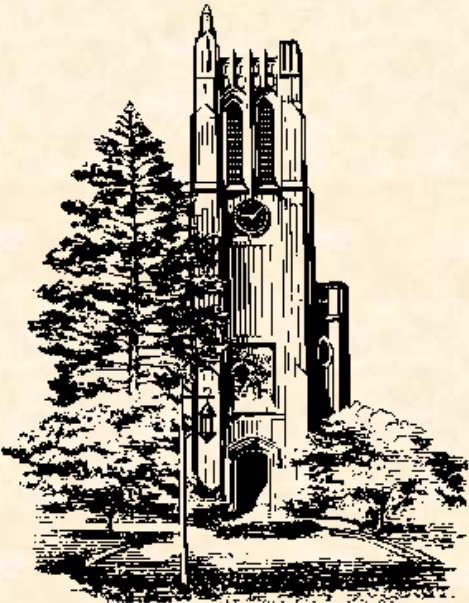# MICHIGAN STATE
U N I V E R S I T Y

Project Plan
Project Portfolio Management

Team 8: Terex

CSE 498, Collaborative Design

Brian Beck
Brad Kasper
Michael Pawlowski
Michael Vo

Department of Computer Science and Engineering
Michigan State University

Spring 2009

Functional Specifications

- Help Terex keep track of Project Status through lifecycle
- Provide storage for Projects
  - Associated Metadata (Title, Budget, etc.)
  - Associated Documents
- Provide Dashboard for quick summary
- Regulate Control over who can Edit Projects
- Populate Custom Reports off Data

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Design Specifications
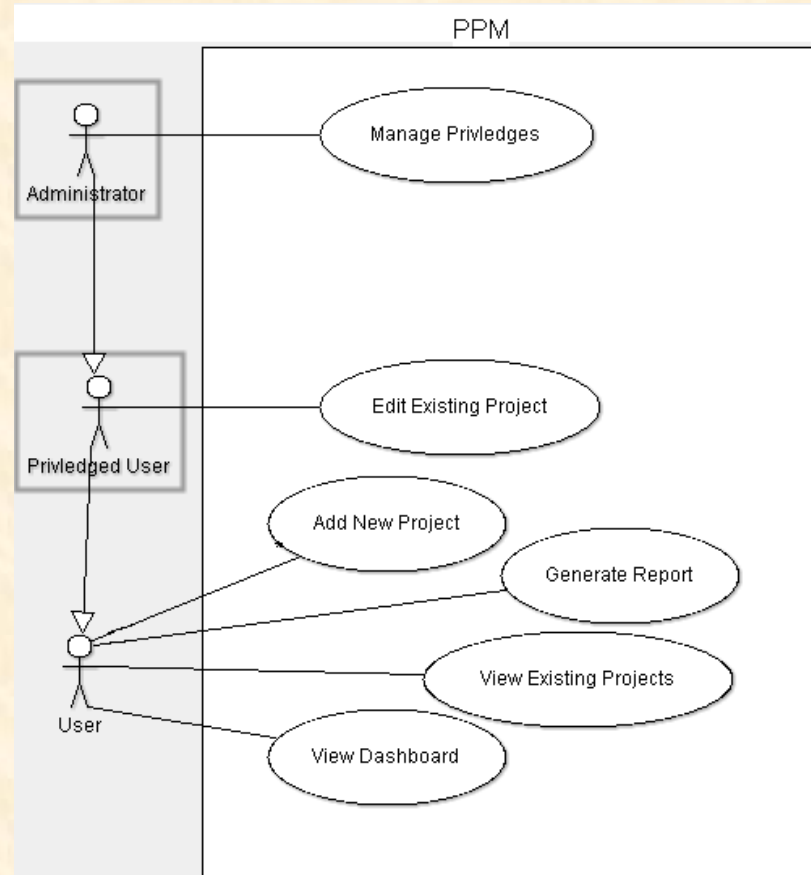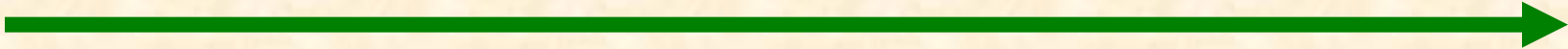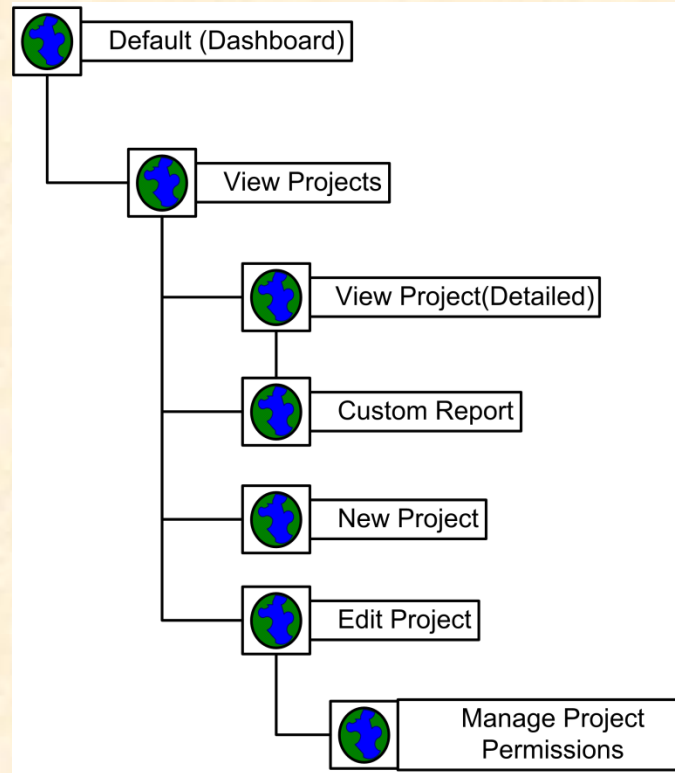
Use Case Diagram for the PPM System

Design Specifications

Field Name	Field Type
Project Title	Line of Text
Project Status	Radio Select
PMF Phase	Drop-Down List
Tollgate Due Date	Date
Next Tollgate	Drop-Down List
Business Sponsor	SharePoint User
Expected Completion Date	Date
Site	Drop-Down List
Business Segment	Drop-Down List
Project Manager	SharePoint User
IT Sponsor	SharePoint User
Project Description	Multi-Line Text
Cost	Drop-Down List
Funded/CAPEX	Drop-Down List
In Budget	Drop-Down List
Priority	Drop-Down List

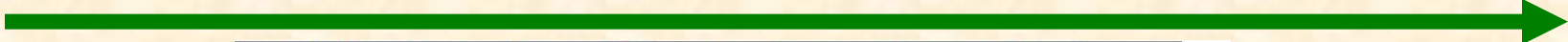| Field Name	Field Type
Comments	Multi-Line Text
Scope	Multi-Line Text
Budget Indicator	Radio Select
Scope Indicator	Radio Select
Time Indicator	Radio Select
PM Assessment Indicator	Radio Select
BU Complex Indicator	Radio Select
IT Complex Indicator	Radio Select
IMPL Complex Indicator	Radio Select
PID Ready	Drop-Down List
RFI/RFP Ready	Drop-Down List
PX Tollgate Ready	Drop-Down List
Business Case Ready	Drop-Down List
Requirements Ready	Drop-Down List
PA Tollgate Ready	Drop-Down List
PG Tollgate Ready	Drop-Down List

Project Data Model

Design Specifications

Page Navigation Heirarchy for the PPM System

Screen Mockups

Dashboard

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Screen Mockups

New Project

Edit Project

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Screen Mockups

Team Terex					Welcome Brian Beck ▾	My Site	My Links ▾	ⓘ

👥 Terex PPM

Team Terex	**Terex PPM**	Document Center	News ▾	Reports	Site Actions ▾

Team Terex > Terex PPM > Project > Project 2 > Permissions

Permissions: Project 2

This list item inherits permissions from its parent folder or list. To manage permissions directly, click Edit Permissions from the Actions menu.

Actions ▾

⚪ Users/Groups	Type	User Name	Permissions
Home Visitors	SharePoint Group	Home Visitors	Read
Mike Pawlowski	User	CSE498T12S0\pawlow29	Limited Access
Terex PPM Members	SharePoint Group	Terex PPM Members	Contribute
Terex PPM Owners	SharePoint Group	Terex PPM Owners	Full Control

Permissions Management

Screen Mockups
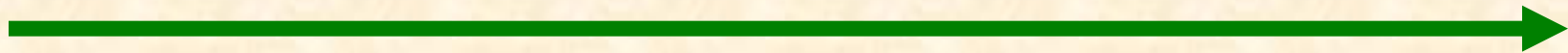
Team Terex

Terex PPM

| Team Terex | **Terex PPM** | Document Center | News ▾ | Reports |

Team Terex > Terex PPM > Project

Project

View All Site Content	A Terex Project
Documents	New ▾ Actions ▾ Settings ▾
Lists	

	Title	Status	PMF Phase	Milestone Due Date	Next Tollgate	○ Business Driver	Expected Completion Date	Reg
▪ Project	Sample	Green	Define	2/12/2009	PI	Brian Beck	3/21/2009	USA
Discussions	Project 2 ! NEW	Yellow	Execute/Control	1/16/2009	PG	Brad Kasper	2/12/2009	TX

Sites

People and Groups

🔲 **Recycle Bin**

Projects Listing

9

Screen Mockups

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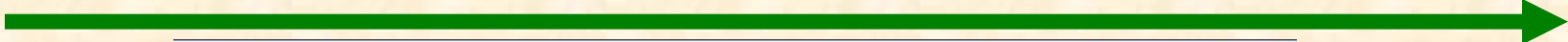
Team Terex			Welcome Brian Beck ▾	My Site	My Links ▾

Terex PPM

All Sites | 🔍 Advanced S

| Team Terex | **Terex PPM** | Document Center | News ▾ | Reports | | **Site Acti** |

Team Terex > Terex PPM > Project > Project 2

Project: Project 2

Close

☐ New Item | ☐ Edit Item | ✕ Delete Item | 🔒 Manage Permissions | Alert Me

Title	Project 2
Status	Yellow
PMF Phase	Execute/Control
Milestone Due Date	1/16/2009
Next Tollgate	PG
Business Driver	Brad Kasper
Expected Completion Date	2/12/2009
Region	TX
Site	WEX3
Business Segment	Construction
Project Owner	Brad Kasper
Project Description	ewqeq
Cost	<$10,000
Funded/Capex	Yes
In Budget	Yes
Priority	1
Comments	
Scope	dwqdqw
Budget Indicator	Red

Created at 1/30/2009 7:29 PM by Brian Beck
Last modified at 1/30/2009 7:29 PM by Brian Beck

Close

Detailed Project View

Technical Specifications

- Project Storage Encapsulated in SharePoint List

- Dashboard Done as ASP.NET User Control

```
<%@ Control Language="C%" %>
<%@ Assembly Name="Microsoft.SharePoint, …" %>
<%@ Import Namespace="Microsoft.SharePoint %>
<script runat="server">
  protected override void OnLoad(EventArgs e) {
    SPWeb web = SPContext.Current.Web;
    SPList list = web.Lists["Projects"];
    SPQuery query = new SPQuery();
    query.ViewFields = @"<FieldRef Name='Title' />"; // etc.
    query.Query = // long XML string omitted
    SPListItemCollection items = list.GetItems(query);
    TableRow tRow;
    TableCell tCell;
    foreach (SPListItem item in items) {
      tRow = new TableRow();
      tCell = new TableCell();
      tCell.Controls.Add(new LiteralControl(item["Title"]));
      tRow.Cells.Add(tCell);
      // repeat for other columns
    }
    // repeat query, display for other segments of Dashboard
  }
</script>
<asp:Table ID="tblDashboard" runat="server" />
```

Technical Specifications

- New Project/Edit Project Pages Based on Stock SharePoint Models

- Customized in ASP.NET
  - New Project Page: Suppress Fields that should not be shown

  - Edit Project Page: Override handler for SPItemEventReceiver:ItemUpdating event to add checks for business requirements
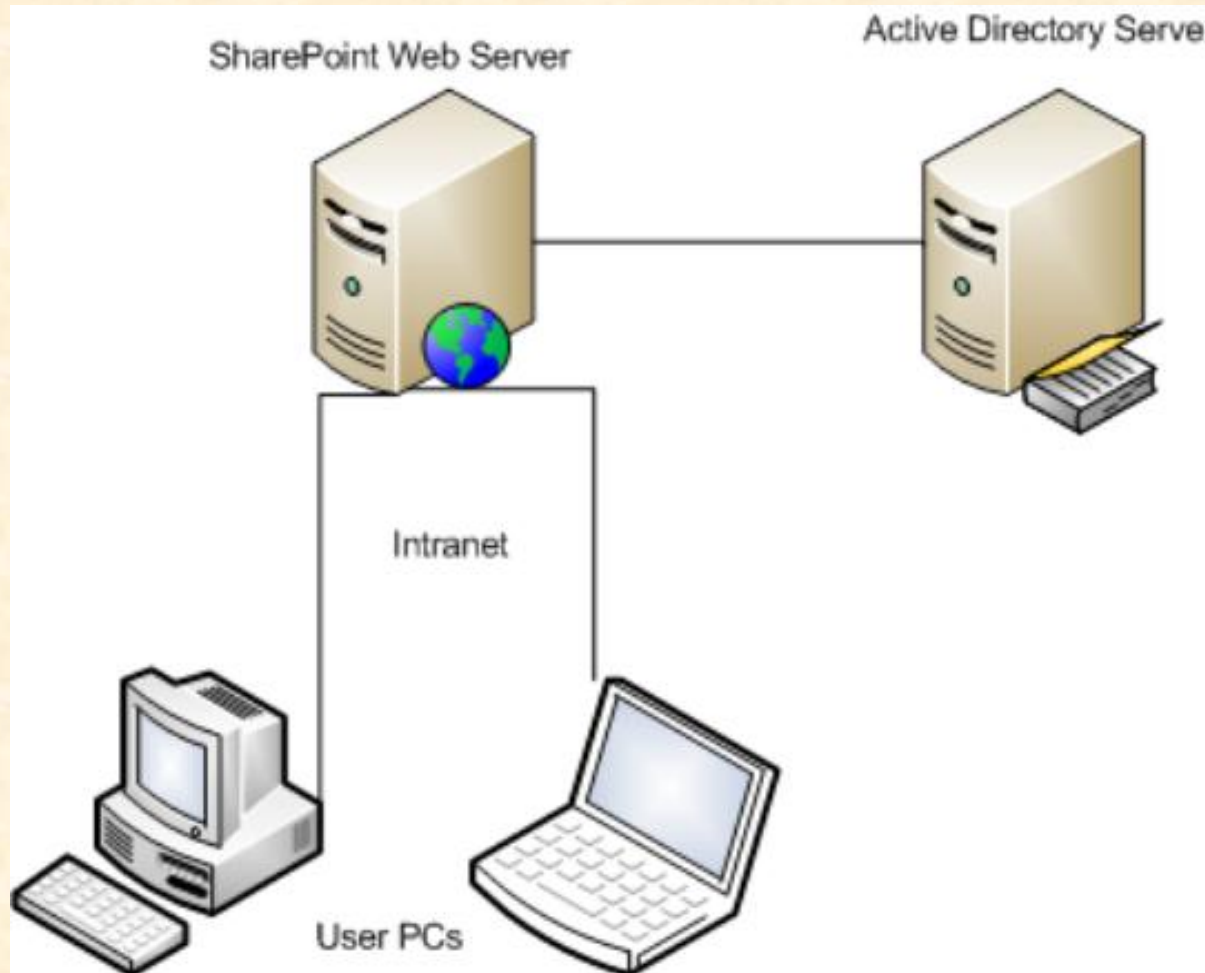
Technical Specifications

- Custom Reports
  - SharePoint Custom Application Pages
  - Written in ASP.NET 2.0
  - Access SharePoint Data through APIs
    - Microsoft.SharePoint.SPList
    - Microsoft.SharePoint.SPQuery
  - Add Links for Reports to Context Menus
    - Hook into CustomAction XML Routines

```
<CustomAction Id="PPMDetailedReport.MenuItem"
  RegistrationType="List"
  RegistrationId="12" // ID of the Project List
  ImageUrl="/_layouts/images/GORTL.GIF" // image to appear next to item
  Location="EditControlBlock"
  Sequence="105" // Position in List
  Title="Generate Detailed Report">
    <UrlAction Url=
"~site/_layouts/Terex/PPMDetailedReport.aspx?ItemId={ItemId}"</UrlAction>
</CustomAction>
```
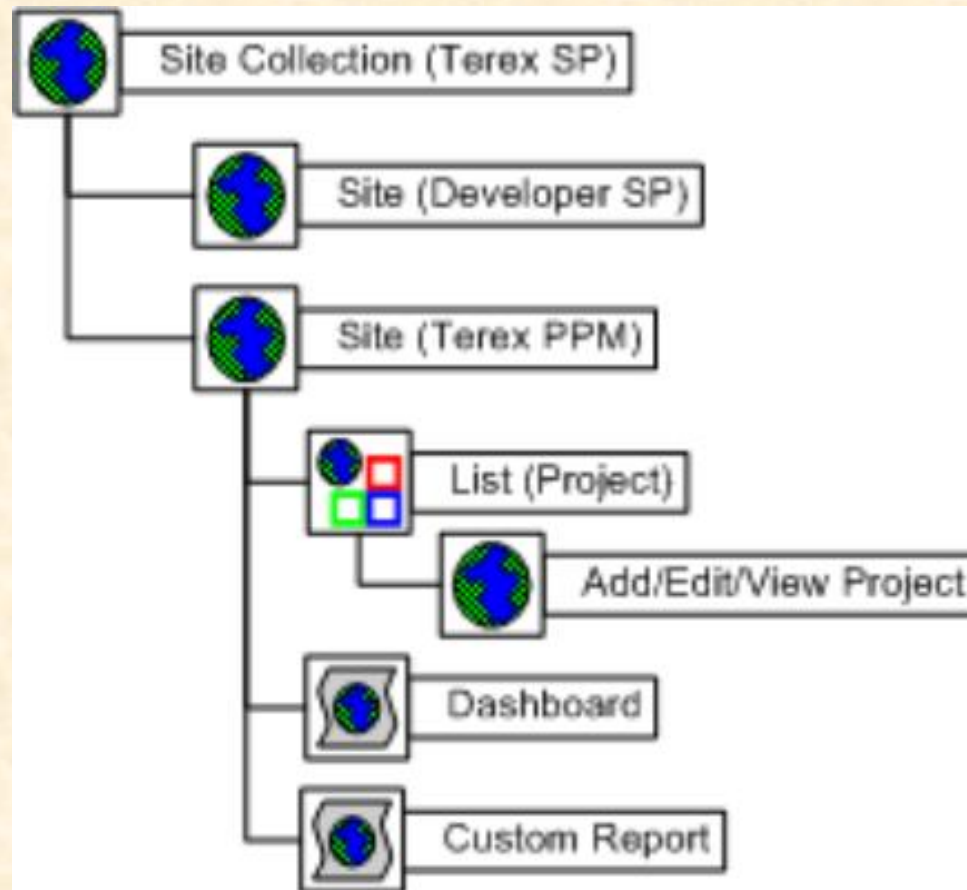
Architecture Illustrated

Team 8: Terex

Architecture Illustrated

System Components

- Hardware Platforms
  - Windows Servers
- Software Platforms / Technologies
  - Windows Server 2003
  - IIS 6
  - ASP.NET 2.0
  - SQL Server 2005
  - SharePoint Server Enterprise 2007

Risks

- ## SharePoint – Getting Code into System
  - Know how in theory, testing needed to ensure our custom code can be made to run in SharePoint

- ## SharePoint – Programming
  - Still have much to learn about APIs

- ## SharePoint – Permissions
  - Have "Hack" to accomplish what needs to be done, but no good way to programmatically control project permissions

- ## SharePoint – Migration
  - Need to have way to reliably move code to Terex Systems. Concerns about configuration variables, List IDs, etc.

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