



# Architecting SharePoint for Work & Project Management

## The Workplace Architecture Guidance Process

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## Introduction

Microsoft partners, for example, BrightWork, EMC Consulting and Habaneros, successfully architect, deliver and deploy Microsoft Office SharePoint Server 2007 / Windows SharePoint Services Version 3 (referred to as SharePoint hereafter) solutions to customers in all business sectors. This is one in a series of three white papers where these companies share the experience they have gained through successive projects to help you to approach the architecture of SharePoint solutions in a structured way.

SharePoint provides a single, integrated system where employees can efficiently collaborate with team members, find organizational resources, search for experts and corporate information, manage content and workflow and leverage business insight to make better-informed decisions. SharePoint is above all a collaborative platform that can easily be extended to build business solutions. BrightWork, a Gold Certified Microsoft partner, works with customers to architect work and project management solutions on SharePoint. This white paper reflects our experiences.

SharePoint is capable of handling many different business workloads. A classic example is of course a web site built on SharePoint. While this is great use of SharePoint, consider that an organization typically only has one web site, albeit with many users of course. Consider that today the business workload of project and program management, where organizations have hundreds, or in some cases thousands, of projects, involving both internal and external parties. Consider also that many of these projects are run on email, Microsoft Excel and shared network drives. Collaborative project and program management is a business workload very suited to SharePoint.

The objectives of this white paper are:

- To outline a six-phase, generic process that will help you to architect a SharePoint solution from the ground up for customers seeking to use SharePoint to manage work processes, projects and programs
- To examine some of the key architecture-related steps within each phase of the process in more detail, identifying what the problem or challenge is and outlining the main actions required to address the challenge
- To provide you with good practice guidelines and useful hints and tips that create a framework within which you can architect effective SharePoint solutions in a structured way
- To encourage other organization to share their SharePoint architecture guidelines and experiences

This white paper does not aim to provide detailed, step-by-step instructions that you will follow exactly to architect and develop a SharePoint solution. Such detailed information is beyond the scope of a short white paper. The focus here is to examine in some detail the steps that are unique to architecting work and project management solutions on SharePoint.

## Intended Audience

We assume you are a project manager or an architect in a certified Microsoft practice or in an internal IT department. In either case, you are responsible for delivering collaborative solutions to customers, either internal or external to your organization.

## Background

Back in 1999, when SharePoint 2001 was on the drawing board, the potential of the new platform was very evident to us at BrightWork. We realized, however, that, to maximize the potential of SharePoint, development teams would need some guidance on how to architect a workplace/projectplace on the web using this new SharePoint. We developed this process ourselves and have used it extensively and successfully with our customers, in the US, Europe, Canada and Australia. This white paper now presents a summary of our Workplace Architecture Guidance (WAG) process. We coined the WAG acronym in a feedback session with the Microsoft SharePoint leadership team in January 2003, while reviewing future plans for SharePoint.

## Related White Papers

It is clear that a collaborative business solution to manage work, processes and projects can be deployed on an intranet or an extranet and, in some circumstances, on the internet. Please refer to the two companion white papers in this series for more information on these deployment scenarios.

## White paper outline

This paper includes the following:

- Why do we need a Workplace Architecture Guidance process?
- An overview of the six-phase Workplace Architecture Guidance process
- Phase 1: Workplace Architecture Definition
- Phase 2: Strategy and Planning
- Phase 3: Infrastructure and Training
- Phase 4: Design and Build
- Phase 5: Rollout
- Phase 6: Operational Support
- How long does deployment of a SharePoint solution take?
- Conclusion

## Why do we need a workplace architecture guidance process?

Over the last two decades, the rapid developments in technology have changed the way we work – but have not always improved the way we work. Enterprise systems, like SAP and Siebel, provided excellent solutions to stable and unchanging enterprise-wide processes, for example, payroll and general ledger. But there are a lot of fluid, dynamic activities in a workplace that cannot be managed by enterprise systems – by the time you work out the process, the process itself has changed or your teams have matured their process capabilities beyond the initial process solution. So, while enterprise systems play an important role in managing corporate workloads, over time, the realization grew that enterprise systems do not provide the solution to managing all workplace activities.

The focus then switched to Knowledge Management, with the assumption that building knowledge portals would enable the sharing of information from the bottom up across an organization. Anecdotal evidence suggests that only single digit percentages of people add information voluntarily to these portals, as commitments to other components of their busy working lives take precedence. In addition, information overload has become a critical factor in managing workloads – and since one of the key challenges is to make it easy for employees to find exactly the information they need rather than providing them with all information that exists in a given domain, the incentive is not always there for the employee to add even more information!

More recently, we now have added many more different communication mechanisms and devices to get information to us much more quickly than before. We work in more places – not just the office, but at home, in coffee shops, in airport lounges. Technology has enabled work scenarios that we would never have thought possible but it has left us busier: we tend to work more rather than less. Work life is faster and different, but not necessarily easier. There is a growing realization that throwing additional advanced technology to help manage workplace activities is not the full solution. A busy, overworked person with a new technology can become an even busier and more overworked person!

In spite of all of these advances, Microsoft Office, first introduced in 1989, is by far the most commonly-used work and process management tool in use today. Processes are defined in email, projects are managed in Microsoft Excel, project proposals are produced in Microsoft PowerPoint and Microsoft Word, and work items are stored in Microsoft Word. However, Microsoft Office is not an information management tool and data stored in documents or email can be very difficult to report on.

In summary, the top-down approach to managing work processes, built around enterprise systems, does work in some cases, but only for a small number of top-level processes. With the bottom-up approach to knowledge management, many portals lie empty and unused. Microsoft Office is what people use to manage, define, implement and execute processes and projects – but data is locked and often lost in Microsoft Office. So there is a gap – there is a lot of good

work going on in different places in organizations but the various components need to somehow be linked and glued together. Enter SharePoint!

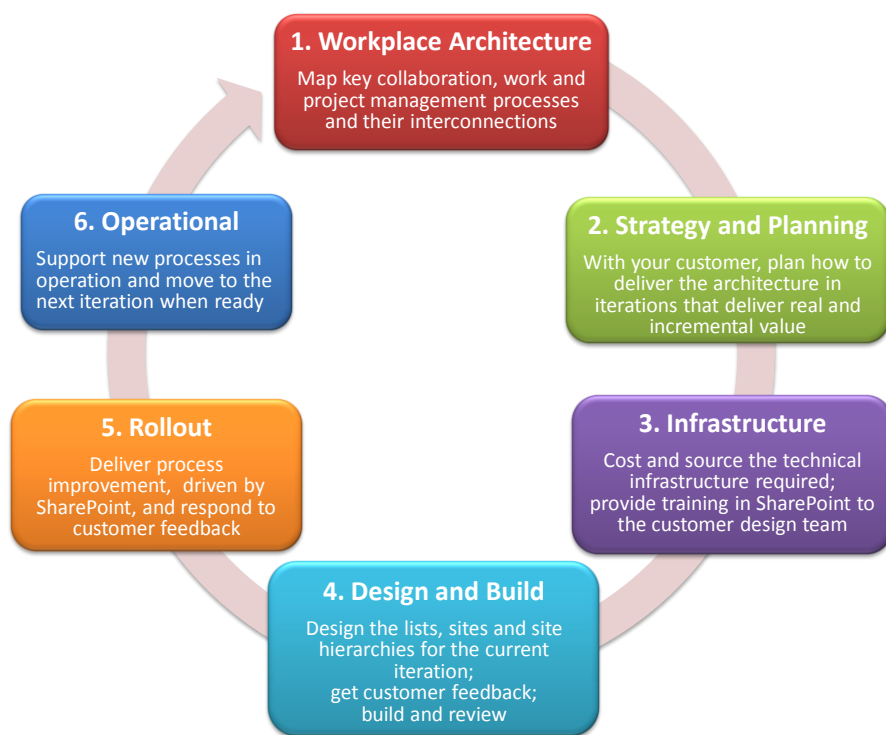
SharePoint excels in enabling the building of quick solutions to manage simple processes. SharePoint solutions enable workplaces that connect people to people and people to information. You can build a solution that allows your customer to find, use and share data when and where they need it. It is essential however that you do not build many quick SharePoint solutions that do not talk to each other, if you want an architected workplace. You must build SharePoint solutions in an architected way, so that information is not locked and lost in your new workplace. But to do that we need to understand the way we work, the processes we are trying to manage. We need to define each of the processes we use and to examine the interactions between processes. We can then build a SharePoint solution that incorporates and works with Microsoft Office to bridge the gaps.

## The Workplace Architecture Guidance Process Introduced

The Workplace Architecture Guidance (WAG) process defines six phases that you can follow to architect a new workplace. Your aim is to identify the key processes in your customer's business and to identify how these processes interact. It is important to remember that processes, by their very nature, are constantly evolving. The challenge then is to architect a SharePoint solution that is flexible enough to be used and evolved repeatedly in changing environments.

Figure 1 shows the six phases in the WAG process. Each phase is made up of one or more steps. The six phases are described in the following pages, with samples to help explain some of the key steps in each phase.

Figure 1: The WAG Process



Overall, developing SharePoint solutions using the WAG process is a more agile and iterative approach than the traditional, large-system development processes and therefore a high degree of trust is required from both parties. With the iterative approach, you do less very detailed project planning and estimation up front, but you engage in a longer-term relationship with your customer. You deliver the overall solutions in smaller, more manageable chunks, with each iteration delivering incremental yet real value.

Management of customer expectations is critical. It is very important that the customer understands the iterative nature of the delivery process. In Phase 1, the Workplace Architecture phase, you define as much as you know that will be

required – the overall workplace - but in the Strategy and Planning phase, you break the workplace into manageable chunks. The customer must be involved in deciding what is included in each iteration. Therefore, the customer is then only expecting a subset of the overall workplace in each iteration and knows that you will be back to deliver more. The iterative nature of the process and the expectation of a longer-term relationship between you and your customer must be emphasized during the project negotiations and setup.

## Phase 1: Workplace Architecture Definition

The first phase in the WAG process involves detailed consultation with your customer to identify the key processes in their organization and to understand the relationships between the processes. You are likely to engage in detailed workshops with your customer and to study process documentation received from your customer to help you to understand and map the workplace processes – to develop a detailed picture of how the organization works. We draw attention to three steps in particular:

### **Step 1: Document the key collaboration, work and project management processes.**

Draw a picture of all the relevant processes – get everything down on paper.

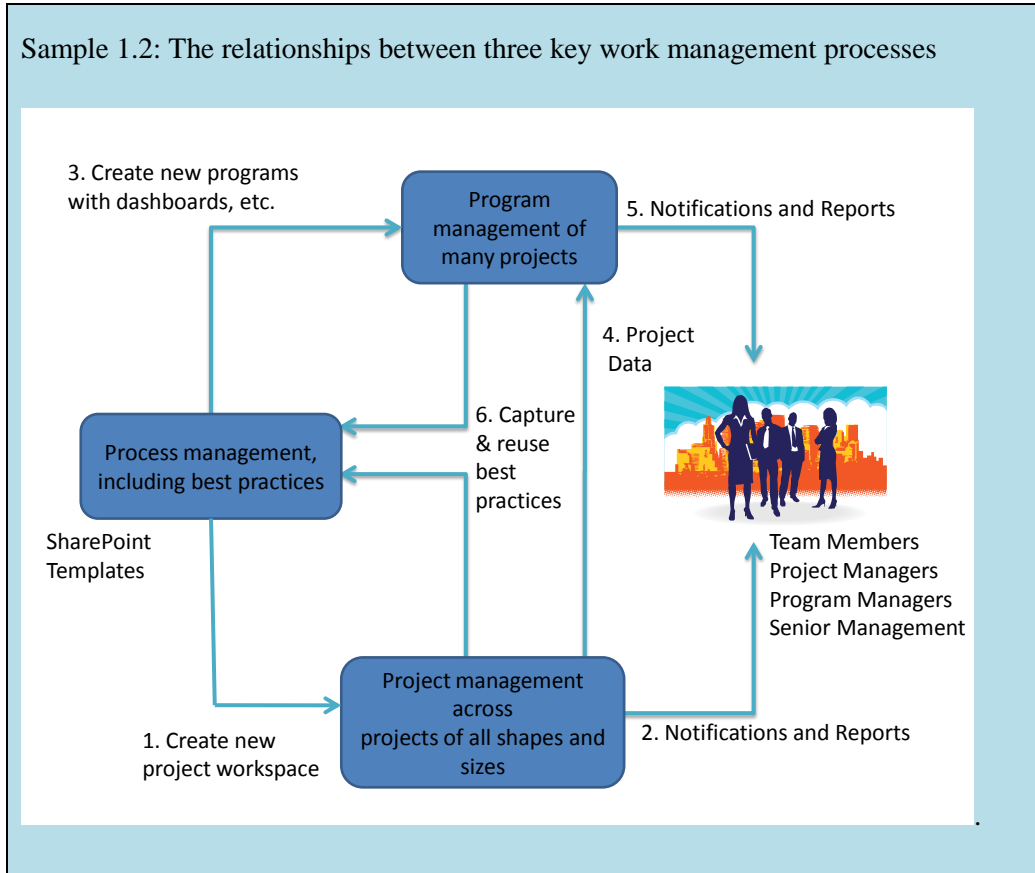
**Sample 1.1:** Here is a sample list of key work management processes:

- Project Management (of single projects)
- Program Management (of multiple projects)
- Process Management (incl. best practices)
- Product Management (incl. work products)
- Priority Management (incl. project selection, change requests)
- People Management (incl. resource mgmt., skills)
- Partner Management (incl. suppliers, vendors)
- Price Management (incl. cost, budgets, etc.)

Note that each of the processes in Sample 1.1 has sub-processes. Remember that this list is but a sample - these are clearly not the key work management processes for every organization. You and your customer must analyze the customer's organization to identify the customer's key work management processes.

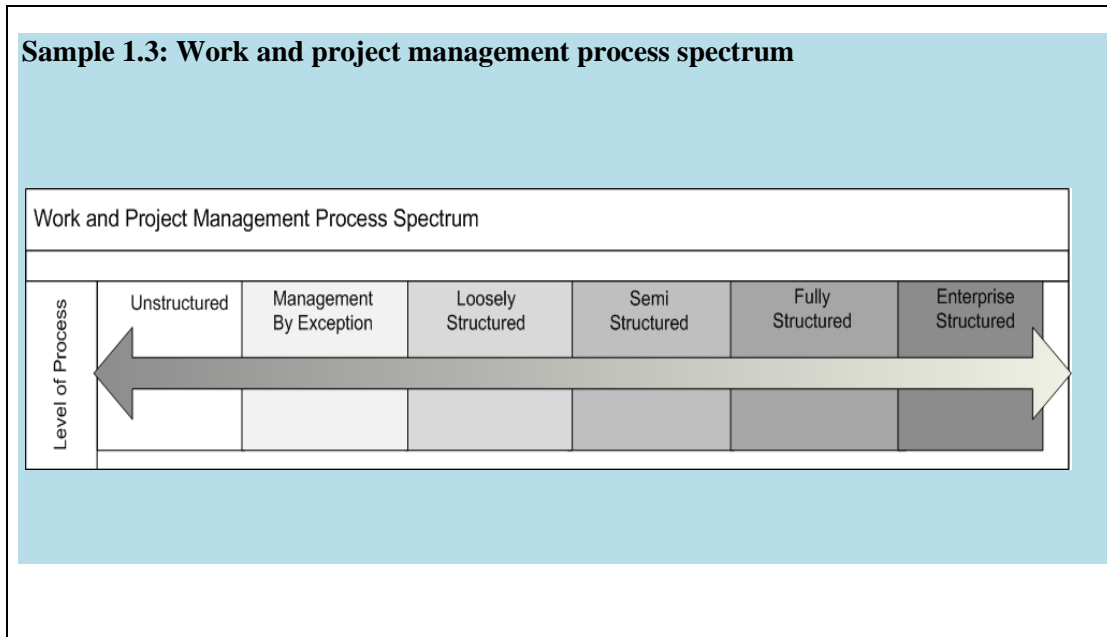
**Step 2: Identify and map the relationships between the processes.**

Remember that most of the key processes identified in Step 1 do not exist in isolation; rather they have connections to the other key processes. Sample 1.2 maps the relationships between three key work management processes identified in Sample 1.1 of Step 1.



### Step 3: Create a complexity spectrum for each key process.

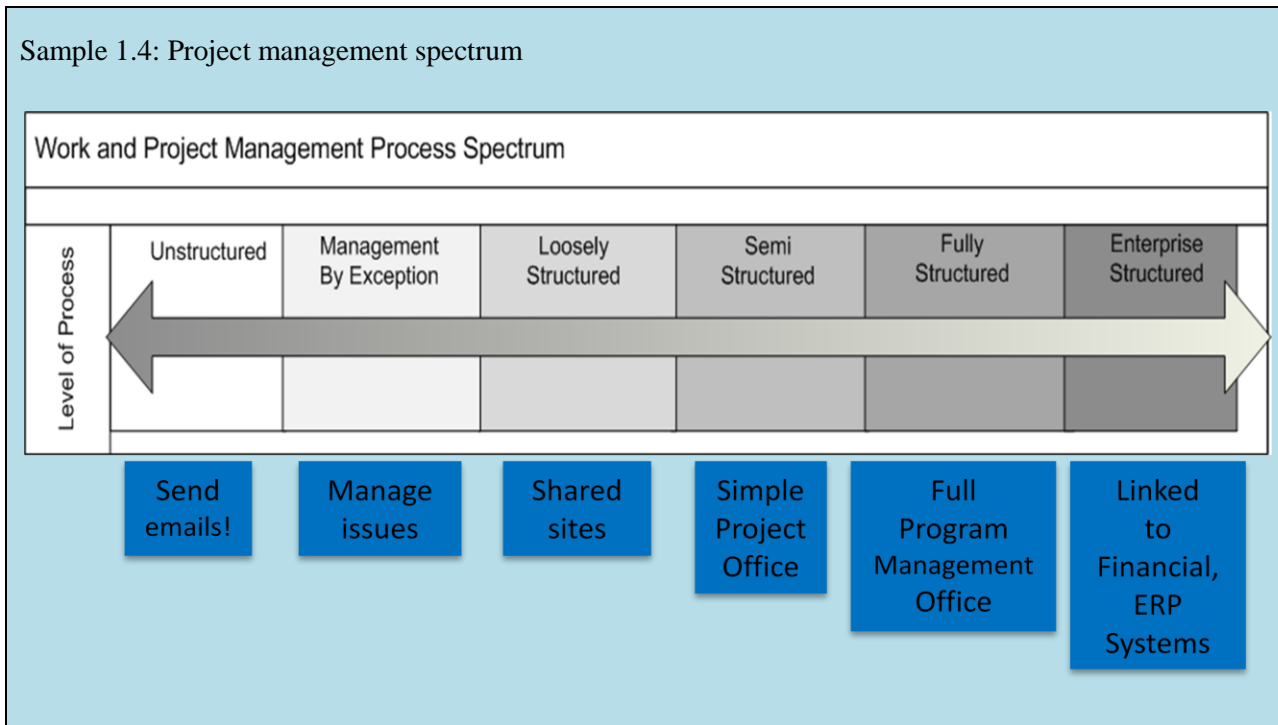
If we consider a spectrum for work and project management processes, we know that work and projects need, deserve and get different levels of process and structure, even in the same department in an organisation. This happens due to any number of factors, including the time that is available, the complexity and risks, the customer profile, demands and budget and the individual experience level of team members. It is therefore important that a spectrum can be assigned to each key process that is appropriate to the nature of the work in hand. Your architecture needs to reflect this reality.



Sample 1.3 shows a sample complexity spectrum that can be applied to work and project management processes generally. For example, some projects can be managed by exception. Because of the nature and often simplicity of some projects, there is no time or need to document and approve every activity in the project. Therefore, the project manager only raises issues and seeks outside intervention when problems arise. But other more complex projects require and deserve much more structured management processes.

Having developed a complexity spectrum that can be applied to key work and project management processes generally, it is then necessary to apply that spectrum (or a suitable variation) to each of the key individual processes. Sample 1.4 gives an example of how the spectrum for work and project management processes can be used to define the range of appropriate processes for management across projects. In summary, then, for Step 3, you should produce a complexity spectrum for each key process identified in step 1 of this first phase.

Sample 1.4: Project management spectrum



It is important to note that the Workplace Architecture Definition phase is not a one-time effort. The output of the phase will be reviewed and most probably revised as one iteration is delivered and another iteration is about to start.

Table 1: Phase 1 Workplace Architecture Definition Summary

Major activities	Delivery vehicles	Key milestone: Architecture Agreed or Revised
Plan the architecture phase	Initial meeting with customer to set expectations	Initial team is assembled
Conduct workshop(s) to identify key processes and identify known relationships	Architecture workshops	Key work processes are identified (or updated)
Agree or modify a complexity spectrum for each process	Review sessions	Known process relationships are documented
Document (update) the workplace architecture		A complexity spectrum is agreed that can be used on (or modified for) all key processes

## Phase 2: Strategy and Planning

Having completed Phase 1, typically it is very clear that it is not realistic (or wise) to develop a solution quickly that will deliver all processes simultaneously. The answer is to engage in an iterative development process, breaking the overall solution into individual chunks, to be delivered separately, each of which delivers real and incremental value to your customer.

During Phase 2, Strategy and Planning, you work with your customer to address the question: How can you deliver the architecture you want iteration by iteration? You do this by breaking the work down into manageable deliverables and then you agree with your customer how you sequence the development of the solutions. You identify the order in which the deliverables will be completed and thus engage in an iterative process of solution delivery. It is essential that each deliverable delivers real and incremental value to your customer.

Here are some of the key steps you are likely to take in Phase 2:

### **Step 1: Select a few critically-interconnected processes to work with.**

Identify a subset of the key processes that are critical to your customer, where delivering a solution for one or more of the processes will have a real, measurable and visible impact on your customer.

In Sample 2.1, we identify three connected key processes that you might start with. As part of the first process, Project Initiation, you must define the ways in which a project can be initiated. If you start each project with the right amount of process, then you can manage each project to success. Thereafter you can manage multiple projects across a business program.

Sample 2.1 A selection of interconnected processes



## Step 2: Define goals for each iteration

Work out where to start. Working with your customer, decide how many iterations you will deliver and what will be delivered during each iteration. Referring back to the complexity spectrum from Phase 1, agree what parts of the complexity spectrum for which key processes are being addressed in each iteration and agree the scope of the deliverable, for example, how many departments or business functions will be included. Set goals for 1, 3, 6 and 18 months. Sample 2.2 shows a simple example of such a decision.

Sample 2.2: A staging for the “Project Management” key process

Project management process level	Management by Exception	Loosely structured	Semi-structured	Fully structured
Internal project mapping	Sales projects	Marketing projects	IT enhancement projects	IT development projects
Iteration planned	2	1	2	3

Table 2: Phase 2 Strategy and Planning Summary

Major activities	Key milestone: Strategy and Plan Agreed
<p>Plan the strategy phase</p> <p>Conduct strategy and planning workshops with your customer (customer input is critical)</p> <p>Record strategy and agreed plan</p>	<p>Project team is assembled</p> <p>Vision and scope of the project is agreed, e.g. the number and scope of key processes to tackle</p> <p>Resources are committed</p> <p>Project stakeholders are on board</p> <p>Number of iterations/ ‘turns of the wheel’ agreed</p> <p>Detailed plan for the first iteration/turn is agreed</p> <p>Risks are identified</p> <p>Infrastructure approach is defined</p> <p>Approach and plan is approved</p>

## Phase 3: Infrastructure and Training

Phase 3 is a critical phase in the overall process – identifying, costing and sourcing the technical infrastructure required by your customer. However, since this white paper is focused on architecture and you are likely to be very familiar with planning the technical infrastructure, in this white paper we do not include detail on the technical activities you complete during this phase.

We do, however, draw your attention to three key points:

- Your customer can and should play a key role in contributing to the upcoming design review process, which will take place during Phase 4. But it is difficult for your customer to contribute unless they have some understanding of how SharePoint works. It is therefore essential that your customer has some training in how SharePoint operates so that they can input to the design, contribute to the validation of the design and contribute effectively to the user acceptance of the delivery of each iteration. This training should be addressed during this Phase 3 of the WAG process.
- It is also important to note that in February 2008, Microsoft released a powerful tool to help you to complete infrastructure design and sizing, based on the Microsoft System Center 2007 Toolset (see Appendix A for more information). Whether or not you are an expert in designing SharePoint solutions, it is strongly recommended that you validate your technical architecture against this tool, particularly from a sizing perspective.
- It can take some time for the infrastructure to be defined and installed. It is very important to complete Phase 3, Infrastructure and Training, to a very high standard but it is not necessary to hold up progress on Phase 4 while waiting for the complete infrastructure to be in place at your customer site(s). You can proceed to Phase 4, Design and Build, before the infrastructure is in place. You can proceed to design on paper or on Microsoft PowerPoint initially and to conduct design reviews with your customer. You can then complete the initial development on your own infrastructure or some other hosted infrastructure.

Table 3: Phase 3 Infrastructure and Training Summary

Major activities	Key milestone: Technical environment ready and design review team trained
<p>Plan the infrastructure phase</p> <p>Size the infrastructure</p> <p>Prepare the infrastructure</p> <p>Install and verify the software required for this iteration</p> <p>Train the customer design and build team on how to use and configure the software being used in this iteration</p>	<p>Infrastructure is set up or enhanced</p> <p>Post-installation test is successful</p> <p>The customer review design team is trained in the product configuration</p>

## Phase 4: Design and Build

Note that as you start this phase, the focus is on the design and build for one (the current) iteration only, not for the entire workplace. It is relative easy to build solutions using SharePoint but it is essential that you build a solution that improves an existing process or introduces a new process that adds value to your customer. In the Design and Build phase, it is important to work with customer representatives that have been trained in the base SharePoint platform. You should design and build in a systematic set of steps, getting feedback from your customer at each step and modifying your design and development based on this feedback. This systematic approach will lead to a deliverable at the end of the iteration that adds real value to your customer in a much shorter timeframe.

Here follow the main activities in the Design and Build phase:

### 1. Design:

We recommend using a tool as simple as PowerPoint to complete your initial design. There are seven recommended steps in the design process for work and project management solutions:

- I. Map the sub-processes (e.g. Risk, Issue, Task, Deliverable) of the process (e.g. Manage Projects) to SharePoint lists (and potentially to categories of lists) or to InfoPath forms. Identify any workflows (for example, the approval of projects), that are required for the selected subprocesses (see Sample 4.1).
- II. Map different process implementations to different SharePoint site types (see Sample 4.2). For example, map collections of lists, and workflows, views and reports to site templates for different types of projects.
- III. Map the sites to site collections/hierarchies; for example, sites to manage across projects (see Sample 4.3). Sample 4.4 shows the mapping of SharePoint objects to site types in a fictitious company, Contoso.
- IV. Map any reports that are required to views, to cross list reports or to reports across sites or site collections.
- V. Cross check: be sure the roles involved in this set of key processes and sub-processes are properly supported by the design. For example, in the case of a project management process, the following are valid internal or external roles:
  - i. Team Member (Customer Reviewer)
  - ii. Project Manager (Customer PM)
  - iii. Projects Office Manager (Customer Sponsor)
- VI. Review the design with the relevant stakeholders.
- VII. Iterate through steps (i) to (vi) until a good design emerges.

### 2. Build

Build the approved design in SharePoint and then review it with your customer.

Iterate through the Build phase a number of times before rolling out your deliverable. For more technical information on the build activities, please refer to reference no 2 in Appendix A.

The following four samples demonstrate how you might approach steps 1, 2 and 3 of the design and build phase on a given project.

**Sample 4.1: Mapping of processes and sub-processes to SharePoint lists or InfoPath forms**

Project Management Process Design Worksheet					
Sub-process group	Sub-process	Required	Iteration Planned	Workflow Required	Iteration Planned
Plan	Project Statement / Charter / Profile	✓	1		
	Teams	✓	2		
	Roles	✓	2		
	Goals	✓	2		
	Inter-Project Commitments				
	Change Requests	✓	2	Y	3
Control	Simple Tasks (Actions)	✓	1		
	Phase	✓	2		

## Sample 4.2: Mapping of SharePoint objects to site types to manage single projects

### Single Project Process Design Worksheet

Use this worksheet to design your single project management templates. Please see the pmPoint Template map for an indication of where the supplied templates lie on the Project Management Process Level spectrum.

Project Management Process Level		Management by Exception	Loosely Structured	Semi-Structured	Fully Structured
Internal Project Mapping		<i>Sales</i>	<i>Marketing</i>	<i>IT Enhancement</i>	<i>IT Development</i>
Iteration Planned		3	2	1	1
Sub-process group	Sub-process				
Plan	Project Statement / Charter / Profile	✓	✓	✓	✓
	Teams			✓	✓
	Roles			✓	✓
	Goals			✓	✓
	Commitments		✓		✓
	Change Requests				✓

### Sample 4.3: Mapping of SharePoint objects to site types to manage across projects

#### Multiple Project Process Design Worksheet

Use this worksheet to design your multiple project management templates. Please see the pmPoint Template map for an indication of where the supplied templates lie on the Project Management Process Level spectrum.

Project Management Process Level		Management by Exception	Loosely Structured	Semi-Structured	Fully Structured
Internal Project Mapping		<i>Sales Project Tracker</i>	<i>Marketing Project office</i>	<i>Engineering Project Office</i>	<i>IT PMO</i>
Iteration Planned		2	4	3	1
Sub-process group	Sub-process				
Plan	Project Statement / Charter / Profile	✓	✓	✓	✓
	Teams				✓
	Roles				✓
	Goals				✓
	Commitments				
	Change Requests				

Sample 4.4: Mapping SharePoint objects to site templates in a fictitious company, Contoso

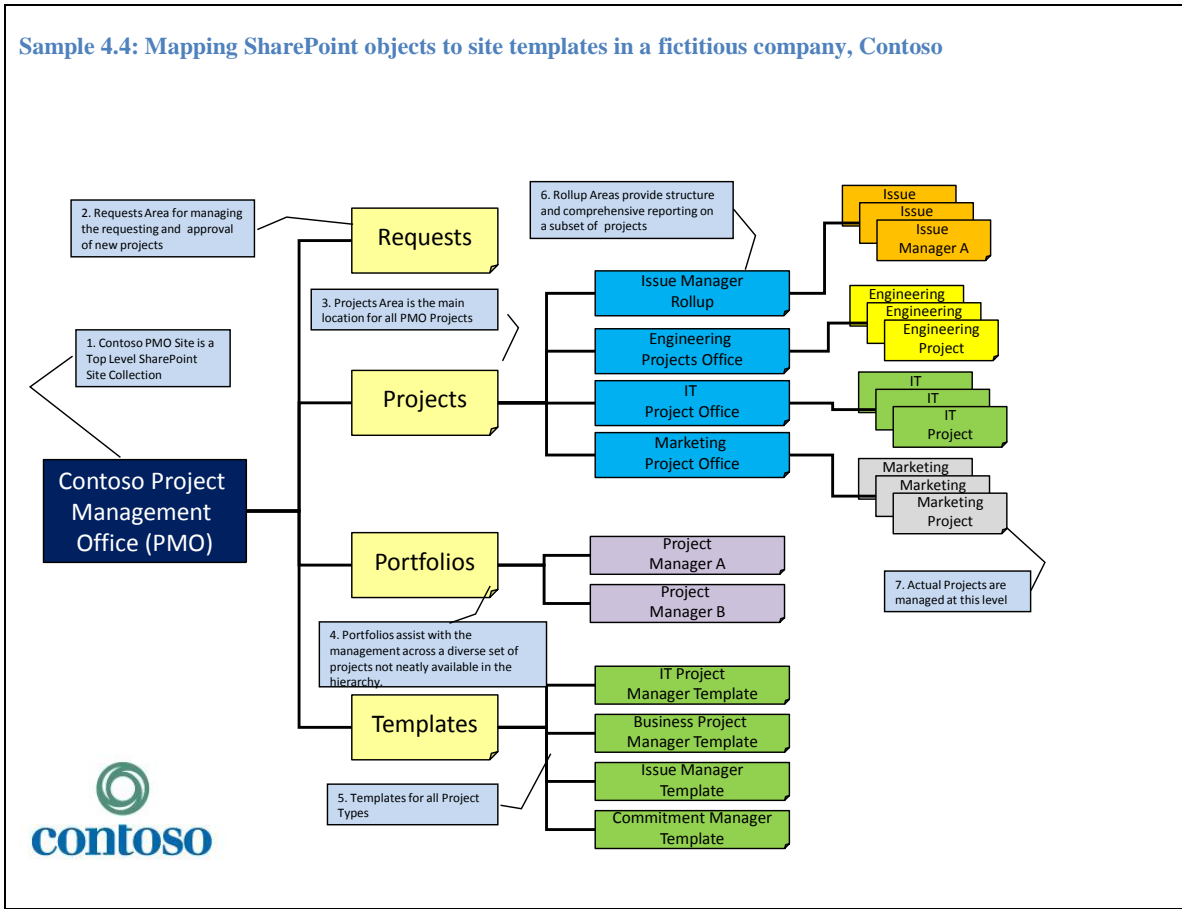


Table 4: Phase 4 Design and Build Summary

Major activities	Key milestone: Designs validated
<p>Plan the design and build phase for this iteration.</p> <p>Design lists/forms, workflows, sites and site collections / hierarchy</p> <p>Customize, build templates</p> <p>Verify the designs</p>	<p>Template(s) designed and validated by stakeholders</p> <p>Design team is ready with the knowledge and skills needed to support rollout</p>

## Phase 5: Rollout

In traditional, larger systems development, an entire system is rolled out as a deliverable, the focus is on the rollout of software and the expectation during the rollout phase is that there will be little or no change to the product being rolled out.

When rolling out a SharePoint solution for work and project management using the WAG process, there are a few differences from a traditional software development rollout scenario:

- SharePoint solutions are not just software deliverables – your development team is delivering process improvements, not just software products. Because processes are always changing, you should be prepared and budget to make changes during and even after rollout.
- SharePoint allows you to easily make changes to software. Therefore, unlike traditional systems development where making changes can be difficult and expensive, SharePoint facilitates making changes during the rollout phase.
- Every iteration of the rollout phase delivers a part of the overall solution - that part agreed between you and the customer as the deliverable for a specific iteration. The deliverable is clearly defined in Phase 2 and should be a usable entity, which delivers some measurable, incremental value to your customer's organization.

Therefore, it is essential that an architecture and development team is receptive to the idea of making changes to the entity being delivered during the rollout phase – it is psychologically important that the customer perceives that the development team is willing and capable of making changes. Obviously, the more the customer has been an active and educated participant in the design review process, the less the need for major changes during the rollout phase.

It is likely that there will be a lot of feedback/change requests on the earlier iterations of a solution and less change requests on subsequent iterations. It is recommended that you assess all feedback on a given iteration, decide to act on some as part of the current iteration and to address others as part of subsequent iterations.

It is important to note that you are first and foremost deploying a business process (e.g. Manage Project), which happens to be supported by SharePoint. It is therefore likely that the end user training at rollout will start with a process overview at a minimum.

Table 5: Phase 5 Rollout Summary

Major activities	Key milestone: Key processes deployed on SharePoint
Plan the rollout phase	Processes under the rollout scope are using their sites according to the guidelines
End user training	Process users and owners are able to use the site(s)
Rollout process and software	Adjustments are being made to the workspaces as needed
Support initial usage	Revised templates are approved

## Phase 6: Operational Support

Table 6 shows the key activities and milestones in Phase 6 Operational Support, demonstrating that at this phase of the WAG process, there are standard activities and milestones with which all development teams are familiar. There are, however, some differences between activities during a traditional operational phase and that in the WAG process, due primarily to the iterative nature of the architecture and development, including:

- It is critical that the development team delivering the software/systems/processes is available to provide a significant level of support during the operational phase. Unlike traditional systems development, the development team cannot expect to deliver a product and then cease to communicate any further with the customer, as the project will continue in the next iteration.
- SharePoint solutions typically deliver changes to a process; therefore you must be prepared to make some changes to the deliverable within the operational phase. You must do this – so you should include a budget at the start to allow your team to make some changes. You can move some of the changes requested into the requirements for the next iteration, but some are typically made as part of the operational support.
- You, with input from your customer, must make a decision at some point in the Operational Support phase to move into Phase 1 of the next iteration, beginning with the Workplace Architecture Definition.

Table 6: Phase 6 Operational Support Summary

Major activities	Key milestone: Key processes operational on SharePoint
Plan the transition to operational support	Management and support responsibilities are transferred to IT operations
Transition to operational support	Second-level technical support with partner is working
Survey, measure user success	A post mortem or review of the lessons learned has been performed on the rollout for this iteration
Move to the next iteration	

## How long does deployment take?

The length of time to complete all six phases in the WAG process for one iteration is typically from one week to nine or ten weeks. Because of the iterative nature of the development process, it may seem that the overall deployment goes on for a long time, but you are building up a long-term relationship with your customer. However, the deployment time for each iteration can be very quick, because each iteration delivers a chunk of the overall solution. Various factors affect how long deployment takes, including:

- How much is included in each iteration? We recommend and encourage customers to deliver a small piece of the overall architecture first, to get used to the process and to build up an good understanding between the development team and the customer.
- Resource availability and skill levels on the customer side – how much training will they require?
- How ready is the customer’s infrastructure? However, as stated earlier, you can complete a lot of design work using your own or another hosted infrastructure, while the customer’s infrastructure is being prepared.
- How quickly will the customer decide on process issues? Some organizations quickly reach agreement on the best process for a specific activity, but sometimes it can be difficult to reach agreement.
- Other external and organizational constraints, which vary from customer to customer.

## Conclusion

At BrightWork, we have successfully followed the six-phase WAG process outlined in this white paper to help us to architect SharePoint solutions for our customers for a number of years. Our aim is to deliver process improvements; therefore, we focus initially on identifying and understanding the processes and the interconnections between processes in a customer's organization. We recognize that processes are constantly evolving and changing and we architect a SharePoint solution that is flexible enough to be used and evolved repeatedly in changing environments. The iterative design and delivery approach recommended in the WAG process is the key cornerstone of the WAG. We value the contribution our customers make to the design and rollout of effective solutions and therefore emphasize the importance of training relevant customer representatives.

## Appendix A: References

### 1) SharePoint Capacity Planning Tool:

- Read a white paper in the Microsoft TechNet library at: <http://technet.microsoft.com/en-us/library/bb961988.aspx>
- Download the tool from: <http://go.microsoft.com/fwlink/?linkid=93029>

**2) Detailed step-by-step technical instructions** on how to develop a SharePoint solution is available on Microsoft TechNet (technet.microsoft.com) at [http://technet.microsoft.com/en-us/library/cc261834\(TechNet.10\).aspx](http://technet.microsoft.com/en-us/library/cc261834(TechNet.10).aspx)

- [Downloadable book: Planning and architecture for Office SharePoint Server 2007](#)
- [Downloadable book: Planning and Deploying Service Pack 1 for Microsoft Office SharePoint Server 2007 in a Multi-server Environment](#)
- [Technical diagrams and other supplemental documentation](#)
- [Planning worksheets for Office SharePoint Server 2007](#)
- [Advanced lectures and white papers](#)
- [Plan overall design](#)
- [Plan governance](#)
- [Plan Web site structure and publishing \(Office SharePoint Server\)](#)
- [Plan for personalized content and sites](#)
- [Plan workflows](#)
- [Plan InfoPath Forms Services](#)
- [Plan for business intelligence](#)
- [Plan search \(Office SharePoint Server\)](#)
- [Plan communication \(Office SharePoint Server\)](#)
- [Plan document management](#)
- [Plan records management](#)
- [Plan site and content security \(Office SharePoint Server\)](#)
- [Plan for site creation and maintenance \(Office SharePoint Server\)](#)

- [Plan for system requirements](#)
- [Design server farms and topologies \(Office SharePoint Server\)](#)
- [Design logical architecture](#)
- [Plan for authentication \(Office SharePoint Server\)](#)
- [Plan for and design security \(Office SharePoint Server\)](#)
- [Plan for performance and capacity \(Office SharePoint Server\)](#)
- [Plan for and design database storage and management](#)
- [Plan for data protection and recovery \(Office SharePoint Server\)](#)