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Enhancing Project Management with Microsoft Office SharePoint Server 2007

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SharePoint is a technology platform that can be configured and customized to play a number of roles in an organization. This thesis is based on one of those roles i.e. is providing an environment for project management. A project manager needs to manage his team collaboration, control project documents, structure project workflow, manage risks, track project's progress or share information with the stakeholders. SharePoint is simply the quickest way to fill these needs using standard tools business users already know: Microsoft Office and Internet Explorer.

The aim of this thesis is to understand the challenges of project management and to research SharePoint Server and explore its capabilities and features. The main goal of the thesis is to demonstrate how SharePoint Server can help enhancing project management in an organization, how it brings value to the organization. The thesis only focuses on the collaboration feature of SharePoint and is conducted in basically two parts; first half entails the concept of project management and SharePoint. The second half of the report aims at creating a sample project management information system for an imaginary company.

The result of the thesis can be used by any company or person who is in the process of deciding whether to introduce SharePoint in their company or not. The thesis is concluded by the findings that surely SharePoint brings great advantage to a company in project management aspect and even a non-technical project manager can also use this complex-looking software.

Key words
SharePoint, MOSS, Project Management Information System.

Table of contents

Figures

Tables

Abbreviations

BDC	Business Data Catalogue
BI	Business Intelligence
CSS	Cascade Style Sheets
ECM	Enterprise Content Management
IIS	Internet Information Services
IT	Information Technology
KPI	Key Performance Indicator
MOSS	Microsoft Office SharePoint Server
ODC	Office Data Connection
PMBOK	Project Management Body of Knowledge
PMI	Project Management Institute
PMIS	Project Management Information System
RSS	Really Simple Syndication
SPS	SharePoint Portal Server
STS	SharePoint Team Services
UDC	Universal Data Connection
WSS	Windows Shared Services

1 Introduction

Project management in the modern sense began in the early 1960s, although it has its roots much further back in the latter years of the 19th century. The need for project management was driven by businesses that realized the benefits of organizing work around projects and the critical need to communicate and co-ordinate work across departments and professions. Nowadays, organizing work in projects is the most common approach practiced by large organizations. Large organizations also have huge projects; and to manage those huge projects, we need more powerful tools and techniques than using e-mails, documents, spreadsheets, network shares, faxes etc. Microsoft Office SharePoint Server 2007 is a great product with wide variety of features available for organizing and managing projects in organizations no matter how complex they are. Everyday more and more companies are adapting their business processes into SharePoint and benefiting from it.

1.1 Background

Microsoft Office SharePoint Server is achieving significant penetration within the corporate world. There is no question that SharePoint is gaining market share, and this is accelerating as more firms are now moving to Windows Server 2003. It is intended as a collaboration and information sharing tool for workgroups and project teams. This project based thesis attempts to find out how SharePoint Server helps to manage projects in an organization. This has been made possible by applying the SharePoint tools and techniques in a case study.

1.2 Research Objective

The objective of this thesis project is to address the common project management challenges the managers face in usually large organizations and research about a solution provided by Microsoft, MOSS. This was achieved by creating a project management information system (PMIS) for an imaginary company called Our Vision Ltd. using SharePoint Server. The result of the PMIS site creation has been reported in pictures and their detailed explanation in Chapter 5.

1.3 Methodology

Literature studies in the various areas of project management and SharePoint Server were conducted to get a broad perspective of the domain in which this thesis lies. In addition to the literature studies, practical approach has also been used to prove the knowledge gained in the theoretical section of the thesis. A sample PMIS has been developed to illustrate the real usage of the tools and techniques of SharePoint.

1.4 Scope of Project

This thesis will cover only the most important issues related to Project Management and not go into tiny bits of details. The thesis will only focus on the collaboration and project management feature of SharePoint and not go into detail of any other feature provided by SharePoint.

1.5 Thesis Outline

The report is structured as follows. Chapter 2 will focus on the concept of project management and the challenges concerned with it. In Chapter 3, the SharePoint will be given an introduction. The six pillars of the SharePoint server will be discussed and a detailed comparison between WSS and MOSS will be presented. Chapter 4 examines the SharePoint components used to manage a project and create an environment for project management. In Chapter 5, a case study will be introduced and a sample PMIS will be presented with the help of pictures. The report ends with Chapter 6 which concludes and summarizes the main findings of the research.

2 Introduction of Project Management

Information technology (IT) projects are organizational investments. When an organization builds or implements an IT solution, it often commits considerable time, money, and resources to the project with an expectation of receiving something of value in return (Jack T. Marchewka, 1). Although IT is becoming more reliable, faster, and less expensive, the costs, complexity, and risks of managing IT projects is still a challenge for many managers.

According to a study named CHAOS conducted by the Standish Group of 365 IT managers in 1994, it was reported that only 16 percent of the application development projects were successful in terms of being completed on time and within budget. (Jack T. Marchewka, 6)

Jack T. Marchewka talks about a *Socio-Technical Approach* to improve the likelihood of success of projects. It can be understood as a purely technical approach that focuses on the technology to improve the tools, techniques, and methodologies of project management. Although Marchewka stresses that usually developers end up developing an application that no one asked for or needs and often all the user requirements are not met completely, according to my research there does exist an application that can meet all the organization's requirements and also of its stakeholders: Microsoft Office SharePoint Server 2007.

MOSS is an integrated suite of server capabilities that can help improve organizational effectiveness by providing comprehensive content management and enterprise search, accelerating shared business processes, and facilitating information-sharing across boundaries for better business insight. Most companies do not take complete advantage of SharePoint as they do not understand its power. The power of SharePoint is not only to simplify sharing of documents and spreadsheets, but it also gives project managers chance to build a customized portal for their projects, that can efficiently collaborate and coordinate communication amongst team members. (Microsoft Office Online, quoted 19.11.2009)

Before going into detail as what SharePoint is and how it makes managing projects easier and more efficient, it is necessary to understand the concept of project management and its challenges.

2.1   The concept of Project Management

A project is a temporary endeavor undertaken to accomplish a unique product, service, or result. Project management is the application of knowledge, skills, tools, and techniques to project activities in order to meet or exceed stakeholder needs and expectations from a project. Managing a project includes identifying requirements, establishing clear and achievable objectives, balancing the quality, scope, time and cost, and adapting the specifications, plans,

and approaches to the different expectations of the various stakeholders. (Jack T. Marchewka, 13-14)

2.2   The project management body of knowledge (PMBOK)

The PMBOK Guide is a document available from the Project Management Institute (PMI) – an international nonprofit, professional organization. PMBOK Guide defines nine knowledge areas for understanding project management. (Jack T. Marchewka, 25-26)

Project integration management – Project integration can be described as coordinating the project plan's development, execution, and control of changes.

Project scope management – A project's scope is the work to be completed by the project team. Scope management provides assurance that the project's work is defined accurately and completely and it also completed as planned.

Project time management – Time management is important for developing, monitoring, and managing the project's schedule.

Project cost management – Cost management assures that the project's budget is developed and completed as approved.

Project quality management – Quality management focuses on planning, developing, and managing quality environment that helps the project to meet or exceed stakeholder needs and expectations.

Project human resource management – Human resource management focuses on creating and developing the most appropriate project team required to meet the project's goals and objectives.

Project communications management – Communication management focuses on communicating timely and accurate information about the project to the stakeholders.

Project risk management – Risk management is concerned with identifying and responding appropriately to risks that can impact the project.
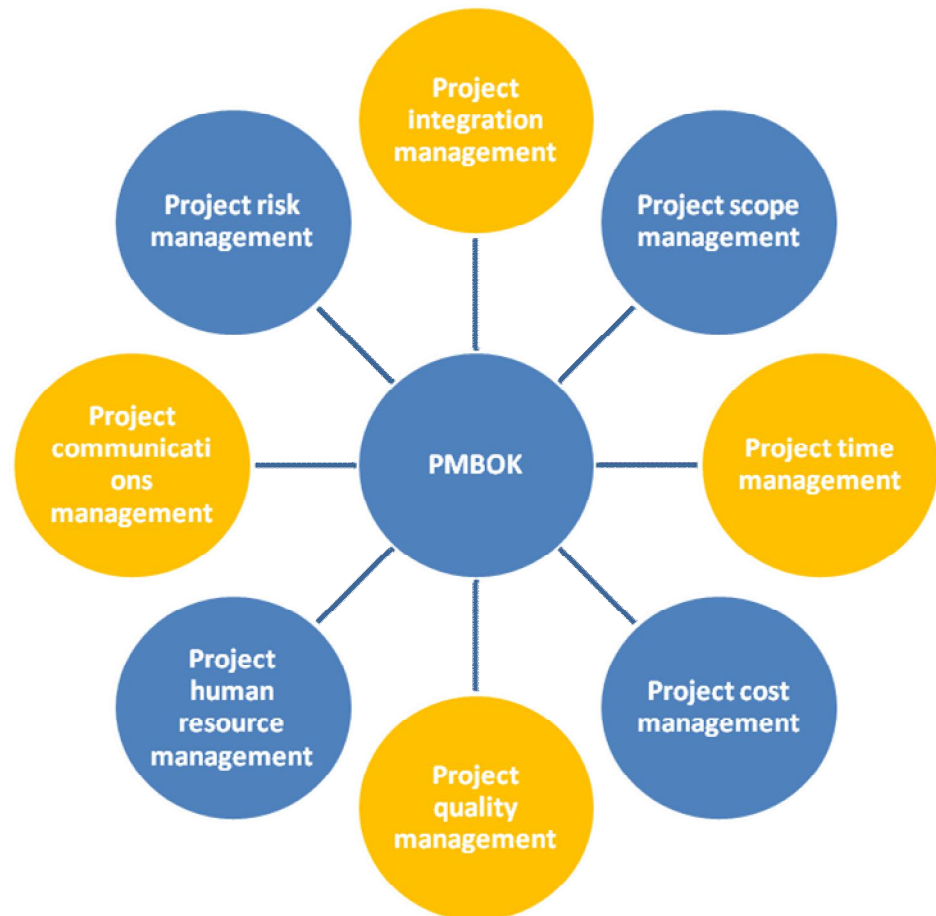
Figure 2-1 Project management body of knowledge (PMBOK)

2.3 Challenges of project management

Whether a project is being managed by a new project manager or an experienced leader, he might face some common and traditional challenges associated with project management. According P.W. Ford (2004) below are listed five major project management challenges:

1. **Unrealistic deadlines** – In most of the projects, keeping up with the deadlines is a major issue. The challenge of many managers is to find alternate approaches to the

tasks and schedules in order to complete a project "on time", or to get approval for slipping dates out.

2. **Lack of Communication**- Many project managers and team members do not provide enough information to enough people, along with the lack of an infrastructure or culture for good communication.

3. **Scope changes** - As most project managers know, an evil nemesis "The Scope Creep[1]" is usually the number one enemy who continually tries to take control. Proper documentation and communication of what is happening and what is anticipated is very important in each project.

4. **Failure to manage risk** – If a project plan has included in it some risks, simply listed, but no further review happens, this is not called a sound risk management. The risks analyzed should be followed up during the whole life cycle of the project and actions should be taken to either reduce their chances or to decide what should be the counter steps if the risk realizes.

5. **Customers and end-users are not engaged during the project –** Project teams can get wound up in their own world of internal deliverables, deadlines, and process, and the people on the outside do not get to give added input during the critical phases. Discuss and provide status updates should be discussed and provided to all project participants. Stakeholders, customers, and end-users should be invited and encouraged to participate in important decisions of the project.

2.4 Managing information in a project

The definition of a project varies greatly – a project can be of building a power plant, reducing the costs of production or simply making new software for a company. In all these projects,

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[1] **Scope creep** (also called **focus creep**, **requirement creep**, **feature creep**, **function creep**) in project management refers to uncontrolled changes in a project's scope. This phenomenon can occur when the scope of a project is not properly defined, documented, or controlled. It is generally considered a negative occurrence that is to be avoided. (www.wikipedia.org)

one thing that remains the same is that the project is time, scope and budget constrained and it involves participation of several members which is called a project team. These people need to share information and documents amongst each other. One of the many jobs of a project manager is also to manage and facilitate his/her team members to be able to share the required information easily and quickly. Usually many project teams rely on inefficient ways of sharing and storing their information, such as:-

Storing documents personally/locally

Project team members often save their project information and documents in their local disk, email or movable memory disks. In this case there is a huge probability that, when needed, it is not easy to find a certain document on time or in some cases it is not found at all.

Storing documents in the network

If team members use a shared folder or a shared drive to store their project information centrally, there is a great chance that the document gets either overwritten or even deleted accidentally. However, there are still ways of restoring the deleted document but it still takes extra time and energy of the person administering the network.

Although these inefficiencies are not the only reasons why a project might get delayed or fail, but these are definitely the root cause of all the big problems faced by the project managers generally. To improve these inefficiencies, it is very important to keep in mind the following factors:-

▪ Apply a standard set of project management process from the start to the very end of the project. Everything should be planned in details. It is very important to understand that any project management application works to the manager's advantage only when they employ good project management techniques and practices.

▪ The platform used to communicate and collaborate should be easy-to-use, accessible and reliable. These three factors result in the satisfaction of the team members and gradually lead to the project's success.

- The project team should be educated and updated with project management best practices. The team should be involved by giving them a chance to give feedback on the processes and practices and asking their advices.

2.5 Using a Project Management Information System (PMIS)

As defined by the Project Management Institute, a PMIS is a standardized set of automated project management tools available within an organization and integrated into a system (http://www.pmi.org, last visited 27.10.2009). Though the PMI does not specify which tools or technologies to use as a PMIS, SharePoint can be customized as one.

No matter how big or small a project is, its success depends on how efficient the information is managed. The right information to the right person on the right time and also from the right person is the key to the success of any project or even any small task. All this can be acquired by implementing a PMIS.

A manager can tell when to use a PMIS by noticing the following signs in his project:-

- No standardized system for integrating the project goals
  There should be a way of integrating different aspects of project like schedule, cost and quality and also maintain their change management. For example, if a change in project costs is made in an MS Excel spreadsheet it will not automatically update the scheduling which might be maintained in MS Projects. Therefore, there should be an automated tool to integrate all the areas of the project and reduce the time spent by the manager on such administrative corrections.

- Inefficient document management
  As mentioned above, project documentation should be stored centrally in a location which is available to everyone easily and quickly. Editing, undoing changes, maintaining versions are not so easy if no document management tool is used.

- Lack of appropriate tools to facilitate team communication / collaboration

Project information is not accessible anytime, anywhere. In addition, the team is incapable of developing or working with information at the same time.

- Inability to report accurate and timely project status
Project status information is only available whenever the project manager makes it available. How do you deal with project sponsors who want to view real-time project status information?

- Not achieving organizational strategic goals
Lacking a standardized tool to facilitate consistent project management processes throughout an organization can limit the ability to effectively support strategic goals.

(Dux Raymond Sy, 4-5)

So now it is very clear that implementing a PMIS for a project is very essential and it can be done efficiently by using specially designed tools, such as SharePoint. The following chapter of my thesis will focus on Microsoft Office SharePoint Server 2007.

3   Introduction of Microsoft Office SharePoint Server 2007

Microsoft Office SharePoint Server 2007 is an integrated suite of server capabilities that can help improve organizational effectiveness by providing comprehensive content management and enterprise search, accelerating shared business processes, and facilitating information-sharing across boundaries for better business insight. Office SharePoint Server 2007 supports all intranet, extranet, and Web applications across an enterprise within one integrated platform, instead of relying on separate fragmented systems. Additionally, this collaboration and content management server provides IT professionals and developers with the platform and tools they need for server administration, application extensibility, and interoperability. (Microsoft Office Online, quoted 18.07.2009)

Simply said, SharePoint is a tool that allows individuals in an organization to easily create and manage their own collaborative websites. The users do not have to be technically savvy, in fact

as long as the users know how to use Windows, Microsoft Office and surf the Internet, they are ready to use SharePoint.

The core technology of MOSS 2007 is Windows SharePoint Services (WSS) 3.0. This service is available at no cost for the Windows Server 2003 and Windows Small Business Server 2003 platforms; however, WSS 3.0 doesn't provide the full range of content management tools available in MOSS 2007.

SharePoint Server 2007 offers expanded functionality on top of the WSS 3.0 core including the Business Data Catalog (BDC), business intelligence (BI), Excel Services, Forms Services, and a new and more robust search engine. These extended functionalities are not in the scope of this thesis. (Microsoft Office Online, quoted 18.07.2009)
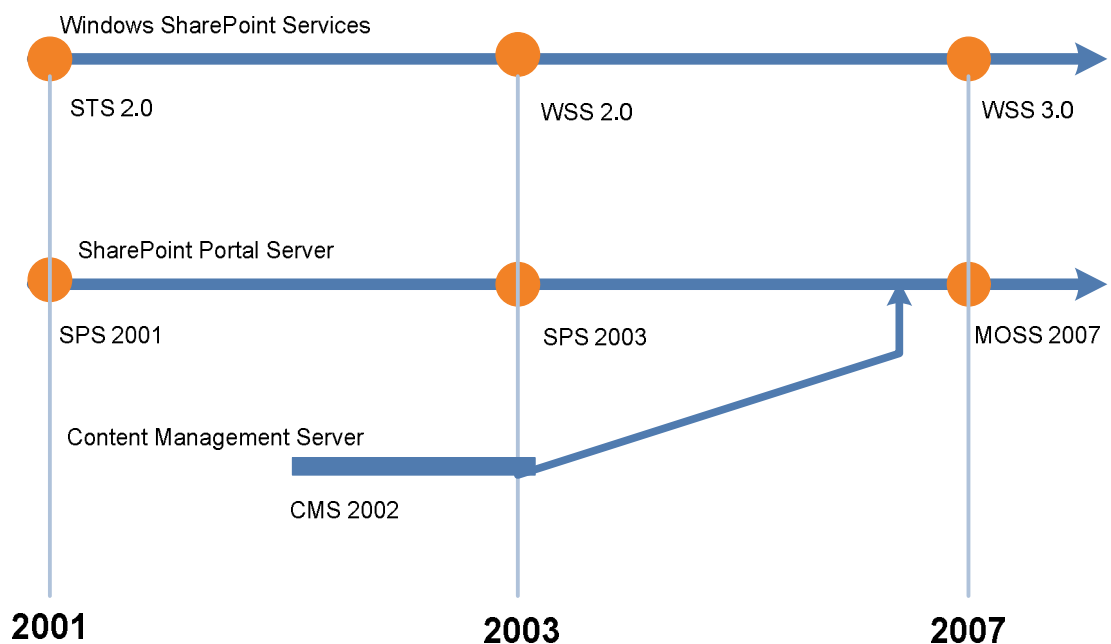
3.1 SharePoint History

Figure 3-1 SharePoint History

MOSS has always had two streams: the free product that was basically an add-in that gave basic collaboration and document management features; or if there was a need of a more

robust solution there was a corresponding retail product that added many additional features on top of the features available with the free version.

SharePoint has been around since 2001. It has evolved from a simple web-based site management tool to an empowering collaboration tool that integrates seamlessly with the Web, Microsoft Windows, and Microsoft Office. During the timeframe of 2000-2002, the first iterations of SharePoint in Microsoft were SPS 2001 and STS 2001. STS 2001 (SharePoint Team Services 2001) was the free product and it came bundled with Office 2000 and is an additional component which was built off of FrontPage. SharePoint Portal Server 2001 is the retail version and was built upon STS 2001. It was not until 2002 and 2003 that SharePoint began to catch on to a degree in the workplace and in fact there are still many businesses that are running WSS 2.0 or its corresponding SPS 2003. Nowadays, the latest version of SharePoint is the WSS 3.0 which is the freebee and the retail product is the MOSS 2007. However, Microsoft still supports the older version of WSS 2.0. (Joining Dots, quoted 25.06.09)

3.2   Six pillars of MOSS

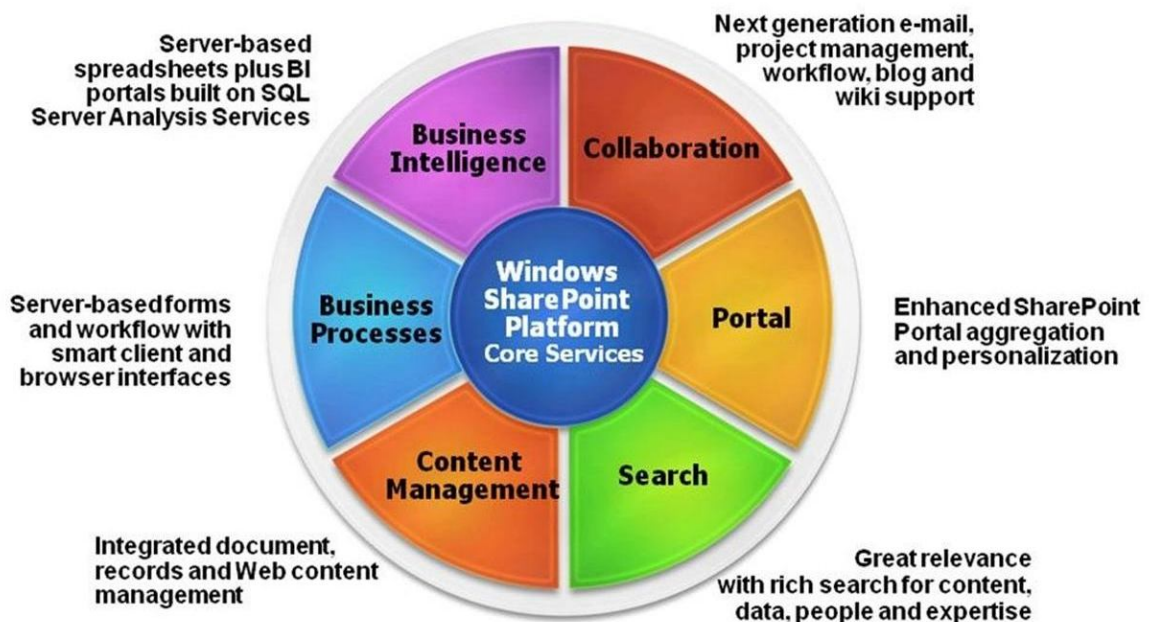MOSS brings benefits to organizations in six general areas:-

Figure 3-2, Six feature areas of SharePoint

11

The figure 3-2 demonstrates the major six feature areas offered by SharePoint. Nowadays, almost all the companies face similar challenges of organizing and managing their huge repository of data and data information, collaborating between teams, departments and organizations, etc. MOSS 2007 provides an easy-to-use solution to all kind of different needs and requirements of all kind of organizations. Below is a description of all the six areas and their features in detail.

3.2.1 Business Intelligence

Business intelligence (BI) is the process of aggregating, storing, analyzing, and reporting on the data stored in a variety of formats, such as databases, e-mail, messages, and spreadsheet files in order to make informed business decisions. MOSS 2007 provides a number of tools that can help extract data from a variety of sources and present that data in ways that facilitate analysis and decision making. (Microsoft Office Online, quoted 25.06.2009)

3.2.1.1 Excel services

Often when creating a workbook in Excel and sharing it with other coworkers, we encounter the problem of many different versions of that workbook and the challenge to find out that which one is the latest and the correct one. With MOSS 2007 this problem is solved as the workbook can be published to a server and when the users are working with that workbook in their browsers, the workbook can be locked down.

3.2.1.2 Report center

A Report Center is a specialized type of site designed to serve and manage business intelligence data. It basically serves as a central repository for storing reports, libraries, lists, and connections to data sources.

3.2.1.3 External data collections

SharePoint 2007 allows you to connect to external data sources such as SAP and Siebel and integrate information from those sources into lists, libraries, and web parts within SharePoint. Data connection libraries give the users a way to share, manage, and discover connections to external data sources. Users don't need to know technical details such as connection strings. (James Pyles, 3)

3.2.1.4 Key performance indicators (KPIs)

Specialized lists and web parts in SharePoint let you visually track progress made toward specific business goals.

3.2.1.5 Data filters

Using filters, you can display only a subset of a data collection, designing the presentation for specific audiences that need to see only the information that's relevant to them.

3.2.1.6 Business data catalog

The BDC is a SharePoint shared service that accesses data from numerous back-end applications that exist outside SharePoint Server and combines that information into a single report or profile.(James Pyles, 4)

3.2.2 Business processes and forms

Electronic forms are provided in SharePoint by InfoPath Forms Services, and they can help one collect and validate information that drives business processes. Workflows provide a system of contact and review points as forms and other documents proceed from the beginning to the conclusion of a task. They also facilitate collaboration between team members and other partners in a particular project. The workflow process contains several decision points:

Approval	This workflow option directs a form, document, or item to an individual or group for approval.
Collect Feedback	This workflow option directs a form or document to an individual or group for feedback.
Collect Signatures	This workflow option directs a Microsoft Office document to a group to collect digital signatures.
Disposition Approval	This workflow option let authorized personnel decide to retain or delete expired documents.
Group Approval	This workflow option allows you to choose workflow approvers from a hierarchical organizational chart and allow these approvers to use a stamp control instead of a signature.
Three-state	This workflow option is used to track and manage large volumes of business process forms, documents, or issues such as project tasks.
Translation Management	This workflow option creates copies of documents that need to be translated to other languages and assigns translation tasks to specified teams or team members.

Apart from the decision points available in SharePoint templates, it is also possible to create your own stages for a document or form. (James Pyles, 4)

3.2.3   Collaboration

Collaboration is the most important factor that comes to mind when talking about SharePoint. MOSS 2007 provides a specific set of utilities that allow project teams, departments, divisions, or entire companies to work together to attain a common goal. Site templates, blogs, wikis, and RSS feeds are all web parts that can be used for collaboration. You can use Project Management to manage a set of tasks that can be accomplished using different web parts and web part configurations. SharePoint collaboration tools are how these jobs are created, managed, and completed within the MOSS framework. Collaboration helps improve team productivity and in end effect manage projects more efficiently.

Below are some tools that are used in SharePoint to manage collaborate with each other and share information.

3.2.3.1 Site templates

With the help of the built-in templates that are organized by function or purpose, one can choose a template that most closely meet the needs and easily create a desired site. This results in improving team productivity. For example, if you want to get your team up and running quickly, you can easily create a site using the site template for a team site. This site can meet diverse range of needs. It can store long-term routine information for a single department or short-term information for a special project that spans several departments. By creating a team site to use as a collaborative workspace, your team can become both more efficient and more productive and ultimately achieve better business results. You can also customize your site to meet the needs of your team or project by adding lists, libraries, or other features.

3.2.3.2 Blogs and wikis

These information-sharing methods are common on the Web, and almost everyone has used them from time to time. Now MOSS 2007 supports for blogs and wikis.

3.2.3.3 RSS feeds

Really Simple Syndication (RSS) technology is another well-known method of periodically receiving updated information on specific topics or subjects. RSS can be used to subscribe to a blog in SharePoint and get the latest data updates.

3.2.3.4 Office Outlook 2007 collaboration

Outlook can be used to share information back and forth between e-mails or calendar and SharePoint.

3.2.3.5 Project management

SharePoint makes it easy to manage projects no matter how complicated they are by keeping a track of who is assigned to what project or how close to completion a task is again. Projects

can be organized in lists or charts, such as a Gantt chart to have a glance at all of the details needed to manage job assignments.

3.2.4   Portal

Portals are gateways into a large organized repository of data and data management tools. SharePoint 2007 portal technology has advanced in providing greater personalization of its portal sites. For instance, individual users can now create personal MySite websites within SharePoint that act as a portal to any personal profiles, documents, graphics, lists, or other information directly relevant to them. All major SharePoint solutions are accessible through the portals. (James Pyles, 8)

3.2.5   Enterprise search

The search abilities in MOSS 2007 are improved to a large extent as compared to its predecessor. It is possible to not only locate the right document or piece of data but also to find the right person for any subject matter. MOSS 2007 uses the following abilities:-

3.2.5.1   Searching Center site

This centralized site allows you to initiate searches and filter results.

3.2.5.2   Finding documents and people

As mentioned above, SharePoint also allows you to find right persons. Search queries will span across document libraries, information lists, and even user MySite sites to locate results matching your search string.

3.2.5.3   Searching enterprise applications

SharePoint search also has the ability to go through enterprise applications such as SAP, Siebel, or customized databases in order to provide the information needed.

3.2.6 Enterprise Content Management

In today's growing world of computers and productivity software, it has become easy to create different kinds of contents such as documents, worksheets, presentations, e-mails etc. However, it has become very difficult to manage the content within these documents. This prevents organizations from achieving improvements in employee productivity, process efficiency, and customer communication. MOSS has overcome the challenges posed by unmanaged content. ECM is a central part of MOSS which provides content management to every employee in an organization by integrating with easy to use and familiar tools like Microsoft Office. This provides capability for managing the entire life cycle of content – from creation, to editing and collaboration, to expiration. MOSS has divided ECM into three distinct categories. The categories are document management, records management and web content management. (James Pyles, 6)

3.2.6.1 Document management

MOSS 2007 can help organizations to save diverse content from many different locations into a centrally managed repository with consistent categorization. The content can then be searched and shared with the help of the integrated search capabilities. Content can also be protected from unauthorized access. Collaboration tools, such as workflow, help people work better together to create, review, and approve documents in a structured way. Document management consists of the processes of creating, accessing, modifying, publishing, storing, and tracking documentation within your organization. Document management contains the following tools to enhance this content management form:

Document Center site template
The Document Center site template provides document management for large-scale companies with functions including checkout and check-in for editing, versioning, auditing, and support for various document formats. This solves the challenges of versioning and editing of a shared file. Support for converting one document format to another is also available.

Translation Management library

In multinational corporations, it is required to manage documentation that can be translated into different languages. This library enables you to create, store, and provide workflow, as well as manage by document type all your multilingual documentation.

Microsoft Office 2007 integration

Not only can you control document management from within the SharePoint 2007 interface, but you can also create, manage, and initiate workflow directly from Microsoft Office client applications such as Word and Excel 2007.

3.2.6.2   Records management

The purpose of the records management is to satisfy compliance and legal requirements. The integrated records management capabilities in Office SharePoint Server 2007 enable organizations to store and protect business records in their final state. Organizations can apply expiration policies to these records to ensure that they are retained for the appropriate time period to comply with regulations or corporate business policies, thereby mitigating legal risk to the organization. Audit trails provide proof to internal and external auditors that records have been retained appropriately. Holds can be placed upon specific records under legal discovery to prevent their destruction. (James Pyles, 6)

3.2.6.3   Web content management

MOSS uses web interface to allow access to all its tools and information for Internet, Intranet and Extranet sites, so it is obvious that web content management is also possible through MOSS. In this case, not only the administrator of the sites is responsible and able to govern the sites, but also every single SharePoint user can modify the content using various tools to control the information they are directly responsible for. Below are some tools which can be used to manage the content with no hassles. (James Pyles, 7)

Office SharePoint Designer 2007

This tools functions similarly as Microsoft Office FrontPage and is the primary web design tool for SharePoint Server 2007. One does not know any programming or need not be a

software engineer to create new personalized master pages or modify existing page layouts. The tool uses CSS technology to make changes to the entire MOSS site collection.

Default master pages and page layouts

There are several default master pages and page layouts to meet diverse kinds of needs and requirements. One does not need to create a page from scratch to suit his requirements.

SharePoint site templates

SharePoint 2007 contains a number of default site templates that you can choose based on the purpose and function of the site you want to create. These are the five general areas for site templates:

- Collaboration
- Custom
- Enterprise
- Meetings
- Publish

Microsoft Office 2007 format integration

SharePoint allows us to convert Office documents, such as Word or Excel documents into web pages. This is a very beneficial feature in daily working environment.

HTML Content Editor

With the help of this editor, one can access the underlying HTML code of any webpage and modify the source easily. This is handy when you create page content in the What-You-See-Is-What-You-Get (WYSIWYG) window and how it renders is not quite how you want the content to appear. (James Pyles, 8)

Automatic site change adjustment

In SharePoint Server 2003, when you changed the web page structure of your site and moved a page to a different location, you needed to manually edit all the links that led to that page. MOSS 2007 automatically changes the site navigation links, correctly updating and renaming them.

Managing website variations

In today's international business environment, websites often need to be presented in a variety of languages. SharePoint's Variations feature publishes the source site in a variety of languages including English, French, and Japanese. Additionally, the rendering of the source site can be modified for geographic region and browser device type (PC or mobile, for example). (4)
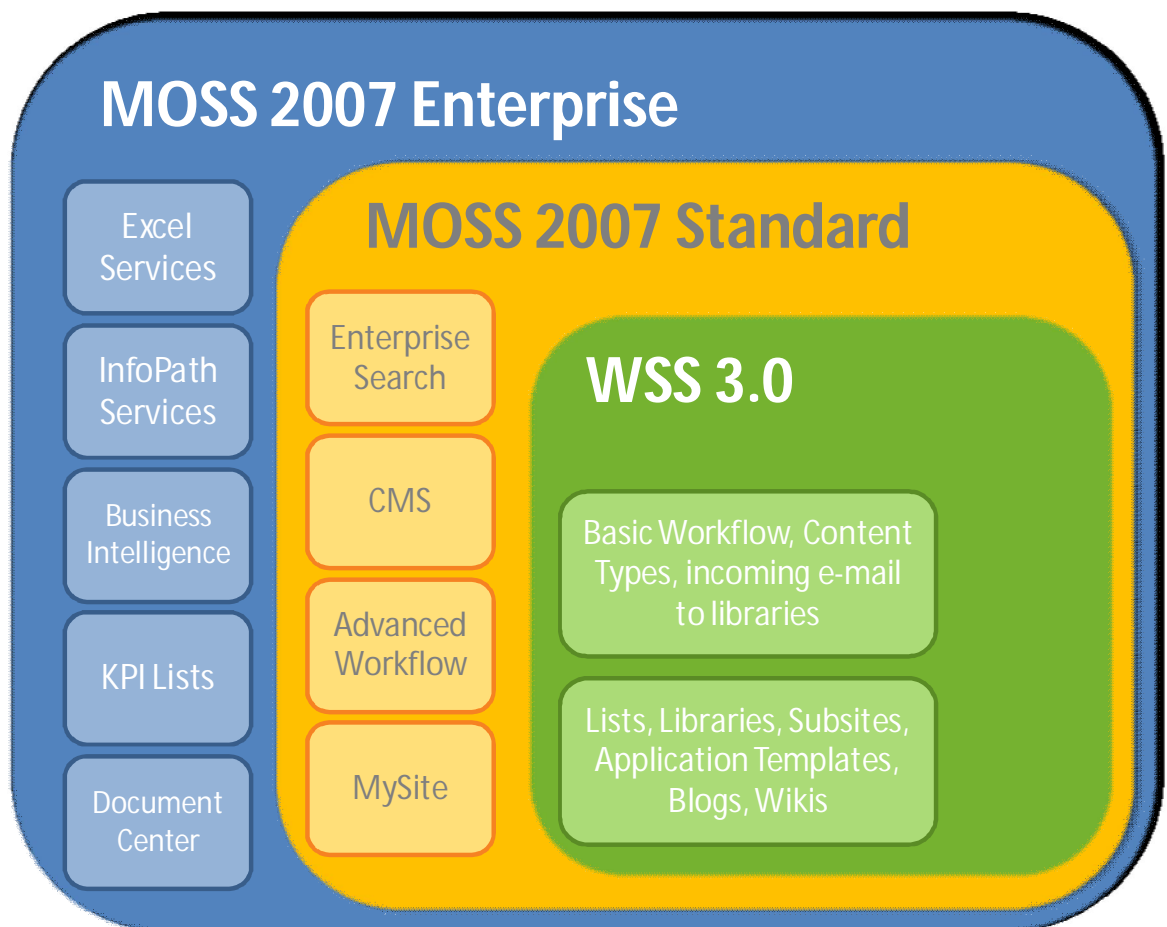
3.3   WSS / MOSS comparison

Figure 3-3, A comparison between WSS and MOSS

SharePoint is in its third major release and is comprised of Windows SharePoint Services (WSS) version 3.0 and Microsoft Office SharePoint Server (MOSS) 2007. WSS is available for free as long as your organization has proper licensing for Windows 2003 Server or later. MOSS provides extended capabilities to WSS. WSS v3 is a free add-on to the Windows 2003 Server, running on top of SQL Server, Windows 2003 Server and ASP.NET 2.0. MOSS is

available in various editions (Standard vs. Enterprise) and options (Excel Services, Content Management, etc.), and runs on top of WSS. Without WSS there is no SharePoint. WSS 3.0 and MOSS 2007 are both powerful collaboration tools made available by Microsoft. Built on the .net platform, many businesses today rely heavily on either one or both products to make decisions based on the most up to date information. It is very important to understand the difference and connection between Office SharePoint Server 2007 and Windows SharePoint Services (WSS) as many people wonder how they relate to each other. Understanding the difference between MOSS and WSS is one of the key issues when deciding which product to use in an organization. (Miles Consulting Corp 2009, quoted 25.06.09)

3.3.1 WSS/MOSS feature comparison

MOSS 2007 is built on top of WSS 2007 and therefore all WSS features are available in a MOSS deployment. In a scenario, where a company has to yet choose between the two services, it is very important to know the detailed features provided by each. The table 3-1 provides a detailed feature comparison of WSS and SharePoint.

Table 3-1, WSS and MOSS feature matrix

Feature	Windows SharePoint Services 2007	Microsoft Office SharePoint Server 2007
PORTAL		
Social networking		X
Sites and documents roll-up Web part		X
Colleagues and memberships Web parts		X
Web parts	X	X
Web part pages	X	X
Enterprise search		X
Content targeting		X
Site directory		X
Automatic categorization		X
News		X

Shared services		X
Business intelligence		X
Single sign-on		X
Site and list templates	X	X
Infopath server		X
Excel server		X
Collaboration		
Personal sites		X
Team sites	X	X
Wikis	X	X
Blogs	X	X
Alerts	X	X
Configurable alerts to users and groups	X	X
Discussion boards	X	X
Lists	X	X
Surveys	X	X
Workflow		X
Content review and approval	X	X
Site and list templates	X	X
Usability/Integration		
Outlook calendar	X	X
Save to library from Office applications	X	X
Personal views of Web part pages	X	X
Infopath integration	X	X
Document Management		
Document management sites	X	X
Records management		X
Document libraries	X	X
Document- and folder-level security		X

Content Management	
Page layouts and publishing	X
Web page versioning and approval	X
Design control via master pages	X
Browser-based, in-place content editing	X

Besides comparing features, it is also useful to analyze the business size and requirements in order to choose between the two products.

3.3.2 Considering organizational size

Most small businesses (5 to 500 information workers) can benefit from a WSS deployment. Any organization whose main activities revolve around creating and reviewing documents, tracking contacts, customers, and events, or collaborating with other organizations, it is a good candidate for WSS. Even if there is the need to quickly create and constantly updating Web sites to communicate with internal employees or external customers, WSS is a great solution for rapid Web site deployments.

The owners of small businesses can also upgrade to MOSS if they want to create a large number of team or project websites. For example, many small consulting firms will create a new team site for each project. In addition to the organizational benefits of different team sites, small businesses can also perform a company-wide search across all sites and other data sources.

3.3.3 Considering business requirements

Analyzing and understanding one's own business requirements can easily help determine which SharePoint product is appropriate for a certain kind of organization. As mentioned above, the WSS requirements basically focus on team-level collaboration and support of easy Web publishing which suit the requirements of usually small businesses, whereas MOSS requirements are focused on enterprise knowledge management and centralization which suits the requirements of large organizations and businesses.

Business requirements that can be met with a standard WSS deployment:-

- In order to manage projects efficiently, WSS offers template-based Web sites to manage meetings, teams, and project documents
- Blogs and wikis provide RSS aggregation
- Share contact lists, event calendars, and announcements with teams, customers, and partners
- Post documents for review and approval
- Provide self-service site creation for end users
- Provide administration for unused Web sites
- Ability to archive project e-mails
- Document management
- Content notification
- Desire to pilot collaboration and knowledge management software to gain acceptance in the organization

Business requirements that can be met with MOSS deployment:-

- Provide enterprise content management
- Records management and compliance solutions
- Use enterprise search to easily find posted content
- Ability to create business intelligence (BI) portals
- Provide business process automation
- Provide single sign-on to multiple internal applications
- Desire to push targeted content to users based on their profile within the company
- Provide personal sites and the ability to locate subject matter experts in the organization

3.4 Other similar products

It is an obvious fact that there are many similar products available in the market and SharePoint is of course not the only PMIS tool. Such products are Microsoft Project Server, Clarity (http://myclarity.com), and Primavera, and even open source, web-based products, such as Google Aps and Basecamp (http://basecamphq.com). The question now is why SharePoint is better than the others?

The challenge with using a complex PMIS tool is that it requires and assumes that the organization already has good project management environment. Good project management environment means that project best practices are being applied, such as well defined and structured project documents such as plans, reports, templates etc. When an organization decides to use a PMIS toolset, they have to have the basic project environment so that the tool can be and it must be customized to adapt the current project management processes. Any software or tool introduced in any company should adapt to the people's current working procedures and the people should never be required to change their ways of working just to adapt to the new system. SharePoint does exactly the same, it integrates with Microsoft Office so easily that it takes really a little time for the employees to start using SharePoint. Any change they make in their Office document is automatically shown in SharePoint and vice versa. However, while using open source products such as Google Apps, this remains a problem for especially large organizations as they do not provide easy integration with Microsoft products.

3.5 SharePoint Server installation requirements

There are different types of installations which can be designed physically and logically for SharePoint Server. Installation requirements also depend on the type of server farm you choose. A server farm is a collection of physical server iron and logical servers grouped in a single location. This collection is also known as server cluster or data center.

There are three types of server farm topologies available:-

- *Small-scale server farm or stand-alone server*
  This comprises of only two physical servers;
    - o One server running SQL Server 2000 or 2005

> o One server running Microsoft Office SharePoint Server 2007 and IIS

- *Medium-scale server farm*

  This level of server farm is typically used for small to medium-sized business environments and contains three to four servers:
  > o One or two front-end web servers running Office SharePoint Server 2007 and IIS
  > o One application server running Office SharePoint Server 2007
  > o One server running SQL Server 2000 or 2005

- *Large-scale server farm*

  This is the minimum server farm configuration suitable for an enterprise-level SharePoint environment:
  > o Several load-balanced front-end web servers running Office SharePoint Server 2007
  > o Two or more application servers running Office SharePoint Server 2007
  > o Two or more clustered database servers running SQL Server 2000 or 2005

Several factors can help determine what SharePoint farm topology is appropriate for an organization. These factors include:

- The size of your portal content (number of documents and so on)
- Number of SharePoint users
- Expectations of up time
- Scope of the SharePoint services (whether this installation provides or consumes Shared Services)

Analyzing these factors, an organization can choose whether they require a single-server or a farm installation (small, medium, or large farm). Single-server and farm installation are described in detail in the following sections. (James Pyles, pg 45-46)

During my thesis, I have installed a Microsoft Office SharePoint Server 2007 in a server running SQL Server and MOSS 2007, hence called stand-alone server. This kind of installation

is the most advantageous for experimenting and learning purposes as it is easy to get it up and running quickly.

3.5.1   Stand-Alone Server Installation Hardware Requirements

The following are the minimum and recommended hardware requirements for deploying Office SharePoint Server 2007, which includes the deployment of Microsoft SQL Server 2005 Express Edition, for a stand-alone installation:

Processors

The minimum requirement is 2.5GHz, with dual processors at 3GHz or faster recommended.

Memory

The minimum requirement is 1GB, with 2GB recommended.

Disk space and formatting

The minimum is an NTFS-formatted partition with 3GB of free space; an NTFS-formatted partition with 3GB of free space and additional free space for websites is recommended.

Installation source

The minimum requirement is a DVD drive; it is recommended you use either a DVD drive or the installation source copied to the hard drive or a network share.

Display

The minimum requirement is a resolution of 1024 × 768; Microsoft recommends using the minimum or higher resolution.

Network speed

The minimum requirement is a 56Kbps connection between the server and client computers; again, Microsoft recommends the network speed to be the minimum or faster.

3.5.2 Stand-Alone Server Software Requirements

The software requirements for Windows SharePoint Services 3.0 (WSS 3.0) and SharePoint Server 2007 are the same since MOSS 2007 is built on top of WSS 3.0.

Operating System Platform
MOSS 2007 is designed to run on the following editions of Windows Server 2003 with SP1 or later:

- Windows Server 2003, Standard Edition
- Windows Server 2003, Enterprise Edition
- Windows Server 2003, Datacenter Edition
- Windows Server 2003, Web Edition

3.5.3 Required Pre-Installation Components

To successfully install SharePoint Server 2007 the following tasks should be completed already:

- IIS 6.0 should be enabled so that the computer can function as a web server.
- Microsoft .NET Framework 3.0 should be installed and ASP.NET 2.0 should be enabled for Windows Workflow foundation. (James Pyles, 45-46)

4   Setting up the PMIS

The following chapters will illustrate how a Project Management Information System is created with SharePoint and how it benefits the project manager as well as his team to collaborate with each other.

4.1 SharePoint collaboration components

Before starting to go into details of project management tools and techniques, it is important to understand the basic SharePoint terminology, so that it makes sense to the whole PMIS.

4.1.1 Sites and Site Collections

SharePoint sites are collaborative webpages that are organized in a hierarchy. Top-level sites and subsites are used to divide the site content into distinct, separately manageable sites and the entire structure of a top-level and subsite is called a site collection as shown in figure 4-1. By default, the top site or also known as the root website is created by the administrator or IT person responsible for SharePoint. As a Project manager it is essential to be familiar with the site collections as the Help section that comes with SharePoint refers to the sites based on their hierarchy in the site collection. Also, when talking to the IT people, a manager has to know which type of site he has permission to create his PMIS, either top-level sites or subsites.
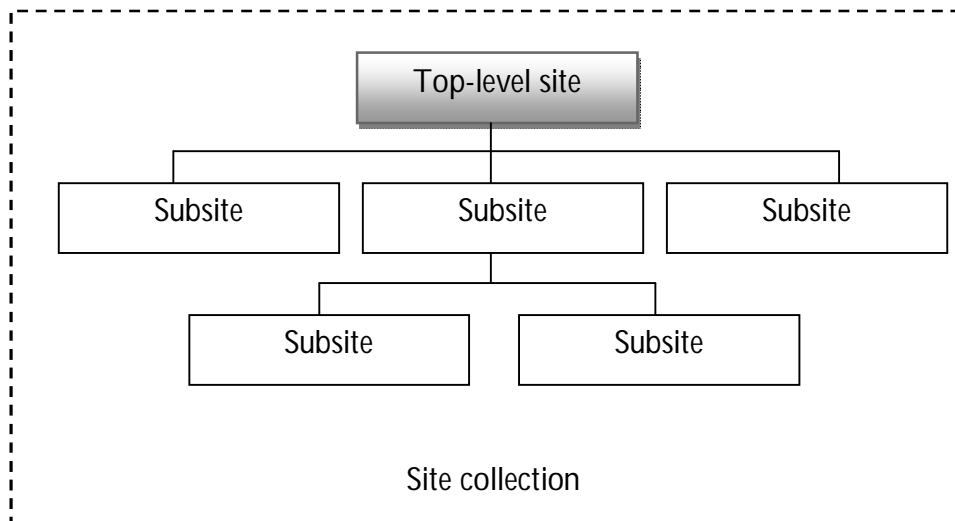
Figure 4-1 SharePoint site hierarchy

As it is already defined that projects are temporary, they have a start date and a finish date, so the SharePoint PMIS is also a temporary site. However, sites can also be created for permanent purposes, such as departmental sites, product sites, etc.

There are three kind of PMIS hierarchy options to choose from:-

Single-site collection

This kind of hierarchy has a single top-level site and each project in the company is a subsite. Figure 4-2.

In my thesis I am going to create a single-site collection because of the search limitations in SharePoint. By default, SharePoint can only search within a single site collection. For example, if somebody is interested in looking for a specific document contained within the various project sites, he will have to go to each individual site to run a search if every PMIS is a top-level site. This is not the case if the entire PMIS is grouped as a single-site collection.

Multiple-site collection

In this kind of hierarchy each project is a top-level site. Figure 4-3

Multiple-site collection for a specific department, product line etc.

Each department is a top-level site and their projects are subsites as in figure 4-4.
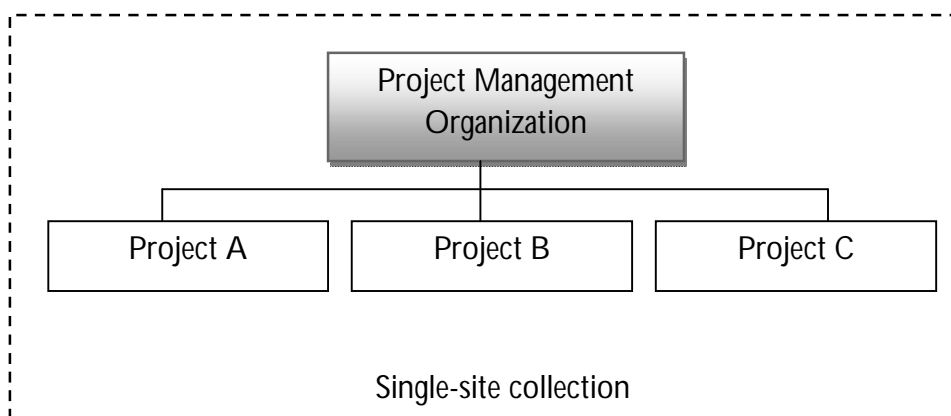
Figure 4-2 Single-site collection
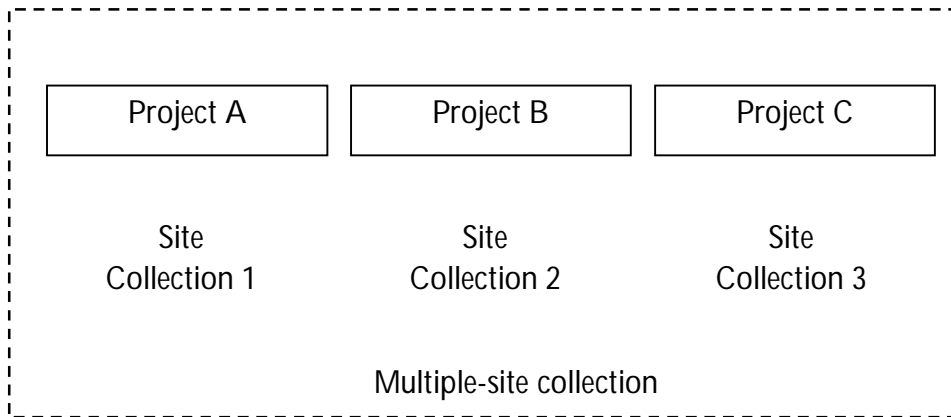
Figure 4-3, Multiple-site collections
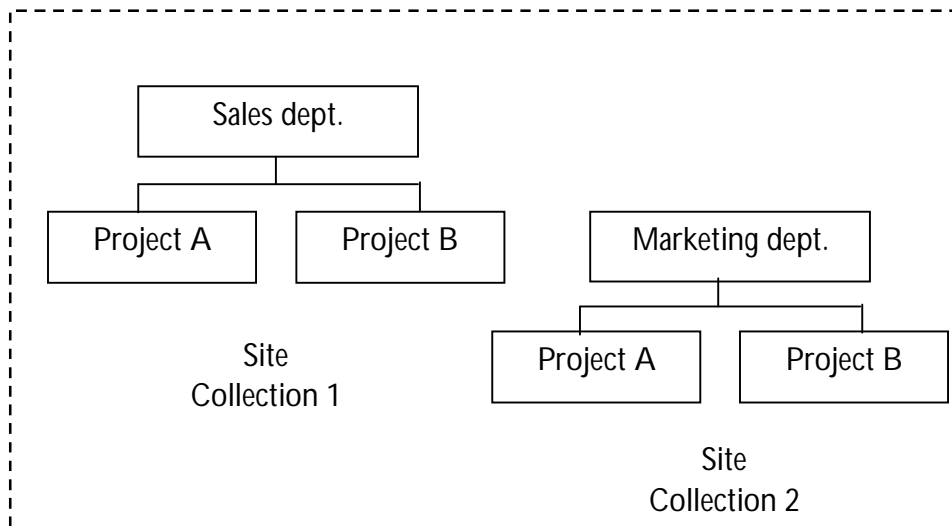
Figure 4-4, PMIS created as subsites

Once we have decided which PMIS structure to use, we can start creating a SharePoint site for our project. The pre-requirement is that the administrator has already created a top-level SharePoint site to which we can add our project subsite.

A manager should start building the PMIS as soon as he gets the project assignment. Before getting involved with the initial phase of project planning, it is important to make sure that all of the necessary components and tools needed in the PMIS are already in place to support project activities from the beginning until the end.

4.1.2 Site Templates

SharePoint offers site templates for convenient site creation. The templates offer already the most important contents which are needed in project management. The table 4-1 shows the site templates available for collaboration portal.

Table 4-1 Default site templates for collaboration portal

Site template name	Description
Team Site	A site used for collaboration among team members.
Blank Site	A blank site with no features. The user can customize the blank site accordingly.
Document Workspace	A site that shows collaboration on or more specific documents
Wiki Site	A site that can be quickly edited to record information and then linked through keywords.
Blog	A site for a person or team to post ideas, suggestions, observations that also allows site visitors to leave comments on the blogs.

4.1.3 SharePoint Page

A Web page in a site can display lists of information, enabling team members to organize the information any way they want, such as by subject, due date, or author. For example, you can do the following:

- Filter the content to see only the set of information that applies to you
- Hide information that doesn't interest you
- Change the order in which the information is listed
- Set up customized views to make it easy for your team members to focus quickly on pertinent information.

(Microsoft Office Online, quoted 13.11.2009)

Parts of a page

A default SharePoint page is illustrated in figure 4-5.
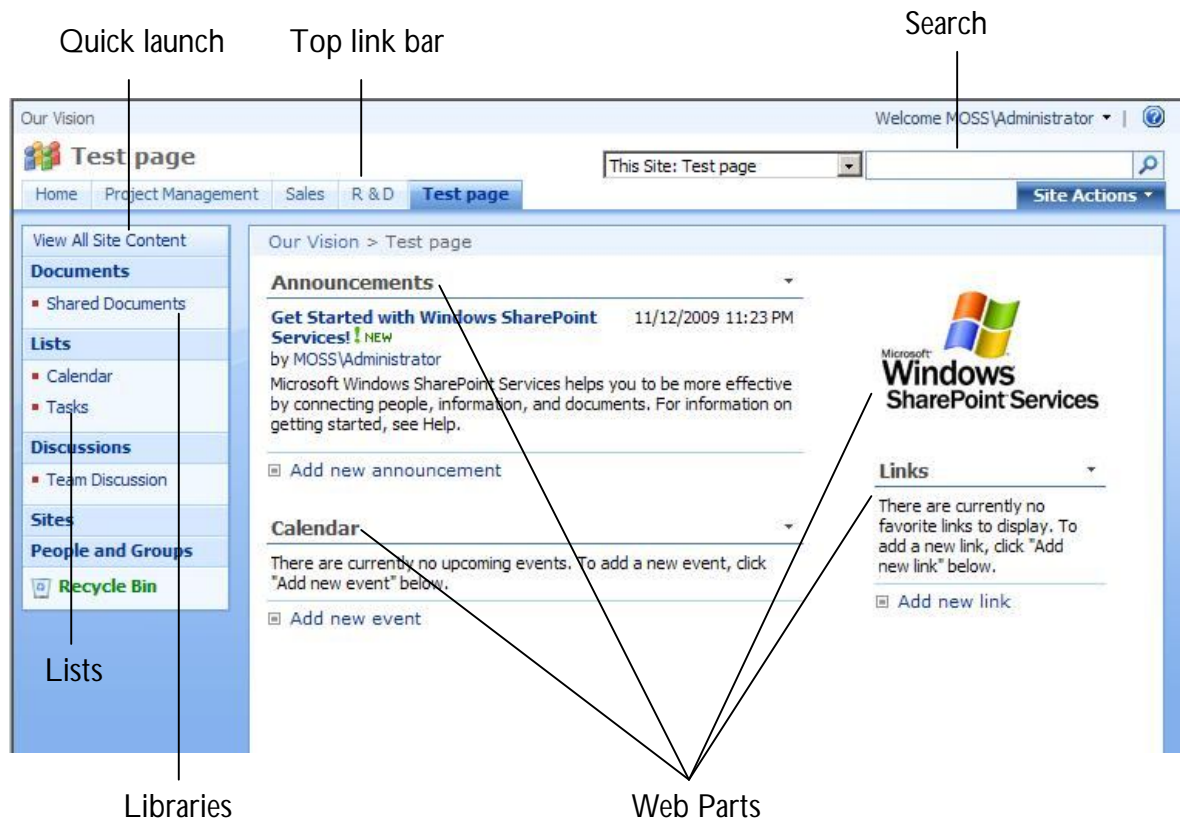
Figure 4-5, Parts of a default SharePoint page.

The parts mentioned in figure 4-5 are common throughout SharePoint sites:

Quick Launch

Displays links to lists, libraries and subsites.

Top link bar

Contains tabs that link to subsites within SharePoint. Subsites are used to organize content and control who can see or change that content.

Lists

Tables of data.

Libraries

Collection of documents within a web site.

Search

Is used to find information within a web site.

Web Parts

Displays views of lists, libraries or other content of a page. Web Parts will be discussed in detail later in this document.

4.1.4   Workspaces

A workspace is a unique Web site that you create, that provides team members with collaboration tools and services for either collaboration on documents or for resources relevant to meetings. A workspace can contain lists of information, such as related documents, team members, and links. To create a workspace site, you must be a member of a permission level with the Create Subsites permission for that SharePoint site. The table 4-2 shows the built-in templates of workspace sites.

Table 4-2, Workspace site templates

Workspace site	Description
Document workspace	This template creates a site for team members to use to work together on documents. It provides a document library for storing the primary document and supporting files, a Task list for assigning to-do items, and a Links list for resources related to the document.
Basic Meeting Workspace	This template creates a site that provides all the basics to plan, organize, and track your meeting. It contains the following lists: Objects, Attendees, Agenda, and Document Library.

Blank Meeting Workspace	This template creates a blank Meeting Workspace site that you can customize based on your requirements.
Decision Meeting Workspace	This template provides a Meeting Workspace that team members can use to review relevant documents and to record decisions. It contains the following lists: Objectives, Attendees, Agenda, Document Library, Tasks, and Decisions.
Social Meeting Workspace	This template creates a site that provides a planning tool for social occasions, featuring a discussion board and a picture library to post pictures of the event. It contains the following lists and Web Parts: Attendees, Directions, Image/Logo, Things To Bring, Discussions, and Picture Library.
Multipage Meeting Workspace	This template creates a site that provides all the basics that team members can use to plan, organize, and track their meetings with multiple pages. It contains the following lists: Objectives, Attendees, and Agenda, in addition to two blank pages that you can customize based on your requirements.

(Microsoft Corporation 2009, quoted 13.11.2009)

4.1.5   Web Parts

Web Parts are reusable components that meet a specific requirement. They can also be understood as the "building blocks" of pages in Windows SharePoint Services. WSS includes built-in Web Parts that are available to use upon installing the product (Microsoft Office Online, quoted 13.11.2009). However, if someone wants to make their own customized Web Part, they can make it by using ASP.NET 2.0 and deploy them to the server.

According to the MSDN Library for ASP.NET Development Center ASP.NET Web Parts is an integrated set of controls for creating Web sites that enable end users to modify the content, appearance, and behavior of Web pages directly from a browser. The modifications

can be applied to all users on the site or to individual users. When users modify pages and controls, the settings can be saved to retain a user's personal preferences across future browser sessions, a feature called personalization. These Web Parts capabilities mean that developers can empower end users to personalize a Web application dynamically, without developer or administrator intervention. (MSDN library, quoted 14.11.2009)

The picture below shows how a typical SharePoint site can be customized by adding Web Parts.
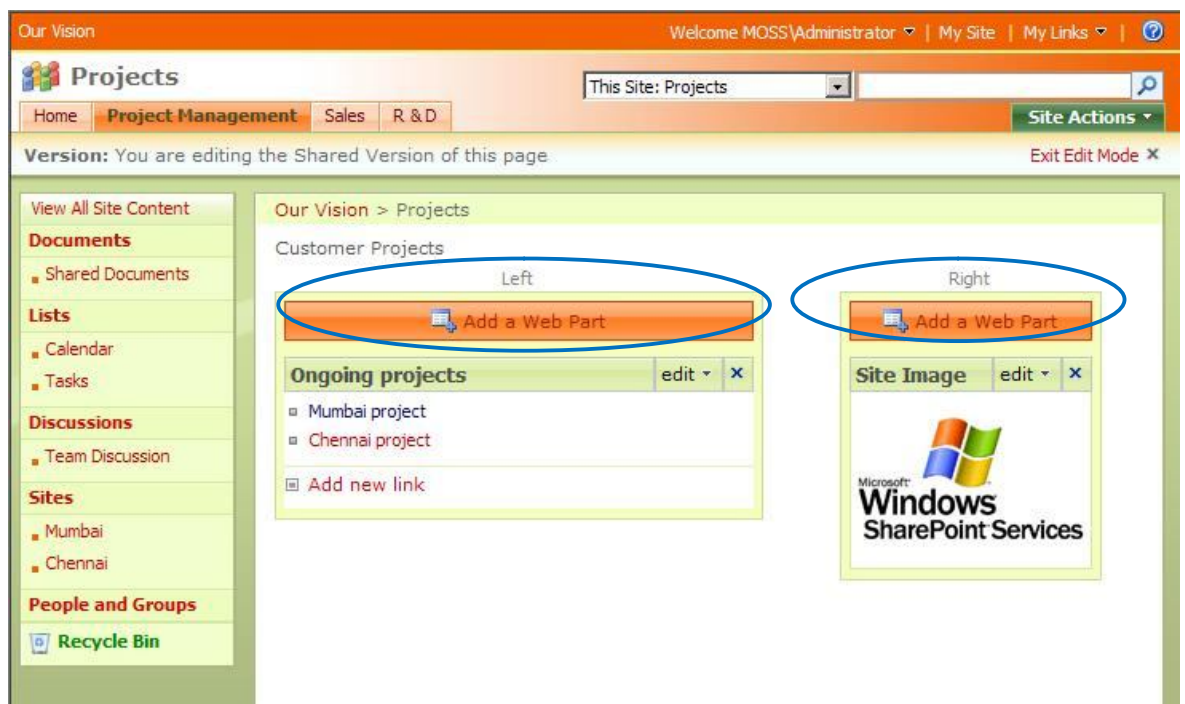
Figure 4-6, SharePoint site displaying web parts

The creation of SharePoint sites is made so simple in SharePoint that even a person without any previous technical know-how of programming or graphic editing can create a very detailed and customized portal with no hassles. This counts as another factor how SharePoint enhances project management because the project manager will not have to spend too much time creating different documents and files for storing his project's basic and important details. Once the project portal is ready to use, all the team members can make full use of it and save a lot of their time.

All the components available in SharePoint can be added as Web Parts on sites. Some useful components which are important in building a PMIS are mentioned below. A good

combination of all of these components can result in a well managed, successful project and a happy project team.

4.1.6   Lists

SharePoint lists are tables of data, much like Excel spreadsheets. But lists can do much more than just store columns and rows of data – in fact, lists are like mini-applications in SharePoint.(Jeff Web, 83)

SharePoint has a wide range of built-in list templates to start from and then customize if and when needed. The lists are divided into three different categories; Communications, Custom Lists, and Tracking.

4.1.6.1   Communications

Communications category has further three kind of list-templates; Announcements, Contacts, Discussion board. Each of these lists is a very simple tool separately, but when they are integrated all together within one project portal and also used regularly and responsibly, they create a quality platform for communicating within the project team or group.

Announcements
Announcements can be used to share important news, upcoming events, status, and other time sensitive information.

Contacts
Contacts are used to collect and store phone numbers, email addresses, and other information about employees or external contacts. Contact lists can even be shared with Outlook.

Discussion board
Discussion board creates threaded discussions among team members. Discussion boards are a very common of sharing ideas about a certain topic in the internet. However, if incorporated in a project web site, this can prove as a very useful tool for discussing about certain issues within the project team. The team members do not have to send e-mails all the time to each

other about small issues. They can just start a thread and continue their discussion and it is visible to all the team members at the same time as it is a shared component of the project site.

4.1.6.2   Custom Lists

Custom lists category has further three kinds of built-in list templates; Custom List, Custom List in Datasheet view, KPI List.

Custom List

This is a blank list which lets you specify your own columns. This can be then added to a page via Web Parts and more items can be added at the same time.

Custom List in Datasheet view

This custom list also lets you specify your own columns but it opens in a spreadsheet-like environment which makes data entry, editing and formatting very convenient. An existing spreadsheet can also be imported in SharePoint when you want a custom list with same columns and contents.

KPI List

A KPI list is used to track and display set of goals. Goals are displayed in colored icons to communicate the degree to which the goal has been achieved. This feature is very handy while tracking the status of the progress of a project. Usually in a project certain goals and milestones are specified in order to keep a track on the progress of the project. In many IT projects, the beginning phase is executed very effectively, but as the complexities in the project increase, the person responsible for the execution is not able to cope up with the changing situation and loses the track of where project stands at that moment and how close or far they are to achieving the final result. Hence, KPI Lists are very important to implement in a PMIS.

4.1.6.3 Tracking

This category consists of six built-in templates: Links, Calendar, Tasks, Project tasks, Issue Tracking, and Survey.

Links

Links are used to list important web pages and other resources related to a task or a project. This again saves a person's time if he/she wants to find a piece of information and has to either browse through hard files or intranet pages or even company's network drives. If the manager puts important links right on the project portal, he is helping his team in finding the right information as fast as possible.

Calendar

Calendar is obviously used to track events, milestones, meetings, and deadlines that can be displayed graphically as a calendar page. Calendar lists can also be shared with Outlook.

Tasks

As the name says itself, they are just a list of tasks. As any manager would make notes of the tasks to do in word, excel or notepad or use paper post-it notes. These tasks are stored digitally and can be then tracked easily.

Project Tasks

This list is created when you want a graphical view (a Gantt chart) on a group of work items that you or your team needs to complete.

Issue Tracking

This feature covers one of the most important and difficult issues concerned in project tracking. This is a list where issues and problems are assigned to individuals and then their progress of the resolution can be tracked.

Survey

A survey list is used when you want to poll individuals using a series of questions. Survey provides features which allow you to quickly create questions and define how users specify

their answers. This list is maybe not so useful for project management specially but there might be some cases where such a survey is needed.

4.1.7 Libraries

The core of any project is its collection of documents, spreadsheets, slides etc. There are hundreds of documents produced during the whole process of project management. Managing documents is made very simple in SharePoint. Libraries are a special type of list that organize content within a site and provide these key features:-

- Templates for creating new documents

- An optional approved status field that indicates whether the document is pending, approved, or rejected.

- Storage for previous versions of documents.

- The ability to reserve documents for editing by checking them in and out.

- Synchronization between list columns and properties stored in the document.

- Integration with Microsoft Office products like Word, Excel, and PowerPoint.

There are many built-in templates for libraries, such as,

4.1.7.1 Document library

This is used to store a collection of documents with the features of versioning, status following, folders and check out.

Versioning

This feature allows you to access any previous version of a document for tracking or recovery purposes.

Check-in/Check-out

This feature helps to maintain document integrity on a project. Each time a user wants to edit document, there are chances that another user starts working on the same document. Then it is just a chance that who saves the last wins. Check-in/Check-out feature has eradicated this redundancy.

Content Approval

The content approval feature prevents the users from viewing documents until they have been approved by a person authorized. It simply allows the content owner to manage which content is displayed in the document library or list. The documents can be in pending, approved or rejected status.

4.1.7.2   Form Library

This library is used when you have XML-based business forms, such as status or purchase orders, that should be managed.

4.1.7.3   Wiki Page Library

Wiki pages can be made to store static instructions or procedures in a project. This library is a collection of interconnected wiki pages.

4.1.7.4   Picture Library

This library is used to store collection of images.

4.1.7.5   Translation Management Library

This is a needed when there are documents in multiple languages and their translation needs managing. This is a common case now in IT field that the documents are usually created in at least more than two languages.

4.1.7.6   Data Connection Library

This library makes it easy to share files that contain information about external data connections. For example, Office Data Connection (ODC) and Universal Data Collection (UDC) files.

4.1.7.7   Report Library

If your tasks include creation, management and delivery of web pages, documents and key performance indicators that communicate metrics, goals and business intelligence information, then it is wise to use a report library template.

4.1.7.8   Slide Library

This library is created when you want to share slides from Microsoft Office PowerPoint. Slide libraries also provide special features for finding, managing and reusing slides.

Through the use of the two fundamental information storage and management capabilities of SharePoint: list and libraries, one can minimize or completely eradicate the need to enter project information twice or in many places again and again.

In order to better understand the concepts and techniques of SharePoint for Project Management, I will refer to a fictional company named Our Vision Pvt. Ltd. throughout the following sections of my thesis.

5 Case Study: Project management using SharePoint at Our Vision Pvt. Ltd.

5.1 Background

Our Vision Pvt. Ltd is a premier e-learning solutions provider with over 20 branches in North India. Established in 1999, they have served around 150 satisfied customers and helped them establish their own e-learning portals. To increase its growth, Our Vision Ltd. is expanding nationwide and opening multiple branches in other major cities of India. Multiple project teams have been assembled, and each team will be responsible for managing the opening of each respective branch.

A project manager is appointed to manage the project and integrating Our Vision into the culture and community of the city. The manager is responsible for two areas which are crucial for the overall success of the company. The first is to have correct project governance. Existing project management standards and processes should be followed. Second, a PMIS must be established for each project team to enable all teams to share and collaborate on detailed project information, risks and lessons learned. It is necessary that the teams collaborate on all phases of project management in order to be able to deliver on the aggressive delivery schedule that the project managers are facing each day.

5.2 Establishing PMIS using SharePoint

At a basic level, PMIS components should allow the project team to:

Centralize project information
Project information includes project contacts, calendars, documents, templates, forms, and checklists. In addition to storing project information, the PMIS should also define who has the access to the information.

Facilitate project communication and collaboration

Collaborative project activities include scheduling meetings, jointly developing proposals, and informally brainstorming project strategies. All activities of this type should be supported by the PMIS.

Automate project processes

Automating project processes, such as change control, should be available in the PMIS. The PMIS can automate the submission of change request forms by sending the form to the appropriate members of the change control board, recording the decision, and routing the necessary actions to be taken to the appropriate stakeholder.

First of all, the project manager has to identify which lists and libraries are necessary, and then customize the SharePoint site to make them available for the users. The table 5-1 below shows which SharePoint components are used to fulfill the purpose of which PMIS component in the case study.

Table 5-1, SharePoint components used for PMIS

PMIS component	Use	SharePoint component
Project announcement	To store and publish relevant project announcements	Announcements list
Project Calendar	To store relevant project events such as meetings, and deadlines.	Calendar list
Project contacts	To store internal and external project contacts.	Contact list
Project information list	To store basic and relevant project information such as project name, number, customer and important key persons.	Custom list
Documentation Management	To store all the relevant project documents, templates, checklists and reports	Document library
Project discussions	To store all the project relevant	Discussion board

	discussions team members do on a certain issue.	
Project tasks	To store project tasks information, assignments and status	Project tasks list
Project resource	To store project resource information and their skills sets	Custom list
Project risks	To store project risks, priority, and status.	Issue tracking list

5.2.1 Project site homepage
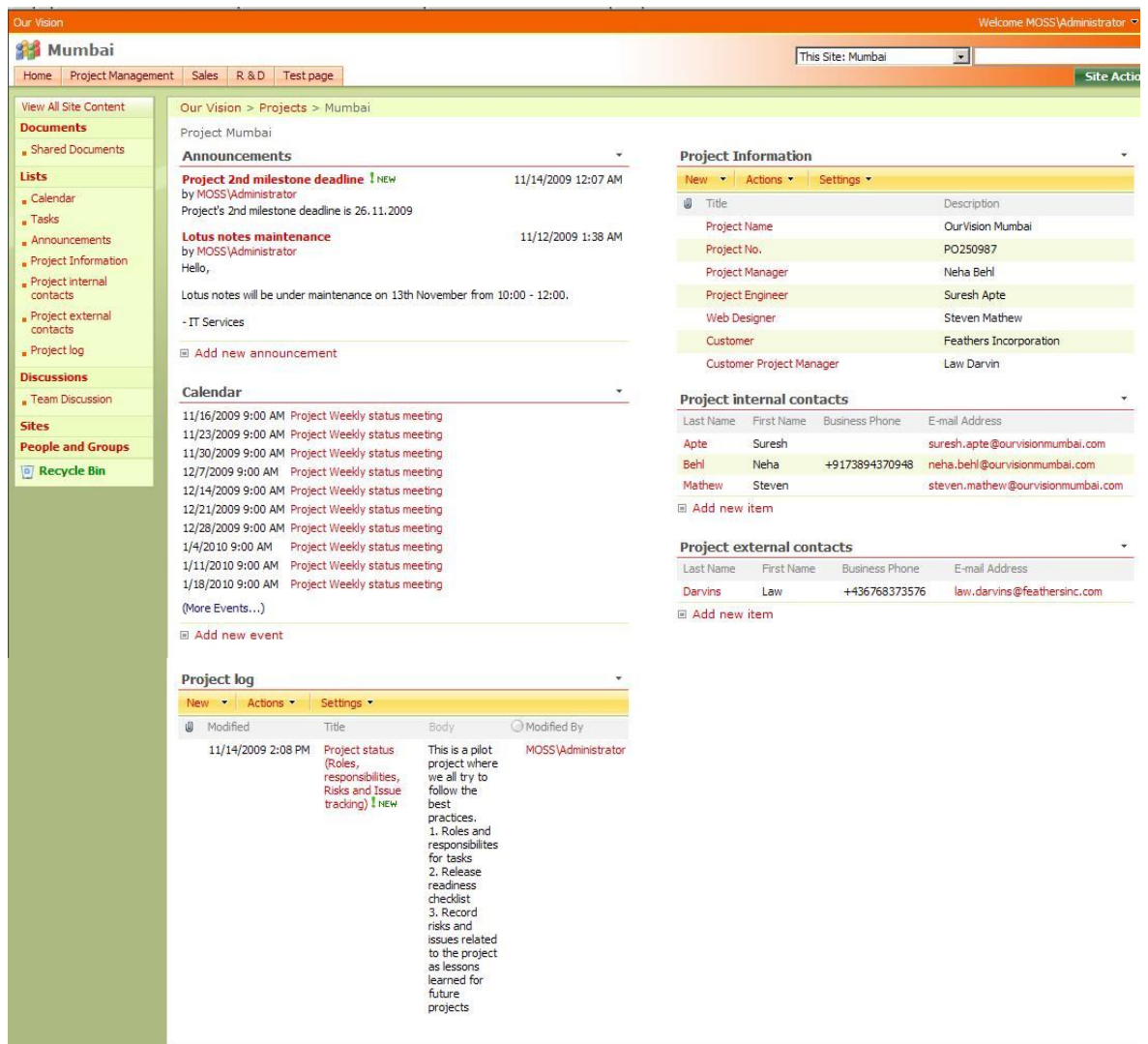
Figure 5-1, Homepage of the PMIS for Our Vision Ltd. Mumbai project

The project site is based on a customized team site template as shown in figure 5-1. This team site allows the manager to create multiple web parts to encompass the important sections of the project information. The table 5-1 lists all the web parts used in the project site.

On the home page of the project, the manager wants to display important **project announcements** and **project calendar** which shows upcoming meetings and deadlines, and a **project log** which is made to track major issues and decisions made during the project lifecycle at a glance. Basic **project information** and **internal and external contact list** is also visible at a glance on the home page. The left panel of the page shows all the available project contents links. A shared document library, calendar list, tasks list, announcement list, project information list, project internal contacts list, project external contacts list, project milestones, and a team discussion board. It is also possible to see who all are allowed to use the project site under **People and Groups** section. All the sites and workspaces can be found under **Sites** link.

5.2.2   Announcement list
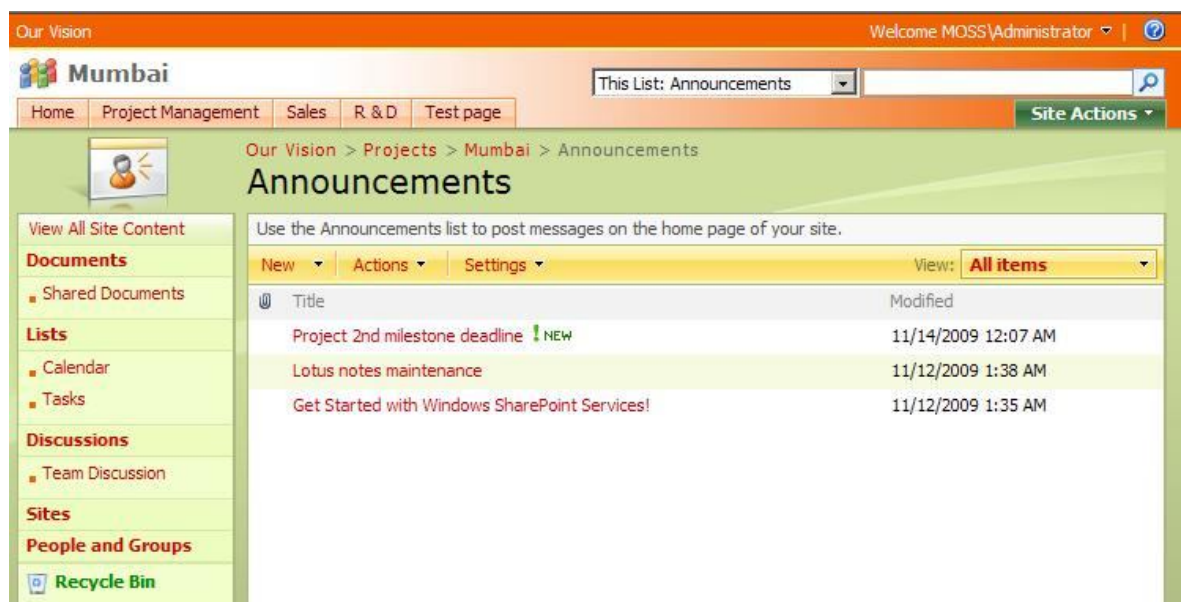
Figure 5-2, Announcements list showing recent announcements

This announcement list is added to the home page of the project so that the important announcements such as deadlines, upcoming events etc. are visible at a glance.

5.2.3 Calendar list
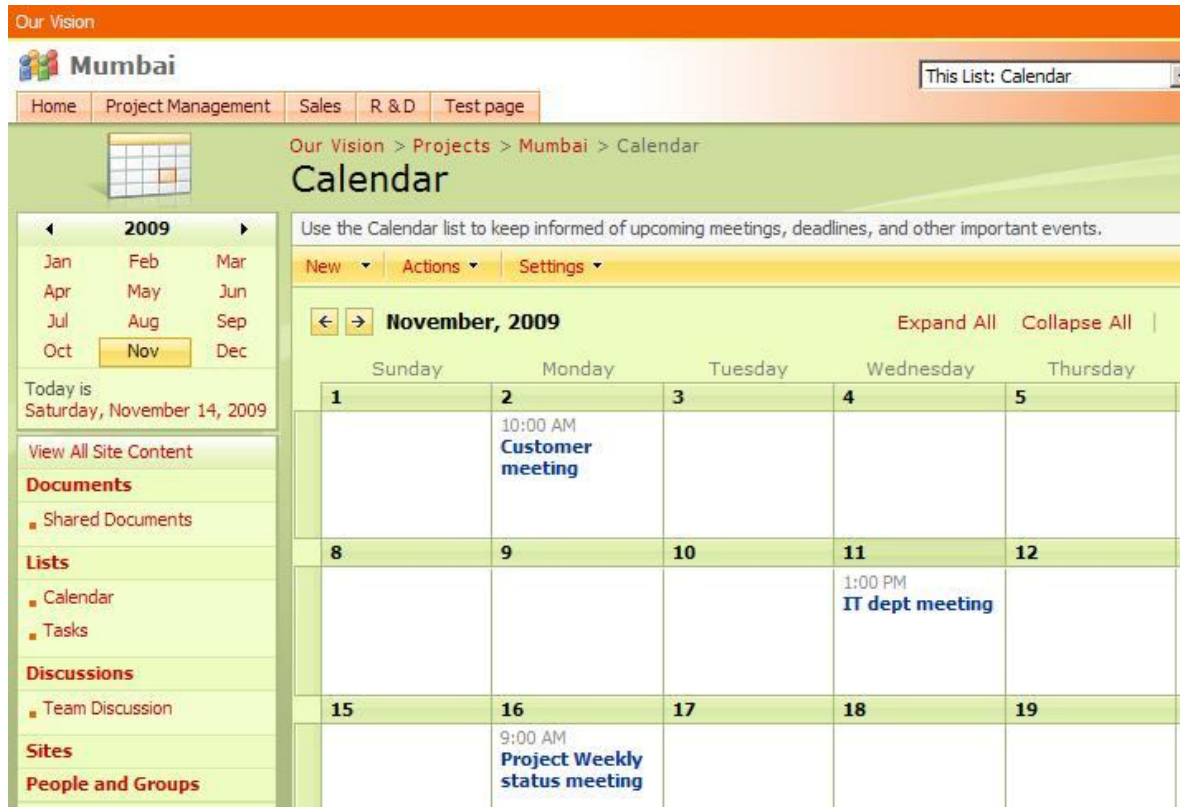
Figure 5-3, Calendar list showing upcoming meetings

The calendar list in figure 5-3 stores all the project relevant important dates. This calendar list has been added on the home page of the project so that the upcoming meetings are visible at a glance.

If a meeting link is clicked, then a window with all the meeting details opens (figure 5-4).

Figure 5-4, Project meeting details

Each meeting has its own web page that shows all the detail information such as title, location, start and finish time, recurrence, attendees, and also a link to the meeting's workspace.

Figure 5-5, Project meeting workspace

The figure 5-5 shows Project Weekly status meeting Workspace. I have added the following items in the workspace:-

- Objective of the meeting
- Agenda of the meeting
- Attendees of the meeting
- Document Library containing previous meeting agenda and minutes

The attendees of the meeting will be notified of the upcoming meeting and will also be alerted when the meeting details are updated by the manager. This saves manager's time to send separate meeting invitations and agenda via e-mail to his team members.

5.2.4 Project information list
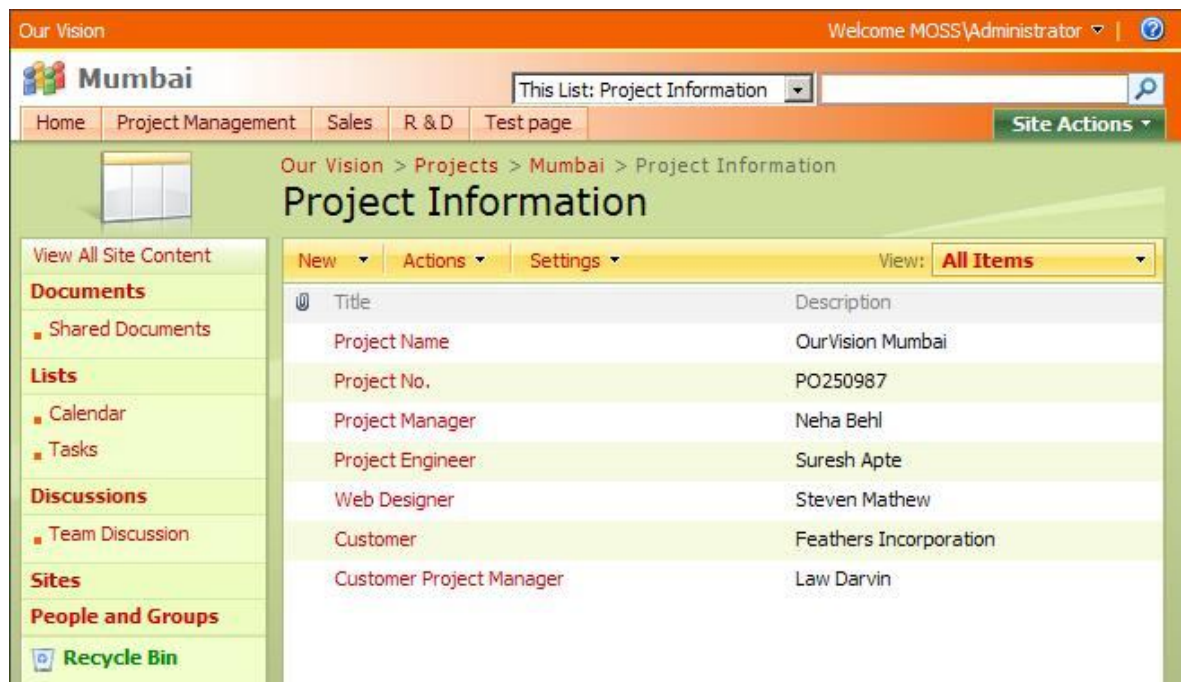
Figure 5-6, A list containing project important information

This list contains all the important information about the project. It is used as a web part on the initial view of the project site.

5.2.5 Project internal and external contacts list

Figure 5-7, List containing projects internal contacts

Figure 5-8, List containing projects external contacts

Project internal and external contact lists are quite handy for the project information and should be visible on the front page of the project site.

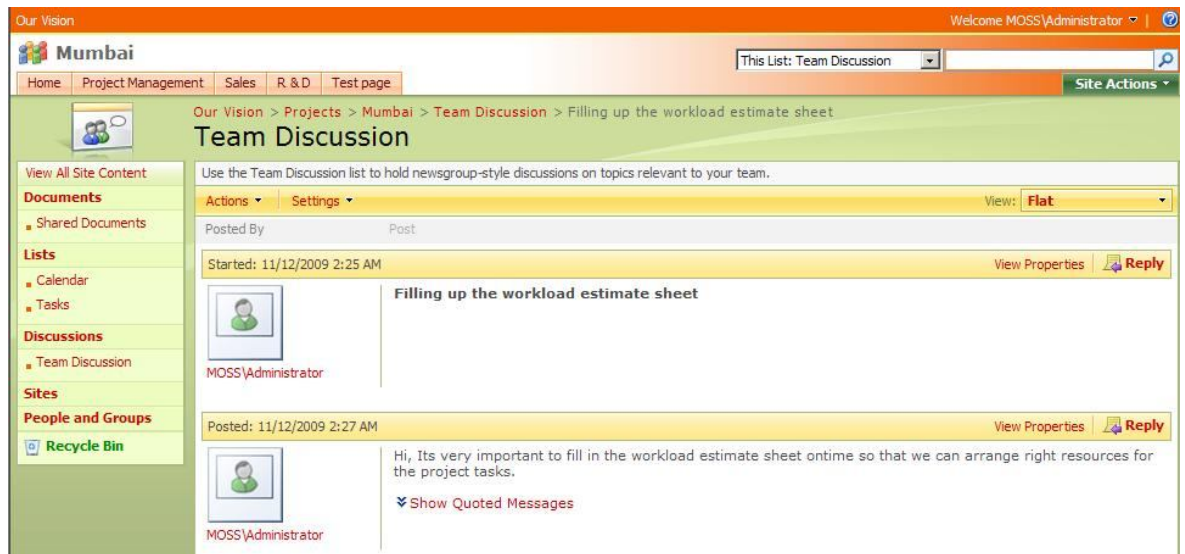### 5.2.6 Discussion board

Figure 5-9, Discussion board for team discussion

I have created a discussion board for the team members to discuss any issue they have in mind and can reply to the discussion thread. This saves their time for writing emails and replying to the emails each time.

5.2.7 Project resource list

Figure 5-10, List containing projects resources

The figure 5-10 shows the Project Resources list. It is a good practice to have all team resources list and also store what are their skills and how much they cost per hour.

5.3 Stakeholder's communication needs

Next step is to identify the stakeholders and make a communications plan to fulfill their need to communicate. This is an important step in a sound project planning. The communication plan facilitates effective and efficient communications with all project stakeholders, describing how project communications will occur while project work is being done. Implementing the communications plan with SharePoint PMIS is very necessary because part of setting up a PMIS is also defining who has access to that PMIS and the level of access that he or she can have. It also identifies reporting needs. Permission settings and reporting needs directly map to a project communications plan. In the case study, site members are added and given permission levels according to their need to communication project information.

Figure 5-11, Permission access for Mumbai project's PMIS

The users or groups added to a site can have different permission levels:-

Full Control

By default, the site owner has this permission. Any user with full control can add, update, and delete site components, site members, and list content.

Contribute

This is the most common type of permission granted to project stakeholders. Users with this permission level can add, update, and delete list and library content.

Read

This level grants users read-only access to the site.

Design

This permission level allows users to customize pages, as well as to add, update, and delete list and library content.

I have given the team members of the project contribute permission. The manager or also called the owner of the site however has full control over the site in case he wants to add additional web parts to the site. The visitors of this site have only read permissions.

Usually the permissions in SharePoint are done at the site level, however permissions for specific lists, libraries or documents and items can also be defined.

5.4 Document management

As we know that any project without a sound document management is going to be a certain failure. The documentation of the project is as important as the final product. Good documentation system is not only required during the project but also after the project lifecycle is over. It also serves as the reference for future issues and sometimes as template for new projects.

In the case study, I have created a document library for the shared documents. All the project related documents are stored in this library and the team members can do many advanced tasks with them. All of the documents have versioning and approval settings enabled and provide the ability for the users to perform check-in/check-out for updating. The figure 5-12 below shows all the shared documents of the project and also what features are possible to do with a document in SharePoint.
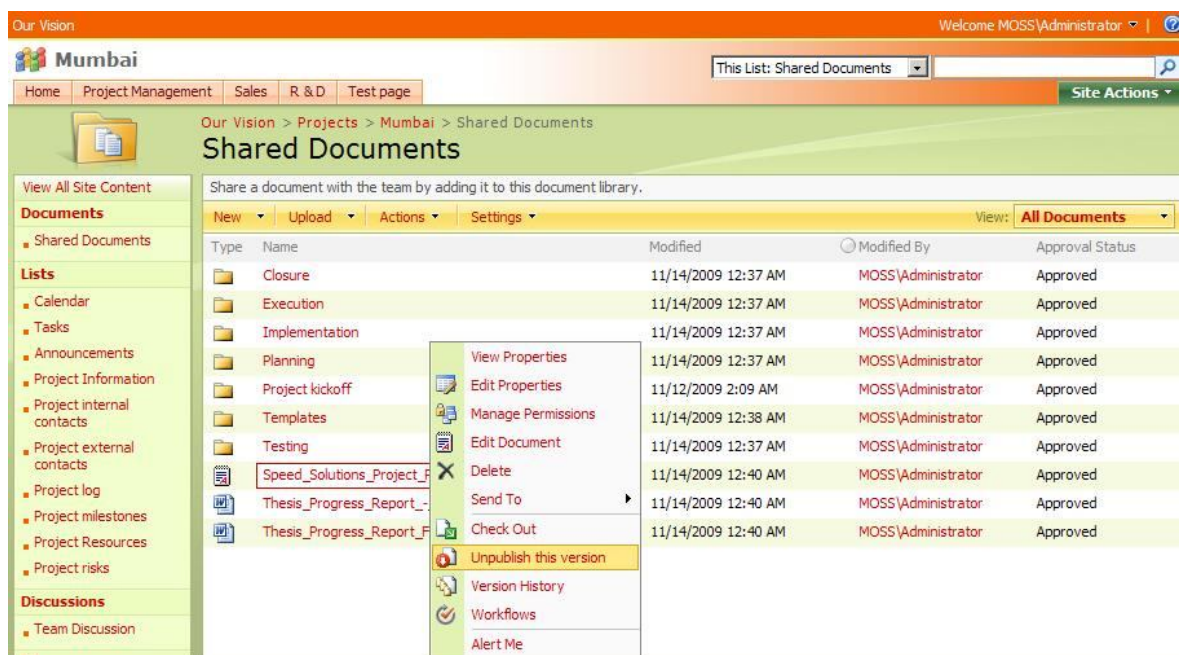

Figure 5-12, Shared Documents Library

The documents in this library are organized according to the phase they belong to. Folders are created for each phase; from planning to the closing of the project. The team members can upload their documents to the respective folder. In order to guide the team members as to what document belongs to what folder, a separate list can be made and uploaded on the project portal for quick reference.

In the document library, following things are enabled to be done with a document:-

View document properties

Edit document properties

54

Manage permissions	As also mentioned above, it is possible to set special permissions for a particular document.
Edit document	This opens the document in a compatible Microsoft Office application
Delete	Delete a document
Send to	A document can be sent to either e-mail or any other location in your personal drive or even in any other document workspace in the PMIS.
Check Out	This means that if you want to edit the document, it is wiser to check out the document, so that no one can overwrite it or do any other changes while you are working on it. Maintaining document integrity is very important.
Unpublish this version	This feature can be used if you want to go back to the previous version and consider it as the latest version.
Version History	The complete version history is saved for each document in SharePoint so that at any point of time it is easy to track any issue related to the documentation.
Alert me	The user can subscribe himself to get the notification in e-mail when any change is made to the document. Alert me option can be used in any list, library or item.

The column "**Approval status**" in the figure 5-12 means that when this content approval setting is applied, an item or file that has been changed remains in a pending state until it is approved or rejected by someone who has permission to approve it. If the item or file is approved, it is assigned an **Approved** status in the list or library, and it is displayed to anyone

with permission to view the list or library. If the item or file is rejected, it remains in a pending state and is visible only to the people with permission to view drafts.

5.5 Project tracking

A project manager's top priority is to gather information about the progress of the project from all of his team members. In my case study, I will track the project schedule and risks

Project Schedule

To ensure the project is on schedule, I will measure the progress of the project by frequently comparing the planned schedule to actually what is happening. I have used project tasks list to keep a track of the project progress. For this I have created a Project tasks list.
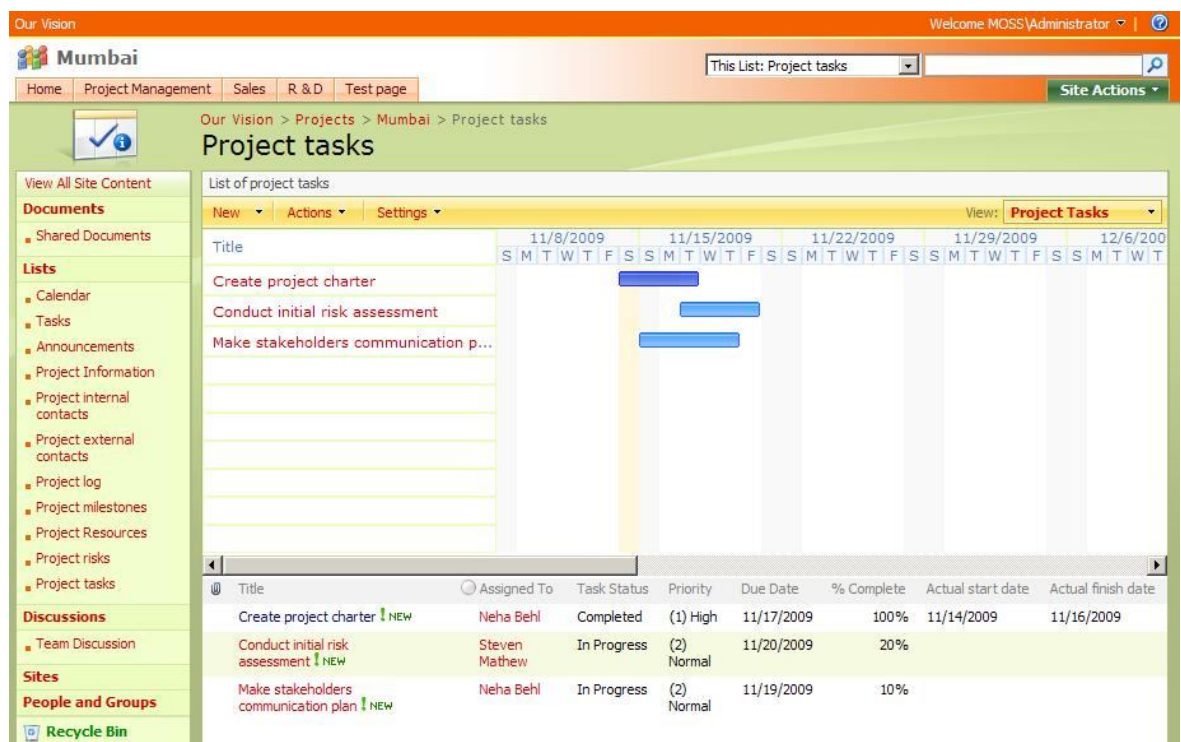
Figure 5-13, Project tasks list

A project tasks list has been created to manage the schedule of the project. This list helps the manager to

- Define project tasks, assignments, start date and due date, and shows them in a Gantt chart,
- Specify task priority and task status,
- Track the percentage complete.

I have customized the project tasks list by adding two custom columns: **Actual start date** and **Actual Finish date** as shown in figure 5-13. The resource assigned for the project task can update these fields when the task is completed. This can help the manager to track the progress of the project tasks in a better way.

Project Risks

It is almost impossible to say that the project has no risks as risks are uncertain events that happen during the project and may affect the project negatively. But it is surely a wise step to identify possible risks in a project. Just identifying the risk is not enough for a good risk management. There are four steps involved in a sound risk management plan.

- Risk identification
- Risk assessment
- Risk prioritization
- Risk response

To manage the risks of the Mumbai project, I have created an Issue tracking list. This SharePoint list is easily used for tracking project issues and risks.

Figure 5-14, Project risks list

Figure 5-15, Risk details

Figure 5-14 shows a Project risks tracking list. All the identified risks are added and monitored continuously during the project execution phase.

Figure 5-15 shows Properties of a project risk. The following properties are added to the risk.

Title	The title of this risk is Team member gets sick, or unavailable.
Assigned to	There is no person assigned to especially for this risk as it is the most general risk involved in any project. The Issue Status of the risk is Active.
Issue Status	The status of this issue/risk is active because that it is valid throughout the lifecycle of the project
Priority	Employees sickness is the most common risk nowadays in India, so the priority is high.
Description	The risk response is added in this field.
Category	Risks can be divided into different categories defined by the project manager.

6   Conclusion

The objective of this project has been to research, study and present the important features, edging advantages, and benefits of Microsoft Office SharePoint Server 2007 to project management. Project management can be defined as the application of knowledge, skills, tools and techniques to project activities to meet project requirements. The major challenges in managing projects have been revealed:

- Unrealistic deadlines are agreed upon during the project planning
- Lack of communication within the team or between the project team and the stakeholders
- The scope keeps on changing or expanding.
- The manager fails to manage the risks, either all the risks are not identified or the countermeasures are not planned for them.
- Customers and end users are not involved during the project.

It is proved in the project that a good PMIS is very important in order to manage a project successfully. There are many software products available that help create a PMIS, however SharePoint has a leading advantage over all other similar products as it offers a quick integration with Microsoft Office and it takes almost no time and effort for the employees of an organization to start using SharePoint. SharePoint is developed in such user friendly manners that even a person without any technical skills can benefit from it to the full extent.

During the project, an example PMIS has been created for a fictious company, Our Vision Ltd. using Microsoft Office SharePoint Server 2007. The PMIS created with MOSS deals with the following PMBOK knowledge areas mentioned in section 2.1.

Project time management – The tools such as calendar list, announcement lists, and project tasks list are created to manage the time and schedule of the project.

Project risk management – A risks/issue tracking list has been developed with all the identified risks, their priority, status, and appropriate countermeasures.

Project communications management – Project communications include information management as well as communication with stakeholders and other people concerned with the project. A shared document library with many advanced features has been created so that the team members have access to the right information and documents. Hence, they not have to spend extra time looking for the information in different places. In addition to this, permission levels to the PMIS site have been issued to the stakeholders appropriately. In this way, the customer and other people concerned can also follow and have update on the project's progress. A discussion board has been provided for the team members that will serve as a common platform to share their ideas and discuss their issues.

Project integration management – A part of integration management is to deal with changes and control them. SharePoint also offers advanced features and components to meet this requirement; however, it has not been included in the PMIS created for the business case. Forms can be created to define change control procedures.

The main reasons why SharePoint is a great PMIS tool can be summarized in a few points:

1. It empowers the project managers as in that a manager no longer needs to depend on the IT department to create a PMIS (usually a project website) for the project. He can create his own customized PMIS with no hassles and in no time because doing it with SharePoint is made so simple.

2. It integrates seamlessly with existing not so hi-tech project management tools such as e-mails, Microsoft Word, Excel, PowerPoint, Projects, Outlook and network shared drives. All the existing documents created using these tools can be quickly synchronized with SharePoint.

3. SharePoint provides traceability to project documents and artifacts. It is very important to track who accessed the project information and when and did what changes. The information management features such as access control, version history, check-in/check-out and content approval can be managed by the manager.

4. SharePoint facilitates effective project team collaboration by implementing tools such as discussion boards, wikis, and workspaces. These tools meet the requirements of both real-time and offline collaboration.

I would personally recommend Microsoft Office SharePoint Server 2007 to any project manager facing challenges managing his/her project. Usually, in a large organization where there are constant changes happening during the project life cycle, it is highly recommended to use SharePoint as a means to create a PMIS. When a project is completed, its PMIS can even be used as a template for future projects.

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