

The New Fix

Making the Most of SharePoint

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The Challenge

Business needs to generate revenue, control costs, delight customers or citizens, and keep staff motivated and productive; all while budgets and workforces contract. Technology—and software in particular—should play starring roles in achieving all of those outcomes but, as is well known, it often doesn't work out that way. There's a disconnect and it's getting worse in a recessionary environment.

On one side, business leaders are under unprecedented pressure to grow bottom line, innovate products and services and delight all stakeholders, while managing costs. On the other side, small(er) in-house technology teams are overburdened as staffs struggle to maintain legacy applications while trying to embrace new technologies.

“A weak linkage to the business creates a void that limits the quality of the resulting IT architecture and the organization’s ability to enforce and sustain the benefits of implementation over time.” (Rey, 2010)

Figure 1

The Promise of SharePoint

In 2001, SharePoint was first introduced as SharePoint Team Services as a part of Microsoft Frontpage. Today SharePoint has become one of the most successful enterprise software applications of all time, used by more than 17,000 organizations throughout the world in 2009 (Microsoft's SharePoint Thrives in the Recession, 2009). In explaining SharePoint's popularity, one benefit rises above many others: accessibility.

SharePoint revolutionized enterprise collaboration as a platform everyone could use. Whether trained in software development or not, users across functions could understand, create, use and benefit from SharePoint for a very wide array of purposes including:

- Simplifying and speeding access to information via search;
- Workflow and eliminating the huge numbers of paper forms that overwhelm so many enterprises;
- Transforming any enterprise with real collaboration that produces results;
- Establishing or improving nearly any kind of inefficient, redundant or broken workflow;
- Delighting stakeholders with fast and accurate service;
- Significantly boosting productivity across all staff in the organization;
- Facilitating enterprise application integration;

In a sense, SharePoint is revolutionary as a flexible, intuitive and affordable rapid development platform.

The Challenge of SharePoint

Throughout the enterprise, the signs of business complexity are all around us. Organizational structures and silos are more complicated in the wake of too many restructurings. This impedes effective internal communication and collaboration. Rules, procedures and documentation requirements have mushroomed making it near impossible for workers to keep pace. Customers and citizens are more knowledgeable and much more demanding, placing unprecedented pressure back on the organization and its staff.

Despite SharePoint's tremendous potential, many organizations implementing it have found that it can become unmanageable and actually exacerbates the enterprise and IT complexity it's intended to lessen. Simply stated, SharePoint is a game-changing platform but it is software. As such, it isn't immune from the challenges faced with any software implementation.

Such challenges include:

- A lack of clear direction or objectives;
- Prioritizing technical solutions over user and business needs;
- Unintended conflict and paralysis driven by struggles integrating SharePoint with existing software ; Lack of structure to support changing requirements and priorities;

SharePoint has been used in many organizations in ways never anticipated or planned. Companies need to find a “new fix” to manage SharePoint and realize more of its potential.

A Counterintuitive Solution

Leading organizations use great process to manage most aspects of their businesses. From ensuring efficient procurement and effective customer servicing to complying with financial regulations and recruiting and retaining great staff, winners think about process differently than also-rans in industry after industry.

The “new fix” is to manage SharePoint deployments in the same manner. Great process in this context is called “Application Lifecycle Management (ALM)” and it’s a philosophy much more familiar to software engineers than it is to business leaders.

As seen in work with many client organizations, SharePoint can be transformative when implemented with an ALM process. The goal is to empower users with the technology while maintaining control of this critical asset to the enterprise as it grows. The idea is not to limit how SharePoint is used, but to create the right environment to harness the creativity for successful solutions. SharePoint has become a development platform and related projects should be treated as such with the same eye towards methodology, management and reporting.

There are many ALM methodologies and each IT organization may have it’s own flavor. One methodology, in particular, Capability Maturity Model Integration (CMMI) is well suited to show the impact that an ALM process can have on software development and implementation as evidenced through Motorola Software Group results shown below.

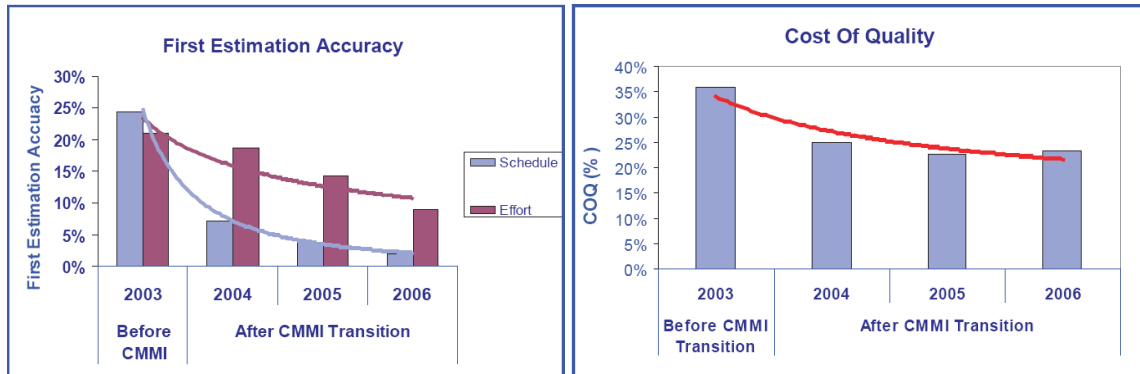


Figure 2

Through their improved project planning, estimation, and tracking practices, Motorola was able to improve its initial effort estimation accuracy by almost a third, 56.94 percent, as the organization moved to CMMI® maturity level 5 from its SW-CMM® maturity level 5 baseline. During the same time period, the accuracy of estimated schedule duration improved by well over three quarters, 91.77 percent, over its performance at SW-CMM® maturity level 5. The percentages shown in Figure 2 First Estimation Accuracy are based on the absolute values of the differences between the respective actual and estimated values divided by the original estimates for each time period. Also as a result of improved verification processes, particularly product peer review and software test processes, MSG China was able to reduce its overall cost of quality by over one third, 34.85 percent, from its pre-CMMI® baseline . (Liu, 2006)

For a quick primer on ALM, please refer to Figure 3.

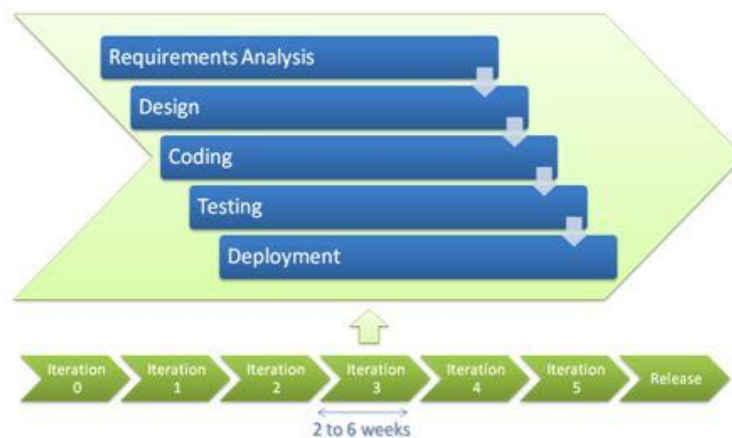


Figure 3

ALM includes many disciplines such as requirements analysis, design, development, quality assurance, build and deployment and the disciplines to manage these areas such as project management, requirements management and change management.

So, summarizing where we are at this point:

- Software development teams in most organizations, however small or large, have the essential tools to implement transformative technology with ALM guiding every step
- SharePoint, already owned by most organizations, represents a huge opportunity to tackle key business priorities
- However, SharePoint's potential to impact business outcomes isn't fully realized in most organizations
- As a result, many business challenges remain more persistent than necessary

How can organizations more fully realize SharePoint's potential? How can traditional software development process (and tools) turbocharge SharePoint and boost business results? What specifically should enterprises consider doing?

Answering these questions is best done with an organized examination of common challenges in SharePoint implementations and the associated opportunity for ALM to be the "secret sauce" for these efforts when used innovatively in tandem with the IT organization and its end users. Five areas are particularly critical to get right for successful SharePoint implementations:

1. Effective Governance
2. Change Management
3. Architectural Strategy
4. Environment Management
5. Test and Quality Planning

Effective Governance

“The goal of clear governance is to assure the investment in IT general business value and mitigate the risks that are associated with IT projects.”¹ A lack of governance drives unwanted complexity in the form of more technology problems than answers, implementations riddled with defects, loss of information, and a demoralized user community. Ultimately, ineffective or non-existent governance results in a crisis of user confidence and wasted resources.

No matter what the size of an organization, the first step toward successful technology implementations is policy planning for the use and support of the solution or application. Most IT teams already have the backgrounds, skills and tools needed to provide leadership in this area. However, traditionally IT governance begins and ends with the IT department. It is critical to involve business leaders and end users in the governance process. It is particularly important with SharePoint because of the empowerment and control SharePoint allows this community.

We recommend creating an internal “SharePoint Governance Committee” with representatives from every major department to champion appropriate initiatives and needs for SharePoint, working closely with IT staff, to maximize value for everyone.

To help these committees plan, implement and manage change within and between SharePoint environments, traditional application lifecycle management methodologies will help. For example, managing needs with requirements, user stories or scenarios allow for requests to be prioritized and traced through deployment.

So, how do you get a SharePoint Governance Committee started? Start with willing business stakeholders who anchor and align SharePoint to business needs and then add technical leaders in supportive roles. With such a committee, a foundation is established for effective SharePoint governance. Who does this involve and why?

¹ Smallwood, Deb. Tech Decision CIO Insights. "IT Governance: A Simple Model." March 2009.
http://www.ebizq.net/blogs/insurance/2009/02/it_governance_a_simple_model.php

Role	Responsibility
Senior Business Leaders	Executive Support Strategic Direction Support Policies
Key Business Unit Staff	Requirements Definition Testing Content Management
IT Infrastructure Personnel	Hardware Security Architecture Topology Administration
Application Development Staff	Customizations Integrations Testing

Figure 4

Change Management

In businesses of all types, whether public or private sector, users are famously resistant to change. Because much has been researched and written about this, we won't spend a lot of time on it here, taking it as a given that it is, in fact, a huge problem for business and technology transformation.

To be fair, change can be difficult to embrace. Thus, the truly challenging part of any project is often helping employees to embrace a new way of doing their work. Managing resistance to change is very time intensive and taxing for the organization since accepted practice requires: soliciting broad input, systematically documenting concerns and thoughts, shepherding the project from initiation to completion, and keeping all stakeholders up-to-date with project progress. This challenge must be acknowledged from the outset so it can be effectively managed. Implementing an effective change management process, as found in an application lifecycle methodology, will help fortify SharePoint.

Case-In-Point

Situation

At a major pharmaceutical organization, change requests are managed in an Excel workbook on a file share – rarely shared and rarely updated. Users lose confidence that requests are taken seriously, if at all.

Action

Change requests are entered into a new central repository and shared and managed in a SharePoint team portal.

Result

User satisfaction soared and the implementation pace accelerated with streamlined communication.

Figure 5

Effective organizational change management requires a communication mechanism that empowers users by keeping them informed, so resistance to change is lowered and stakeholder acceptance is achieved.

Application Lifecycle Management methodologies have standard reports which can be shared with stakeholders to increase awareness and engagement. Reports that are of high-interest to stakeholders include the following:

- **Progress Dashboards:** shows data to help monitor progress and issues.
- **Burndown reports:** shows the trend of completed and remaining work over a period of time
- **Product Backlogs:** lists all requirements, user stories or scenarios allowing stakeholders to see their requirements faithfully documented as a part of the solution.

Changes for SharePoint can come in all forms – granting users access to secured sites, creating new sites and portals, customizing a document library or a SharePoint list, and more. Many requests can be handled by site or site collection administrators. However, when IT support is required it is best managed through the traditional chain of command. Providing a central facility to make and manage change requests can greatly enhance response time, prioritization, assignment and audit ability while also providing user feedback and traceability of the request for later analysis. When requirements and change requests turn into custom development, the source code, database schemas and other artifacts need to be managed in source control. Traditional software configuration management strategies should not be overlooked with SharePoint custom development.

Architectural Strategy

Once deployed, SharePoint is extremely accessible to end-users who can customize for their own purposes, add new sites and sub-sites, and much more. However, this ease of use often results in *information sprawl*: duplicate documents and general confusion about where information should be stored and can be found. If such a situation is left unaddressed, SharePoint can devolve to a mere website enabled network share and the development tool and team boosts can go unrealized. In the same light software engineers often under estimate the need for sound architecture and design of SharePoint solutions.

IT departments have long managed the above challenges by employing Information Architecture Design techniques. Information architecture is the categorization of information into a coherent structure, preferably one that most people can understand quickly, if not inherently.² Information architects need to collaborate on their designs and bring higher order with SharePoint through information modeling.

² Information architecture. (2010, April 6). In Wikipedia, The Free Encyclopedia. Retrieved 16:47, April 7, 2010, from http://en.wikipedia.org/w/index.php?title=Information_architecture&oldid=354334199.

SharePoint is a fundamentally-different platform from nearly every other enterprise solution. This is especially true due to its versatility to be a solution to such a wide range of business challenges. As a result, some organizations struggle to effectively develop SharePoint custom applications. As example, one large county government had struggled on their own for over a year to deploy custom solutions, each time resulting in a SharePoint reinstallation due to system corruption. The team did not understand the SharePoint application architecture, the SharePoint object model or SharePoint native capabilities. Developers were making direct modifications to the site pages rather than creation and deployment of SharePoint solutions. This approach made successful deployment from development to production environments impossible and caused corruption in the production environments.

Environment Management

Organizations with only one SharePoint environment (essentially the production instance) can suffer from unexpected system changes and poor reliability. At one organization, the IT team created a simple SharePoint environment for managing and collaborating on ongoing IT projects. As the site became more utilized by team members outside of the IT organization customizations were increasingly requested, developed and deployed in this single environment. The customizations were made in the production environment because it was the only environment. The customizations and modifications to security settings resulted in users being locked out of their own work. In retrospect, this should have been expected when developers and site administrators were allowed to use the system without protocols and process for proper usage. In SharePoint some changes can and should be made directly to the production servers. Unlike traditional development, configuration and content management changes in SharePoint do not always require extensive testing in isolated environments. However, as this organization quickly learned, many situations like the addition of custom webparts require a more traditional form of environment management to prevent production issues.

The governance team should define what types of changes should go through the environment promotion process and whether it should be promoted through multiple environments. To manage critical changes and custom development in SharePoint, multiple SharePoint environments should be created and utilized as described below in Figure 7.

Environment	Used For
Development Integration	Integration testing for developers. This provides a faster way to test new software without hurting the entire organization
Test or QA	Regression and System Integration Testing and problem reproduction; less wasted time, fewer endless loops and frustrating debugging
Training	User training on a system which looks and acts like Production results in accelerated acceptance and maximum value from SharePoint.
Pre-Production	Final test bed for multiple releases after QA but before Production to ensure Production upgrade will proceed smoothly, reliably and without work interruption.

Figure 7

Additionally, automating the build and deployment to these environments will save time and effort for the operations team. Just like any custom development, build tools for SharePoint should provide the mechanism needed for manual or automated deployment, continuous integration and gated check-ins. These tools reduce cost, improve software quality and increase SharePoint reliability for custom-built solutions.

Test and Quality Planning

As with any software, systematic testing before full release is essential to minimize later disruption and disappointment. Testing is a core element of effective ALM and the consequences of not planning for it include lost productivity, serious hits to staff morale and waste that can be measured in months and millions of dollars. So, consistent with good ALM discipline, planning for testing is critical to ensure a successful SharePoint implementation.

However, a careful balance must be struck when testing for SharePoint. A traditional IT approach to testing can be overwhelming to end users who are not familiar with testing methodologies. Site administrators who are outside of the IT organization should be aware of the impact their changes can have upon end users and plan to test according to the defined requirements. For example, when a custom workflow is requested, the workflow should be sent through various scenarios in a QA

environment and approved by the requestor prior to being implemented in a production environment. Left untested or deployed directly to production, workflows can impact user productivity, degrade server performance and cause credibility issues in the organization.

While many updates and changes to a SharePoint environment do not require a formal test plan, more sophisticated custom applications and workflows absolutely require it. In a large, several thousand person organization, a SharePoint problem resulting in a small delay in service availability can result in an intolerably high cost to the organization for a one time outage. That's why we recommend more rigorous testing for more impactful changes, including functional and performance testing to model the employee load during various times of day.

A good test tool should provide a testing facility to conduct and manage performance tests, load testing and manual tests. The toolset should also allow the testing process to be automated and incorporated into the build process. This improves the efficiency of the quality assurance process and allows SharePoint to be the rapid application development platform it can be.

Case-In-Point

Situation

An environmental manufacturing organization deploys SharePoint to collaborate with their external clients on projects. The server software was deployed on an underutilized server. Access to the server was slow and unpredictable causing credibility issues for the organization.

Action

Load testing was performed on a new server to establish performance prior to giving clients access.

Result

A confident user community was able to adopt and expand client service and collaboration capabilities.

Figure 8

Taking the Next Step

In thinking about the critical problems faced by all types of businesses today, technology (and software development in particular) must play a central role. But, as outlined in this paper, the associated challenges are significant while the solutions less evident. SharePoint represents significant latent opportunity for many organizations due to its accessibility, versatility and affordability.

The Microsoft ALM development tools, Visual Studio and Team Foundation Server, can assist organizations in managing and deploying effective SharePoint solutions by managing the ALM process whether it is CMMI, MSF for Agile Software Development, Scrum or another ALM methodology. Visual Studio 2010 comes with ready-to-use SharePoint templates that accelerate the development process by including everything needed to quickly take advantage of SharePoint features. Team Foundation Server is integrated into the Visual Studio environment and includes a SharePoint portal for managing and communicating project status. The tool also provides mechanisms for project management, requirements management, change management, source control management, builds, testing and architectural models in one integrated environment. Team Foundation Server supports SharePoint and can be a powerful, cost-effective, versatile and accessible answer when implemented with process discipline inspired by ALM. Organizations should take advantage of the development practices that are critical for all IT development and not view SharePoint as software not requiring good process. SharePoint is an intuitive and user empowering tool once successfully implemented. IT needs to open the door for expanded involvement and responsibility in governance to the general business units. Also, organizations should avail themselves of local SharePoint user groups, professional consulting support, and training.

Behind This Paper

Microsoft, the world's largest software company, is the creator of SharePoint and the most complete and integrated ALM toolset for business units and development team collaboration, Visual Studio and Team Foundation Server 2010 (TFS).

www.almcatalyst.com

Adventos is a Microsoft Gold-Certified partner with deep experience managing the technology, process and people aspects of successful SharePoint implementations. Adventos is a leader in instilling ALM discipline to SharePoint deployments.

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Works Cited

Limited, D. M. (2007, August). IT Projects: Experience Certainty. *Independent Market Research Report*. Dynamic Markets Limited.

Liu, A. Q. (2006, August). *Motorola Software Group's China Center: Value Added by CMMI*. Retrieved May 5, 2010, from Software Engineering Institute: <http://www.sei.cmu.edu/research>

Microsoft's SharePoint Thrives in the Recession. (2009, 8 7).

Rey, H. B. (2010). Why business needs should shape IT architecture. 19.