

# Project Plan

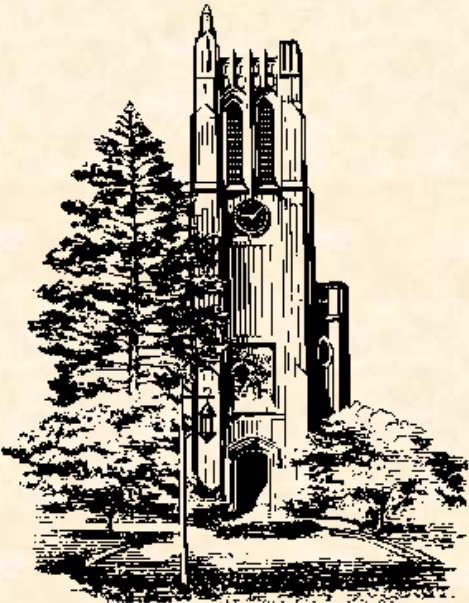
## Project Portfolio Management

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





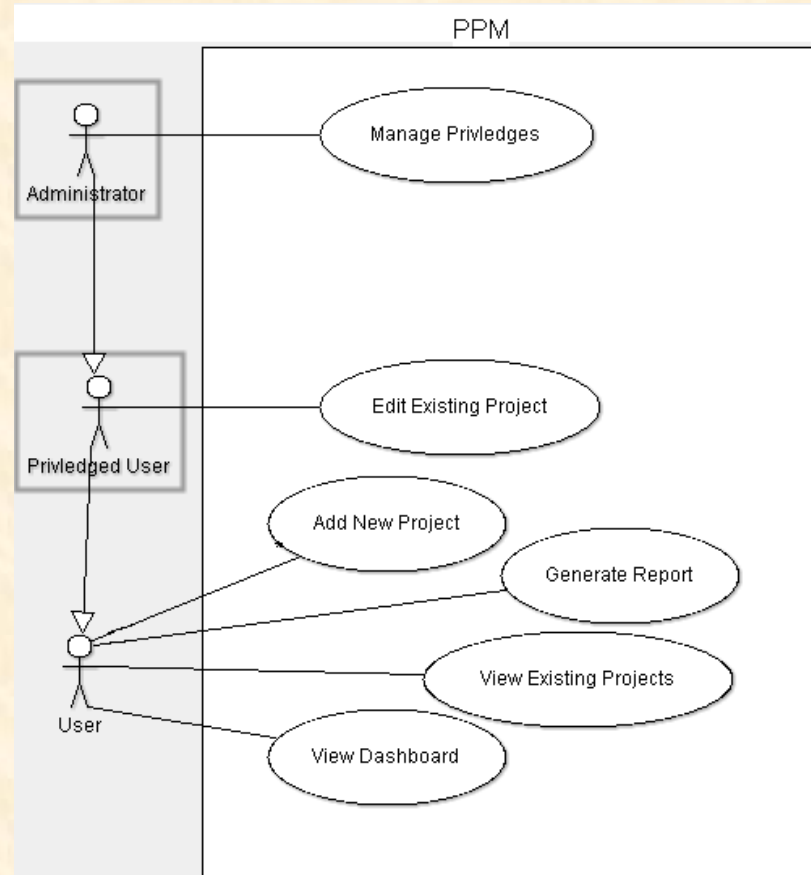
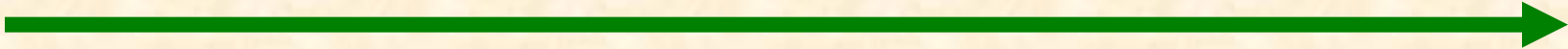
# Functional Specifications

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- 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



# Design Specifications



Use Case Diagram for the PPM System



# Design Specifications

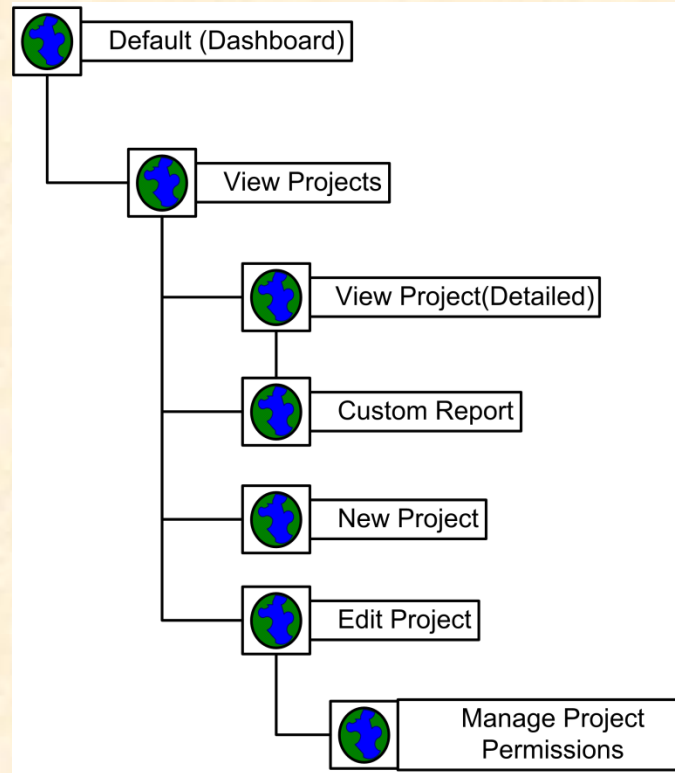
Field Name	Field Type
Project Title	Line of Text
Project Status	Radio Select
PMF Phase	Drop-Down List
Tollgate Due Date	Date
Next Tollgate	Drop-Down List
Business Sponsor	SharePoint User
Expected Completion Date	Date
Site	Drop-Down List
Business Segment	Drop-Down List
Project Manager	SharePoint User
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



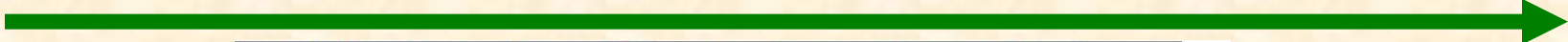
# Design Specifications



Page Navigation Hierarchy for the PPM System



# Screen Mockups



APPROVED (POST PA)				Timing			Key Performance Indicators			PM ASSESSMENT	IT Director	BU
Name	Status	Funded/CAPEX	Phase	Next Tollgate	Tollgate Due Date	Go-Live Date	BUDGET	SCOPE	TIME			
Name 1	Orange	YES	Plan	PG	OCT, 08	DEC, 09	Green	Orange	Orange	Orange	Team Member	AWP
Name 2	Green	NO	Plan	PG	DEC, 09	MAR, 09	Green	Orange	Green	Green	Team Member	AWP
Name 3	Orange	YES	Plan	PG	DEC, 09	MAR, 09	Green	Red	Orange	Orange	Team Member	AWP
Name 4	Green	YES	Plan	PG	OCT, 08	NOV, 08	Green	Green	Red	Red	Team Member	Cranes
Name 5	Orange	YES	Plan	PG	NOV, 08	DEC, 09	Green	Orange	Green	Green	Team Member	RB
Name 6	Green	YES	Plan	PG	DEC, 09	JAN, 10	Orange	Green	Orange	Orange	Team Member	Minning
Name 7	Red	NO	Plan	PG	DEC, 09	JAN, 10	Green	Orange	Orange	Orange	Team Member	Utilities
Name 8	Green	YES	Plan	PG	NOV, 08	JAN, 10	Green	Green	Green	Green	Team Member	AWP
Name 9	Green	YES	Plan	PG	OCT, 08	NOV, 08	Green	Orange	Green	Green	Team Member	Cranes
Name 10	Green	YES	Plan	PG	NOV, 08	JAN, 10	Green	Green	Orange	Orange	Team Member	RB

INITATE (PI to PA)		Timing		ESTIMATES			ASSESSMENT	APPROVED User Requirement	IT Director	BU
Name	Funded?	Next Tollgate	Date	BU Complex	IT Complex	IMPL Complex				
Name 11	YES	PX	OCT, 08	Green	Orange	Orange	Orange	YES	Team Member	AWP
Name 12	YES	PA	DEC, 09	Green	Orange	Green	Green	YES	Team Member	AWP
Name 13	YES	PA	DEC, 09	Green	Red	Orange	Green	YES	Team Member	AWP
Name 14	NO	PA	OCT, 08	Green	Green	Red	Red	NO	Team Member	Cranes
Name 15	NO	PA	NOV, 08	Green	Orange	Green	Green	NO	Team Member	RB
Name 16	NO	PX	DEC, 09	Orange	Green	Orange	Orange	NO	Team Member	Minning
Name 17	YES	PA	DEC, 09	Green	Orange	Red	Orange	YES	Team Member	Utilities
Name 18	YES	PA	NOV, 08	Green	Green	Green	Green	YES	Team Member	AWP

DEFINE (PRE PI)		ESTIMATES			PID READY?	IT Director	BU
Name	Funded?	BU Complex	IT Complex	IMPL Complex			
Name 19	YES	Green	Orange	Orange	YES	Team Member	AWP
Name 20	YES	Green	Orange	Green	YES	Team Member	AWP
Name 21	YES	Green	Red	Orange	YES	Team Member	AWP
Name 22	NO	Green	Green	Red	NO	Team Member	Cranes
Name 23	NO	Green	Orange	Green	NO	Team Member	RB
Name 24	NO	Orange	Green	Orange	NO	Team Member	Minning

Team 8: Terex



# Screen Mockups

Team 8: Terex

Attach File | Spelling... \* indicates a required field

Region \*

Business Segment \*

Site \*

Title \*

Description \*

Owner \*

In Budget? \*  Yes  No

Priority \*

Due Date \*

Scope \*

Business Drivers

BU Complex \*  Green  Yellow  Red

IT Complex \*  Green  Yellow  Red

Implement Complex \*  Green  Yellow  Red

Cost \*  Green  Yellow  Red

Comments

OK Cancel

←  
New Project

→  
Edit Project

Attach File | Spelling... \* indicates a required field

Region \*

Business Segment \*

Site \*

Title \*

Description \*

Owner \*

Status \*  Green  Yellow  Red

Funded/CAPEX  Yes  No

Phase \*  Define  Initiate  Plan  Execute & Control  Close

Priority \*

Next Tollgate \*

Milestone Due \*

Due Date \*

Scope \*

Business Drivers

Budget  Green  Yellow  Red

Scope  Green  Yellow  Red

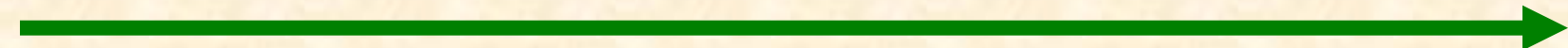
Time  Green  Yellow  Red

Comments

OK Cancel



# Screen Mockups



Team 8: Terex

Team Terex Welcome Brian Beck ▾ | My Site | My Links ▾ | ?

**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 ▾

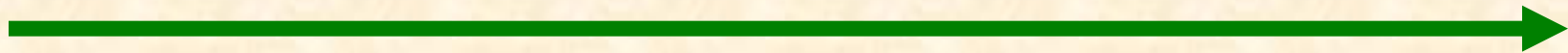
<input type="radio"/> Users/Groups	Type	User Name	Permissions
Home Visitors	SharePoint Group	Home Visitors	Read
Mike Pawlowski	User	CSE498T1250\pawlow29	Limited Access
Terex PPM Members	SharePoint Group	Terex PPM Members	Contribute
Terex PPM Owners	SharePoint Group	Terex PPM Owners	Full Control

Permissions Management





# Screen Mockups



Team 8: Terex

Team Terex

Terex PPM

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

Team Terex > Terex PPM > Project

## Project

A Terex Project

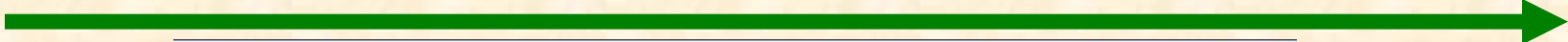
New | Actions | Settings

ID	Title	Status	PMF Phase	Milestone Due Date	Next Tollgate	Business Driver	Expected Completion Date	Rec
	Sample	Green	Define	2/12/2009	PI	Brian Beck	3/21/2009	USA
	Project 2 <small>NEW</small>	Yellow	Execute/Control	1/16/2009	PG	Brad Kasper	2/12/2009	TX

Projects Listing



# Screen Mockups



Team Terex | Welcome Brian Beck | My Site | My Links

Terex PPM | All Sites | Advanced Search | Site Actions

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

Team Terex > Terex PPM > Project > Project 2

## Project: Project 2

Close

New Item | Edit Item | Delete Item | Manage Permissions | Alert Me

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

Team 8: Terex

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

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- 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

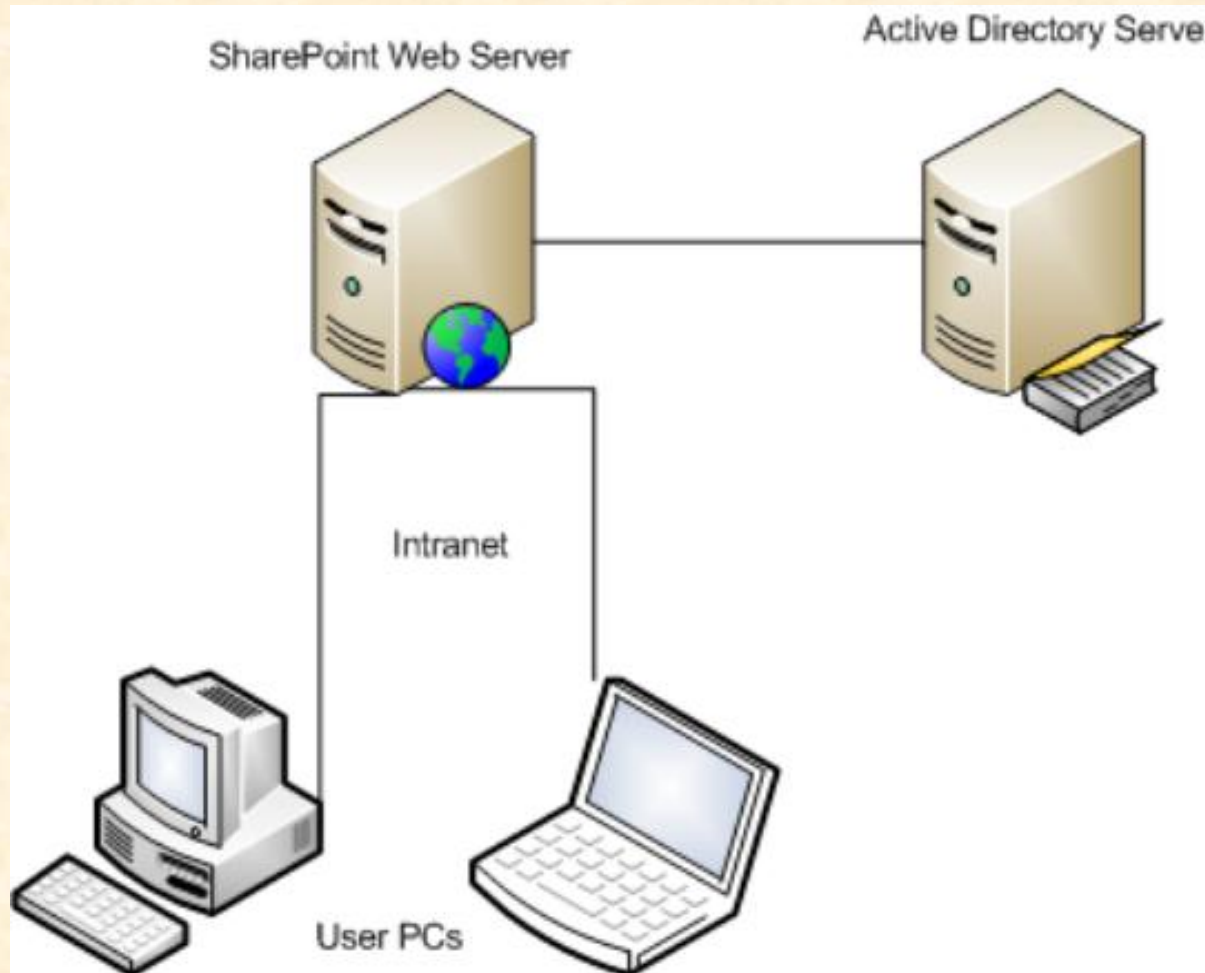


- Custom Reports
  - SharePoint Custom Application Pages
  - Written in ASP.NET 2.0
  - Access SharePoint Data through APIs
    - Microsoft.SharePoint.SPList
    - Microsoft.SharePoint.SPQuery
  - Add Links for Reports to Context Menus
    - Hook into CustomAction XML Routines

```
<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>
```

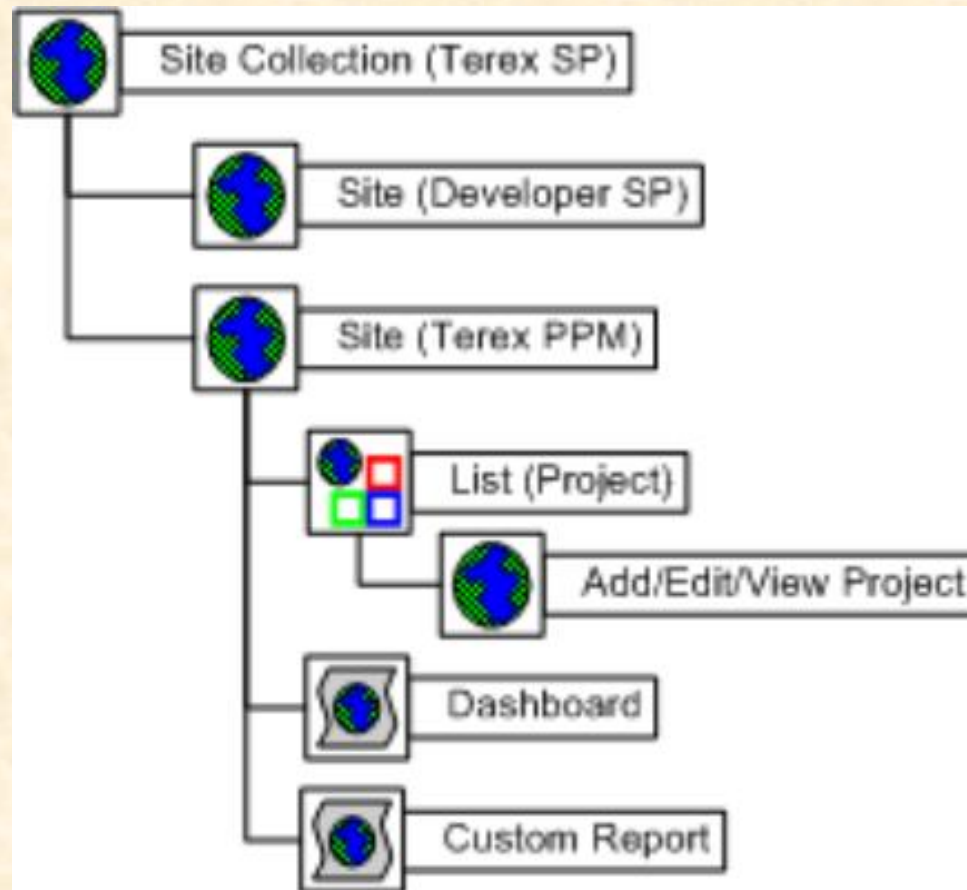


# Architecture Illustrated



# S

# Architecture Illustrated





# System Components

A thick green arrow pointing horizontally to the right, starting from the left edge of the slide and ending under the title.

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





# Risks

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- **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.