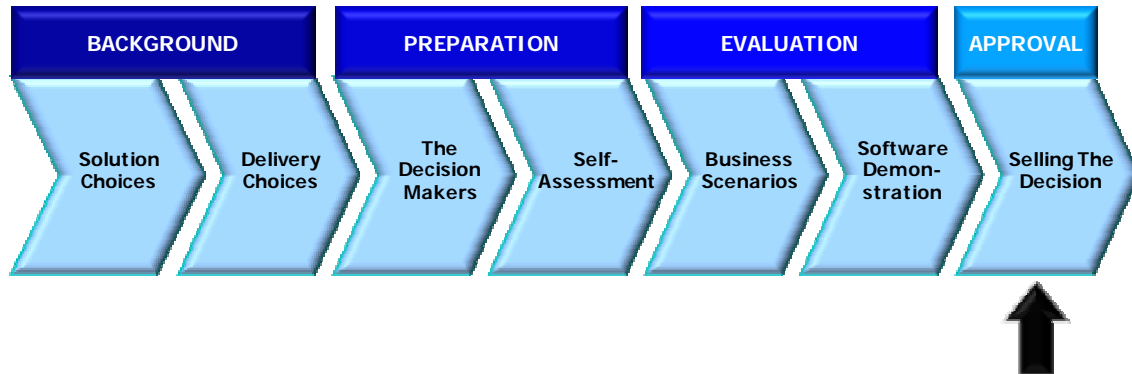
- Did you send the business case scenarios, project charter and other relevant materials at least two weeks prior to the demonstrations so that vendors had adequate time to prepare (Y/N)? \_\_\_\_
- Did you (not the vendor) control the demonstration process (Y/N)? \_\_\_\_
- Did you create a consistent, time-boxed demonstration agenda that all vendors could follow (Y/N)? \_\_\_\_
- After de-briefing with the project team, were project team members uncertain as to whether specific vendors could complete specific scenarios (Y/N)? \_\_\_\_
- If yes, has the team conducted appropriate follow-up meetings or calls with the vendor to bring closure to these items (Y/N)? \_\_\_\_
- Has the project team discussed specific process changes, workflow changes, functional differences, etc. with all affected users (Y/N)? \_\_\_\_
- Has the team reached a consensus as to which vendor: 1) can help them achieve process efficiencies, 2) has the most elegant solution, and 3) can most easily accommodate customer specific functionality (Y/N)? \_\_\_\_.
- Are all evaluation forms completed, open issues settled and management briefed of the team's findings (Y/N)? \_\_\_\_

## Section

## 7

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## Selling the Decision



### Presenting Your Findings

At this point, you've collected a lot of information, shortlisted vendors, listened to numerous presentations, sat through solution demonstrations, contacted reference customers and, maybe, visited the solution providers' home offices. You know what the right solution is and you're ready to move on this. Or are you?

Before you contact any vendor to negotiate terms, you'll need to sell this decision to a number of people in your firm first. They will need to sign off on your choice. The best way to do this is to organize your materials and prepare a great presentation: a presentation that should work with the Steering Committee, the Executive Committee and various groups of users.

How do you do this? It's not that tough especially if you followed the steps in the previous sections of this guide.

We've identified the core components you'll need in an internal presentation regarding this project-based solution selection. Your presentation will need to build a compelling case for change and show a logical, well-thought approach to making a wise solution decision.

If you think you've got everyone on board with the decision and constructed the right deal terms and economics, then you're ready to move from solution selection to the implementation. Good Luck!

## Checklist 7: Contents of a Software Decision Presentation

- Restate the project charter, and key business strategies and concerns the new solution should address.
- The selection team organization chart identifying key participants (e.g., core selection team, process experts, steering committee, etc.) and their role in the selection process.
- Summary of your self assessment including vendor risk tolerance factors, key project-based processes and desired improvement levels, and key technology criteria that must be supported by any solution.
- The category or type of solution desired (e.g., construction specific, integrated, enterprise), the preferred deployment model (e.g., on premise, SaaS) and why.
- Current assessment of existing construction and capital building processes (i.e., efficiency and effectiveness measures, quartile assessments, quality metrics, etc.), and the desired level of process improvements needed.
- Expected value or return on investment to be delivered by a new construction project management solution.
- The comprehensive list of vendors that were considered and the rationale behind which providers were short-listed.
- Results of reference checks with short-listed vendors.
- List of business case scenarios and how each short-listed provider fared with each.
- Additional results from hosting center visits, security tests, pilot programs or preliminary discovery sessions (optional).
- The selection team's decision matrix.
- Key contractual terms and conditions your organization requires.
- Next steps.

## Appendix A – Project-Based Business Case Scenarios

Active software demonstrations require you to plan for the demonstrations. You must collect, document and share with all of the solution providers what you believe are your most pressing business problems, process shortcomings, technical challenges, business fears/risks, integration challenges and value drivers. When appropriately documented, we call these business case scenarios.

We recommend you develop 10-15 business case scenarios. These short documents tell the vendor:

- Who has a problem/concern/material need.
- Why this is an issue and/or its magnitude.
- The specifics of the problem/concern/material need.
- Specific points you want the solution provider to demonstrate.

You should provide these scenarios and a proposed demonstration timetable to each potential solution provider at least two weeks prior to a demonstration.

On the following pages are some sample scenarios to help you kick-start your scenario development efforts.

## Scenario # 1

**Title:** Systems Integration of Project Management and ERP

**Role:** IT Director - CIO

**Scenario Description:**

Our firm currently utilizes several on-premise application software products, the most significant being XYZ ERP software and a couple of design engineering/document management solutions. We also have an outsourced payroll solution and other technologies in our back office. We need a SaaS project-based solution that can interact with these technologies with a minimum of integration cost, short-term and long-term.

**The Business Problem:**

- Our project data must be shared with other critical business systems, so that we don't have duplicate data entry.
- It's critical that we have confidence in the accuracy of our project data, and so we need a technology system that creates on central system, or source of truth for tracking critical project data.
- Data from the project-based solution must also be visible in our ERP applications in real-time. If real-time integration is not possible, what sort of latency should users expect?
- We would prefer a solution that can link scanned source documents to appropriate project records within the project management system, eliminating data entry errors and processing delays.

**Please Demonstrate/Discuss:**

- The solution deployment options you have available, specifically how your SaaS and Managed Host solutions work, and options for integration.
- How cross-system integrations stay current even if your firm updates its SaaS solution data model or application code base.
- What options are available to extending the workflows from my project management system to casual or contributing users out in the field, on a job site, or outside my company (e.g., suppliers).
- What technology platform strategies do you support to deliver true integration flexibility, either in an on premise, or cloud-based solution (e.g., Web services, Service Oriented Architecture, XML).

## Scenario # 2

**Title:** Full Lifecycle Management of Project Portfolios

**Role:** CEO, COO, Other Top Executives

**Scenario Description:**

As a large commercial building owner, our firm manages several capital building and renovation projects each year. We manage complete lifecycles for all our infrastructure assets, including planning and budgeting, building and construction, project closeouts, future renovation and maintenance. Each phase of our projects is managed by different teams, which has created disconnected silos of project information that are stored in different technology systems. We need a single solution that permits us to capture all aspects of a project or asset from planning to construction through operation.

**The Business Problem:**

- We need a more cohesive process in managing our project lifecycle, so we can effectively evaluate potential projects in our pipeline, then easily transfer budget information to the construction team once projects are approved.
- Ideally, we would like to provide a complete record or knowledge base of information (as built drawings, warranty information, vendor contracts, etc.) to the facilities team upon job completion.

**Please Demonstrate/Discuss:**

- How we can identify and manage all potential capital building projects being considered in our pipeline, and develop detailed budgets for approved projects.
- How we can maintain clear document trails, costs and other relevant information throughout the entire lifecycle of a project.
- How can we transfer/share this knowledge base of information, in real-time, with subcontractors, and our operations/facilities teams, etc.
- How your solution can help us manage vendors and contracts, and progress made against those contracts, such as applications for payments, etc.



## Scenario #3

**Title:** Field Connectivity with the Mobile Workforce

**Role:** COO, Operations, HR, Payroll, Accounting

**Scenario Description:**

As a global engineering and construction firm, we have projects in major construction zones throughout the world. Our field staff must capture and record accurate data and activity logs as part of their project management business process. We need to leverage standardized reporting tools and forms, so that data is consistently collected and stored in our central project management system of record. Job sites have varying degrees of connectivity, and field workers need flexibility and easy to use interfaces when working with technology.

**The Business Problem:**

- We need a system that will allow us to enforce our standard data collection processes from all field workers across all of our job sites.
- Rather than giving all data contributors full access to our system, as well as having to provide training, we would like to leverage alternate interfaces, that leverage their existing desktop applications (e.g., Microsoft Excel) as an easy to use method for capturing and submitting critical project data.
- We believe we should be tapping into new technologies to make our processes more efficient, more effective and more real-time.
- While we can't guarantee all employees will always be connected to the Internet at all times, we need solutions that work well online and offline.

**Please Demonstrate/Discuss:**

- How key daily project activities such as time entry, expense tracking, equipment usage, etc. are captured and recorded both online and offline.
- What data collection and data presentation tools exist for smart phones and other devices (e.g., netbooks).
- Show how some information (e.g., weather conditions) can be entered automatically or overridden on specific job sites.
- Show how data such as safety violations, inspections, punch lists, etc. are captured.
- Show how offline data is eventually synchronized and reconciled.

## Scenario #4

**Title:** Flexible Access to Project Information

**Role:** Various

**Scenario Description:**

As a large program management firm, we serve a wide range of users, including top executives, subcontractors, project owners, suppliers, etc. Our current technology solution treats all users' needs the same with only one standard interface that you can use to interact with the system. Our business relies on our reputation to provide accurate information and project status to our clients, as so we need more flexibility in how we let our various users view, edit and report project information.

**The Business Problem:**

- We need a wide range of systems access to support top executives, sub-contractors, property owners, suppliers, etc. Each type of user must have access to the information they need to do their job well; however, they should not be given unrestricted access to all data within the system.
- We need a solution that adapts to specific roles or groups of users, and provides a tailored interface based on their tasks and data needs. To help our implementation be successful, we need a combination of a fully-featured project management system interface for our power users, while also providing a data connection from contributor users' familiar desktop applications.
- Without this capability, we cannot share critical information with our internal and extended project team constituents. This impacts our ability to work efficiently and effectively. It also increases the probability of increased project costs, lower project profitability and higher litigation costs.

**Please Demonstrate/Discuss:**

- Different user profiles, security settings and options for alternate "role-based" interfaces and data access, including the web, desktop client server applications, Microsoft Office business applications, and deployment alternatives.
- Identify key differences in data access and update capabilities between internal/external users, casual users, executive users, etc.
- Discuss how the profiles support different data access devices (e.g., smart cell phone).

## Appendix B – About Vital Analysis



Vital Analysis is a very different kind of technology research organization. We are the intersection set where exceptional technology market knowledge meets the executive suite. Where other 'analysts' replay vendor press releases, we give you the:

- impact new technologies will or won't have on your business
- reasons why you should or shouldn't care about specific emerging solutions
- business justifications why you may or may not want specific solutions

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Our reach, like our blog readership, is truly global. We've consulted with top technology executives in Australia, North America, South America, Asia and Europe. We've been briefed by technology providers from virtually every corner of the planet.

### About the Author

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