

# Requirements Management (REQM)



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Software Engineering Project Management 2015/16

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# Agenda

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- What is requirement gathering and why do we need it? (Rabee)
- What is CMMI? (Anas)
- How does CMMI say about requirements gathering?(Saad)
- What is Agile and Scrum?(Hassaan)
- How does Agile handle requirements gathering?(Rabee)
- A real world example of requirements gathering (Hassaan)

(The above bullets indicate the research done by each member. Compilation, editing of the research and making of the presentation was done by Falak and Hamza)

- **What is Requirement Management?**

“management of all requirements received or generated by the project”

- documenting, **analyzing, tracing, prioritizing** and agreement
- Continuous process throughout the project
- Ultimately a document to which the final product should conform.



- **Why do we need it?**

- Management of requirements of the project's products
- Product components
- Identify inconsistencies between requirements and the project's
- Documentation of Stakeholder's need

- **Important point - requirements WILL change!**

## **Why?**

- evolving customer needs
- technology maturation
- standards evolution
- changes in environment
- incorrect initial requirements specification

# Introduction of Requirements Gathering

- **Can be divided into:**
  - Understanding requirements
  - Obtain commitment to requirements
  - Manage requirement changes
  - Maintain bidirectional traceability of requirements
  - Ensure alignment between project work and requirements.

# What is CMMI?

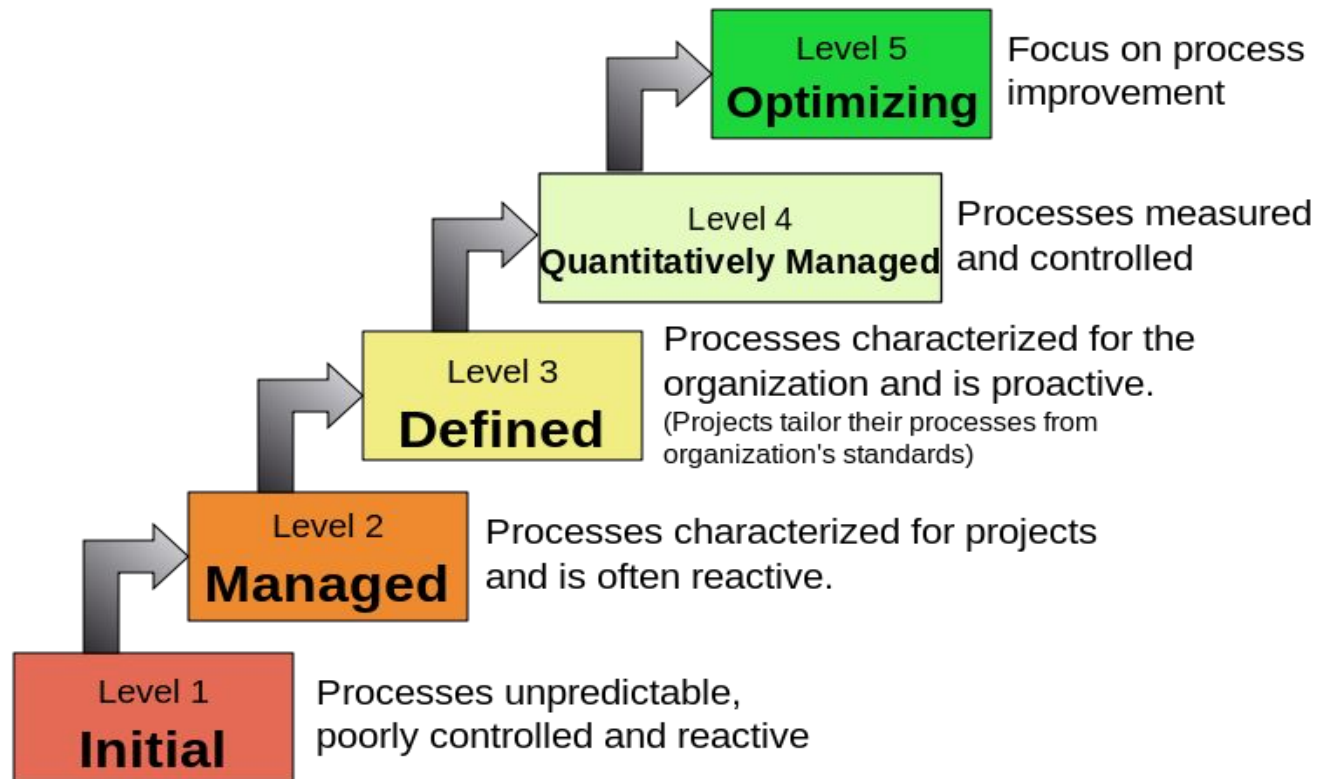
- **Capability Maturity Model Integration (CMMI)** is a process improvement model which is used to solve any issues regarding performance at any level of organization at any industry.
- Carnegie Mellon University , the Software Engineering Institute in Pittsburgh (USA) , proposed this model in 1987.
- The model provides a general framework which focuses on identifying key process areas and methodologies within organization.

# Why need CMMI?

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- Deliver quality product and/or services.
- Earn handsome profit
- Disciplined and mature process within organization.
- Increase productivity of organization.

## Characteristics of the Maturity levels





# Requirements Management (CMMI)

*“Requirements Managements process manages all the technical and non-technical requirements of a project’s product or product components and remove any inconsistencies within the project.”*

The project keeps a set of requirements in a project by performing the following tasks:

- Managing all changes to requirements.
- Maintaining relationships among requirements, project plans, and work products.
- Ensuring alignment among requirements, project plans, and work products.
- Taking corrective action.

Purpose of the Requirement Management

- Manage requirements of the project’s products and product components.
- Ensure alignment between requirements and projects’ plans and work products.
- Ensure a high level of quality and value of the existing requirements.
- Helps to observer the specified costs and time frame.

## 1. Understanding requirements.

- meaning of the requirements.
- determining resources.
- review with provider.

Legal requirement providers in open-source projects:

- Users, who have used the software for many years.
- Users with experience in open-source software.
- Users with commitment.

## 1. Understanding requirements.

Examples of evaluation and acceptance criteria

- Clearly and properly stated
- Complete
- Consistent with one another
- Uniquely identified
- Appropriate to implement
- Traceable
- Achievable
- Tied to business value
- Verifiable

## 2. Obtain commitment to requirements.

“Obtain commitment to the requirements from the project participants”

- After a set of requirements have been approved it needs commitment from the people implementing those requirements.
- These commitments after negotiation should be documented.
- Requirements can evolve throughout the process.
- As a result requirements are documented after evaluation.

## 3. Manage requirement changes.

“Manage and document changes to the requirements as they evolve during the project”

Requirement often change during development. This could be due to different reasons

- Requirements change requests, impact reports, history.
- Requirements status, database.
- Document all requirements & changes. Maintain change history.
- Evaluate impact of changes.
- Make requirement & change data available for project.

## 4. Maintain bidirectional traceability of requirements.

Track relationship between each unique product-level requirement and its source in both the directions.

- **Forward Traceability**

Ensures that we are building the right product.

- **Backward Traceability**

Ensures that that we are building the product right

## Bidirectional Traceability

- Analyze the impact of a change
- All work products affected by a changed requirement
- All requirements affected by a change or defect in a work product
- Current status of the requirements and the project
- Identify missing requirements
- Ensure that the derived requirements are documented.
- Maintain requirements traceability from a
  - requirement to its derived requirements and
  - allocation to work products.
- Requirements traceability matrix.

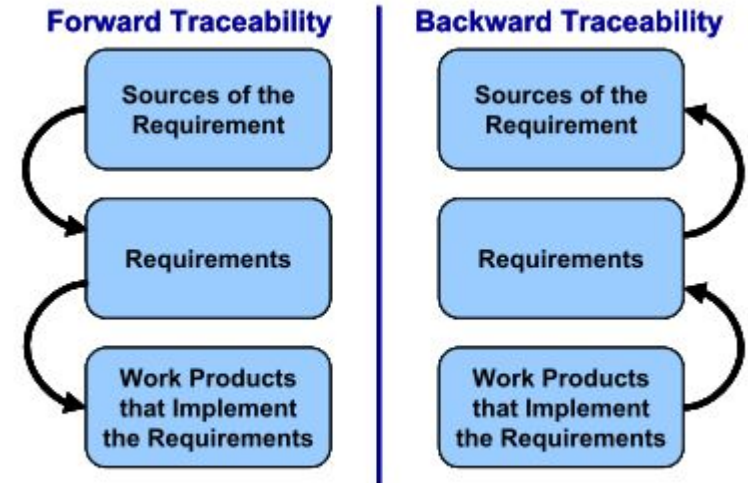


Figure 1: Bidirectional (Forward & Backward) Traceability

## 5. Ensure alignment between project work and requirements

“Ensure that project plans and work products remain aligned with requirements.”

- Finds inconsistencies between requirements and project plans and work products.
- Initiates corrective actions to resolve them.

### Practices:

- Review project plans, activities, products for consistency with requirements and their changes.
- Identify source of inconsistency.
- Identify changes that should be made.
- Initiate corrective actions.



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*“Agile is the ability to change or create the uncertain and unstable project or product environment. ”*

## **Manifests of Agile:**

- Individuals and interactions over processes and tools
- Working software over comprehensive documentation
- Customer collaboration over contract negotiation
- Responding to change over following a plan

# 12 Principles of Agile

- Satisfying Customer by providing regular delivery of quality software system.
- Change requests even in late development.
- Delivery of software in a week or a month.
- The team including Business stakeholders and development team must work closely
- Trust and motivation to team members.
- Face-Face conversation between team members to provide relative information.

# 12 Principles of Agile

- conversation between team members to provide relative information.
- main goal is software is working properly.
- The timeline must be constant for delivering the project.
- Technical excellence and design is a essential for agile.
- Simplicity — the art of maximizing the amount of work not done — is essential.
- The best architectures, requirements, and designs emerge from self-organizing teams.
- At regular intervals, the team reflects on how to become more effective, then tunes and adjusts its behavior accordingly.

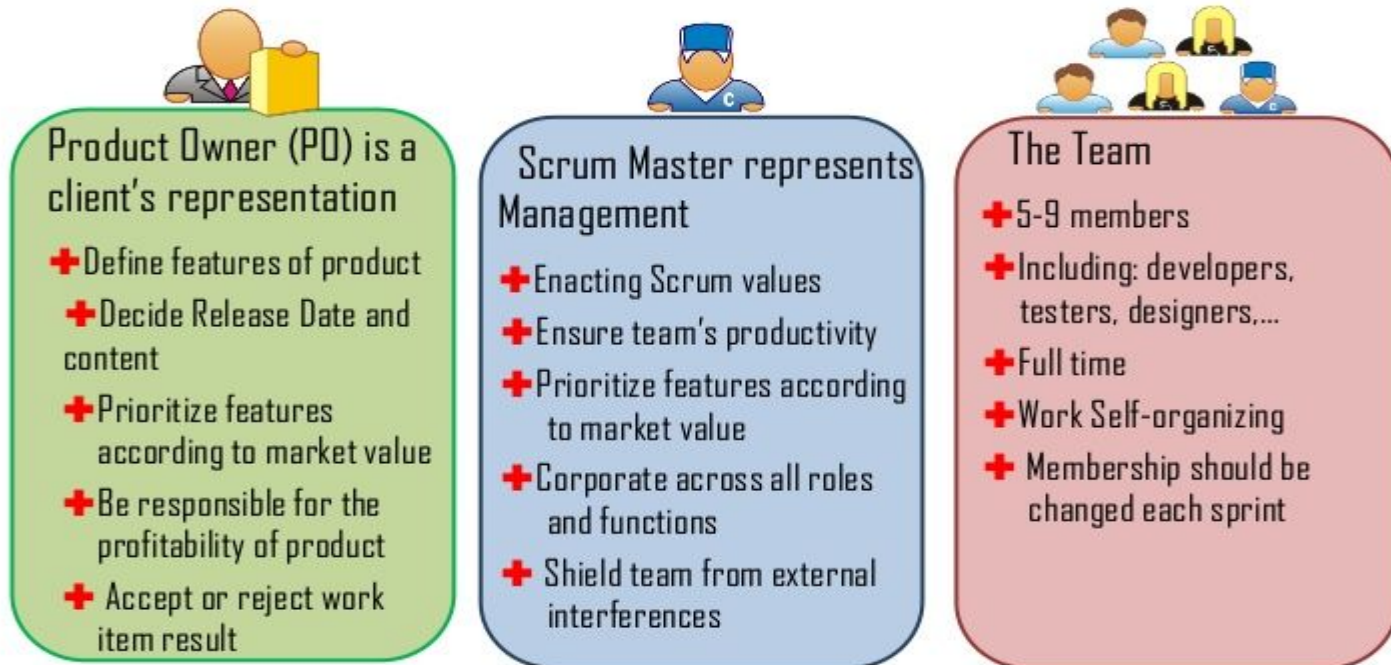
Agile project management focuses on:

- Flexibility
- Team Input
- Delivering quality products

## What is SCRUM ?

- Scrum is the one of the approaches of agile movement.
- Framework to developing and encouraging the complex projects or products.
- Scrum emphasises on collaborating , functioning software, self management, flexibility to gain business needs.

## What are roles in Scrum?



### A practice for prioritizing features (or User Story)

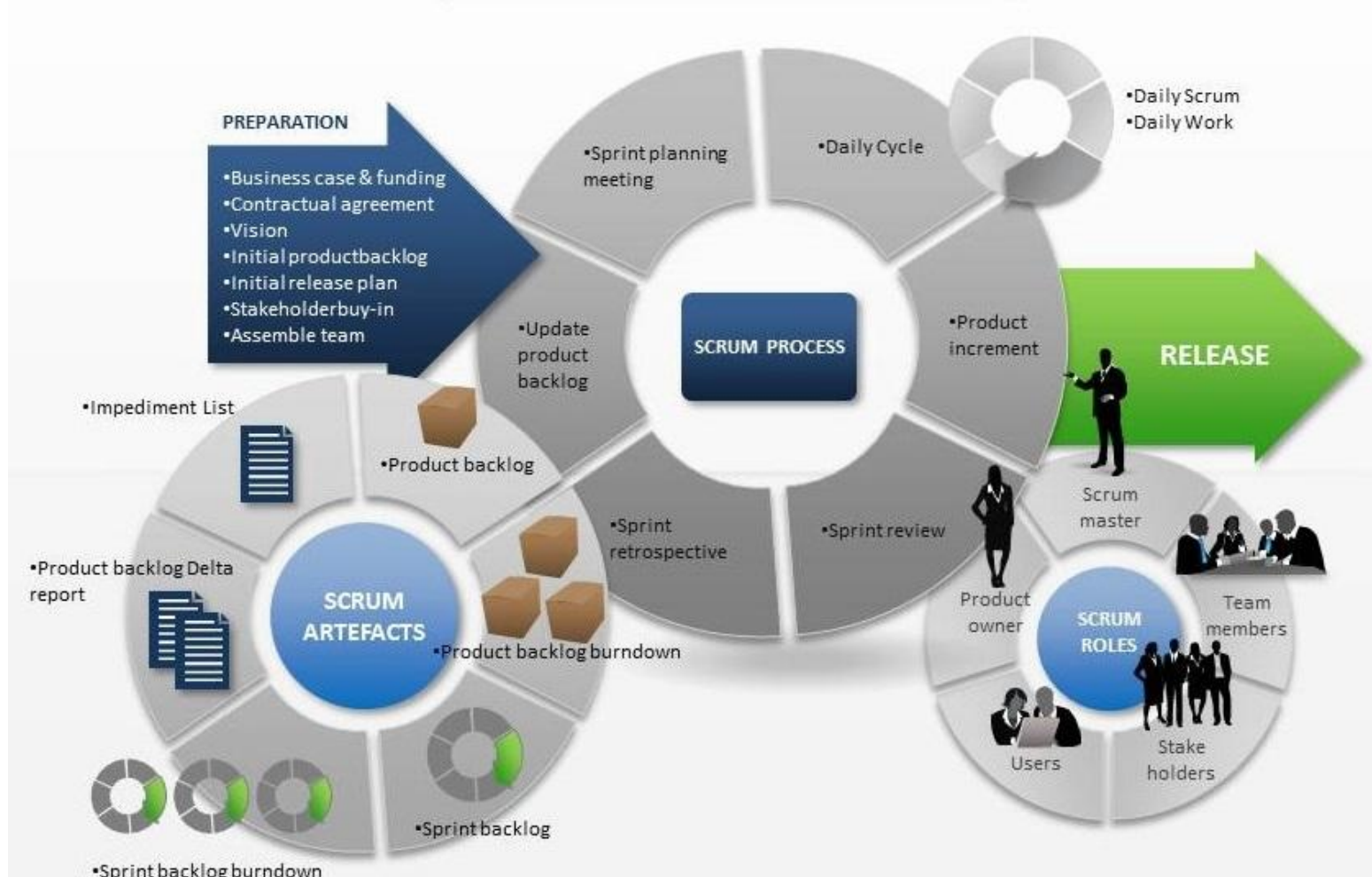
Priority = Max (5 (or 6) x priority that assigned by PO, sum (priority that assigned by team members))

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# SCRUM Cycle



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*“Requirements are managed in scrum using the product backlog.”*

## What is the product backlog?

- ordered list of everything that might be needed in the product
- Single source of requirements
- lists all features, enhancements, functions to be implemented

## Product backlog properties:

- Always changing
- Early development only lays down initially known requirements
- Evolves with time as requirements become more defined
- Each item has attributes; description, estimate, order and value



# Requirements management in SCRUM (Contd.)

## Items in the backlog:

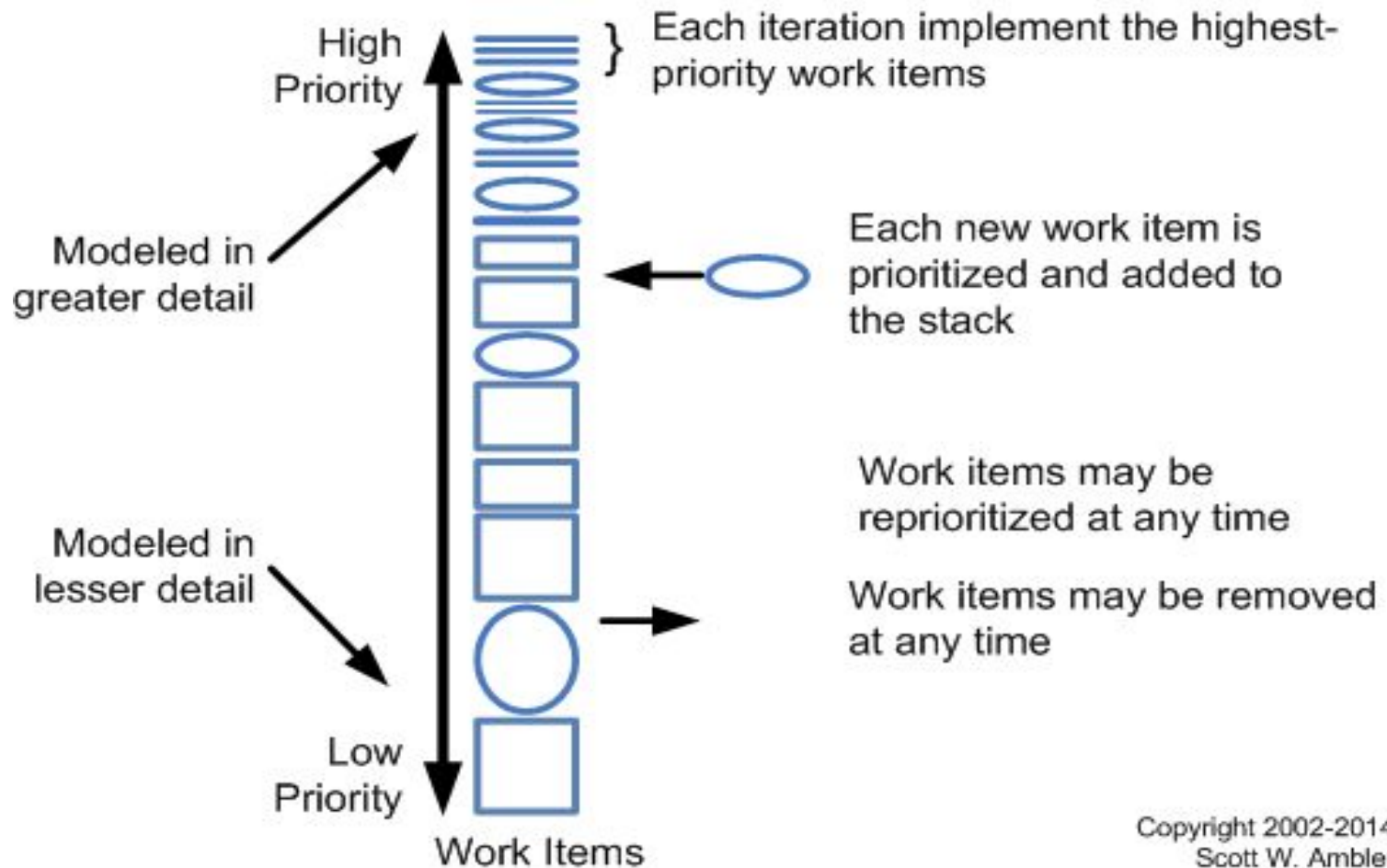
- Each item small enough to be completed in one sprint
- Each item has a time estimate associated with it, decided on by the development team
- Items are picked by development teams
- Higher priority items are picked first.

# Requirements management in SCRUM (Contd.)

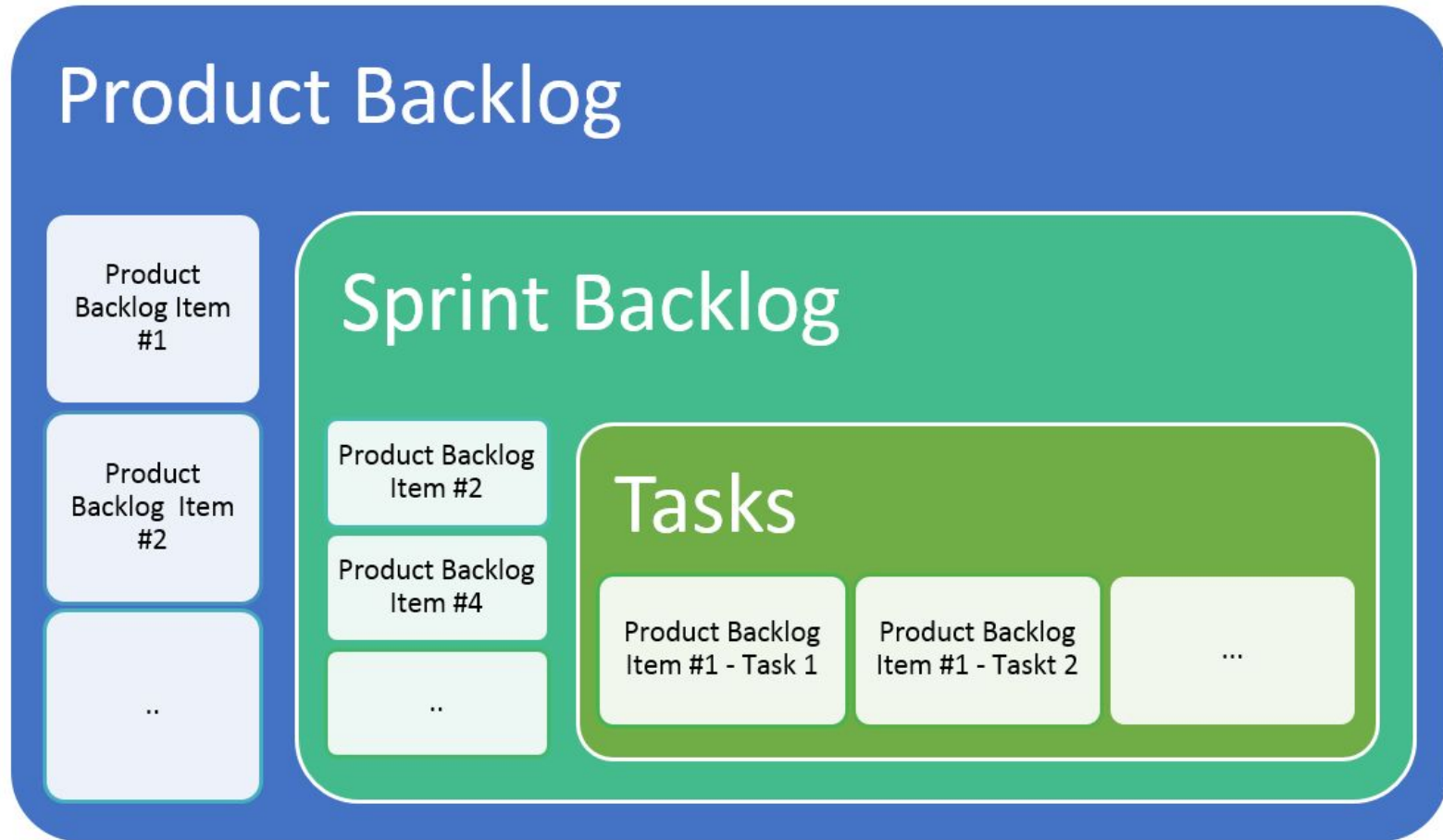
## Product backlog refinement:

- Adding of details, estimates and order to items
- Collaboration between product owner and development teams
- Review and revision of items
- However, items can be modified at any time by the owner

# Requirements management in SCRUM (Contd.)



# Requirements management in SCRUM (Contd.)



# Requirements management in SCRUM and CMMI

Scrum	CMMI
Product Backlog Refinement	Understanding Requirements
Picking of work items by dev teams during sprint planning	Obtain Commitment to Requirements
Changing product backlog and managing changes during sprint planning.	Manage and document changes to the requirements as they evolve during the project
Sprint meetings. Daily standups. Product backlog refinement.	Ensure alignment between project work and requirements



# Example Project

**Employee Enhancement Portal solution**  
Systems Ltd. CMMI level 3 certified

# Prime Objectives

- Transform from manual and silo based administrative structures into ubiquitous environment
- Having the facility of shared data within all internal/external departments
- all processes being workflow driven.

# Expense Reimbursement Form

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## Requirements Gathering

- Sessions with business users
- Understanding AS-IS process
- Paper work





- Project Plan is managed (example next slide)
- Requirement management also used to identify  
Inconsistencies between Project Plan and  
Requirements.
- bidirectional traceability among the requirements and  
the project plans(SP 1.4-2 Maintain Bidirectional Traceability of  
Requirements. CMMI )

# Project Plan(contd.)

ID	Critical	Status	Task Name	% Work Complete	Baseline Duration	Baseline Start	Baseline Finish	Actual Start	Actual Finish	Predecessors	Resource Initials
1	Yes	Late	EFL - MOSS 2010 Implementation	21%	88 days?	Tue 10/16/12	Fri 2/22/13	Tue 10/16/12	NA		
2	No	Late	Initiation	55%	18 days	Tue 10/16/12	Tue 11/13/12	Tue 10/16/12	NA		
3	No	Complete	Project Kickoff Meeting	100%	1 day	Tue 10/16/12	Tue 10/16/12	Tue 10/16/12	Tue 10/16/12		SL PM
4	No	Complete	Deliverable: Phase 1 - Project Schedule	100%	1 day	Wed 10/17/12	Wed 10/17/12	Wed 10/17/12	Wed 10/17/12	3	SL PM
5	No	Complete	Review of Phase 1 - Project Schedule (EFL Project Team)	100%	1 day	Mon 11/5/12	Mon 11/5/12	Mon 11/5/12	Mon 11/5/12	4	SL PM,EFL PTeam
6	No	Complete	Sign Off : Phase 1 - Project Schedule (EFL Project Team)	100%	1 day	Tue 11/6/12	Tue 11/6/12	Tue 11/6/12	Tue 11/6/12	5	EFL PTeam,SL PM
7	No	Late	Deliverable: Phase 2 - Project Schedule	80%	2 days	Wed 11/7/12	Thu 11/8/12	Wed 11/7/12	NA	6	SL PM
8	No	Late	Review of Phase 2 - Project Schedule (EFL Project Team)	0%	1 day	Mon 11/12/12	Mon 11/12/12	NA	NA	7	SL PM,EFL PTeam
9	No	Late	Sign Off : Phase 2 - Project Schedule (EFL Project Team)	0%	1 day	Tue 11/13/12	Tue 11/13/12	NA	NA	8	EFL PTeam,SL PM
10	No	Late	MOSS Farm Configuration	31%	27 days	Wed 10/17/12	Thu 11/29/12	Wed 10/17/12	NA		
11	No	Complete	SL Dev Environment & Farm Configuration	100%	5 days	Mon 10/22/12	Tue 10/30/12	Mon 10/22/12	Tue 10/30/12		
12	No	Complete	Validating Windows Server environment & Role Setup	100%	0.5 days	Mon 10/22/12	Mon 10/22/12	Mon 10/22/12	Mon 10/22/12	4FS+2 days	SL TL,SL Dev1
13	No	Complete	SQL Server Configuration (patches, Surface Area Conf., Reporting Services & etc)	100%	0.5 days	Mon 10/22/12	Mon 10/22/12	Mon 10/22/12	Mon 10/22/12	12	SL TL,SL Dev1
14	No	Complete	MOSS Installation and Configuration	100%	2 days	Tue 10/23/12	Wed 10/24/12	Tue 10/23/12	Wed 10/24/12	13	SL TL,SL Dev1
15	No	Complete	K2 Installation and Configuration	100%	2 days	Thu 10/25/12	Tue 10/30/12	Thu 10/25/12	Tue 10/30/12	14	SL TL,SL Dev1
16	No	Late	Deliverable (EFL Project Team): K2 License	0%	1 day	Wed 10/17/12	Wed 10/17/12	NA	NA	3	EFL PTeam
17	No	Late	EFL Dev Environment & Farm Configuration	0%	5 days	Wed 10/31/12	Tue 11/6/12	NA	NA	11,16	
18	No	Late	Validating Windows Server environment & Role Setup	0%	0.5 days	Wed 10/31/12	Wed 10/31/12	NA	NA	11,16	SL TL,SL Dev1
19	No	Late	SQL Server Configuration (patches, Surface Area Conf., Reporting Services & etc)	0%	0.5 days	Wed 10/31/12	Wed 10/31/12	NA	NA	18	SL TL,SL Dev1
20	No	Late	MOSS Installation and Configuration	0%	2 days	Thu 11/1/12	Fri 11/2/12	NA	NA	19	SL TL,SL Dev1
21	No	Late	K2 Installation and Configuration	0%	2 days	Mon 11/5/12	Tue 11/6/12	NA	NA	20	SL TL,SL Dev1
22	No	Late	EFL Prod Environment & Farm Configuration	0%	5 days	Wed 11/7/12	Wed 11/14/12	NA	NA	17,16	
23	No	Late	Validating Windows Server environment & Role Setup	0%	0.5 days	Wed 11/7/12	Wed 11/7/12	NA	NA	17,16	SL TL,SL Dev1
24	No	Late	SQL Server Configuration (patches, Surface Area Conf., Reporting Services & etc)	0%	0.5 days	Wed 11/7/12	Wed 11/7/12	NA	NA	23	SL TL,SL Dev1
25	No	Late	MOSS Installation and Configuration	0%	2 days	Thu 11/8/12	Mon 11/12/12	NA	NA	24	SL TL,SL Dev1
26	No	Late	K2 Installation and Configuration	0%	2 days	Tue 11/13/12	Wed 11/14/12	NA	NA	25	SL TL,SL Dev1
27	No	Late	Deliverable: SDP (Farm Configuration Guide & Infrastructure implementation document)	70%	18 days	Fri 10/19/12	Fri 11/16/12	Fri 10/19/12	NA	11FF,17FF,22FF+2 days	SL TL,SL Dev1
28	No	Late	Review: SDP (Farm Configuration Guide & Infrastructure implementation document) - (EFL Operations Team)	0%	3 days	Mon 11/19/12	Wed 11/21/12	NA	NA	27	EFL PTeam,SL TL,SL Dev1,EFL TTeam
29	No	Late	Deliverable: SDP - Amendments (Farm Configuration Guide & Infrastructure implementation document)	0%	2 days	Thu 11/22/12	Fri 11/23/12	NA	NA	28	SL TL,SL Dev1
30	No	Late	Sign Off: Farm Configuration Guide & Infrastructure implementation document (EFL Operations Team)	0%	2 days	Wed 11/28/12	Thu 11/29/12	NA	NA	29	EFL PTeam
31	No	On Schedule	Milestone: Farm Configuration Completed	0%	0 days	Thu 11/29/12	Thu 11/29/12	NA	NA	30,11,17,22	
32	No	Late	Requirement Elicitation, Workflow Finalization, Branding & Prototyping	75%	36 days	Thu 10/18/12	Thu 12/13/12	Thu 10/18/12	NA		
33	No	Complete	Phase 1	75%	36 days	Thu 10/18/12	Thu 12/13/12	Thu 10/18/12	NA		
34	No	Complete	Travel	100%	3 days	Mon 10/22/12	Wed 10/24/12	Mon 10/22/12	Wed 10/24/12		
35	No	Complete	Travel - SL pre discussion preparation (Screen flow and Workflow Creation)	100%	1 day	Mon 10/22/12	Mon 10/22/12	Mon 10/22/12	Mon 10/22/12	4FS+2 days	SL BA
36	No	Complete	Discussion: Travel - Request for Travel Booking	100%	0.5 days	Wed 10/24/12	Wed 10/24/12	Wed 10/24/12	Wed 10/24/12	35,39	EFL BTeam,EFL PTeam,SL
37	No	Complete	Discussion: Travel - Road Travel	100%	0.5 days	Wed 10/24/12	Wed 10/24/12	Wed 10/24/12	Wed 10/24/12	36	EFL BTeam,EFL PTeam,SL
38	No	Complete	Expense	100%	9 days	Tue 10/23/12	Tue 11/6/12	Tue 10/23/12	Tue 11/6/12		
39	No	Complete	Expense - EFL discussion preparation	100%	1 day	Tue 10/23/12	Tue 10/23/12	Tue 10/23/12	Tue 10/23/12	4FS+2 days	SL BA

# Roles and Actions

In fig the **Roles and Actions** has been defined:

- The flow of the process.
- Users and their Roles in process.
- Actions they can take in process.
- Requirements gathered and understand in meeting sessions with business user(REQM.SP 1.1 Understand Requirements).

## EFL – Business Process Automation and Reengineering Project

### 8.1.1 Roles / Actions

SharePoint Group / User	Available Tasks / Actions
Employee	An operational / active 'Active Directory' user. This will be initiator to submit ERF claims.
Approver	Approver will be selected on ERF form. Approvers for an ERF will be employees who have LOAM available for entered expenses and are owner(s) of selected Cost Centers/Asset Requisition(s) on that ERF. For each ERF, only one approver can be selected.
Finance	A SharePoint group with name Finance having Engro Foods employees for processing request.

# Activity of Workflow



- The figure contains the **Activity of the work flow**.
- The actions can be performed by Actors.
- It was designed from AS-IS process and consultation with stakeholder.\
- Requirement is understand in different sessions with stakeholder (REQM.SP 1.1 Understand Requirements).

## 8.1.2 Functional Steps

Sr. No.	Activity	Actor(s)	Description	Status after Completion	Notifications
1	Employee	Initiator	Requestor will raise the Expense Claim request by providing the information on a screen dedicated for this process	Open	To selected Approver
2	Approver Approval	Selected Approver	Request will then be reviewed by selected Approver for approval.	Open	To Finance
3	Approver Reject	Selected Approver	If requested is rejected by selected Approver than request will be again available for initiator. Re-submission will send	Open	To initiator

# Activity Workflow (contd.)



			the request back to Approver		
4	Finance SAP Accounting Entries	Finance	After approved by Approver, Finance will verify the request and will create Accounting entries.	Close	To initiator
5	Finance Reject	Finance	If Finance Reject the request with comments, it will go back to requestor.	Open	To initiator



## 8.1.3 Design

This section elaborates screen level details for Expense Request Form. Screens will be developed as ASP.Net Application page in SharePoint. Screen mocks are intended to depict the functionality and should not be considered as final layout structure. Front-end screen design will be based on branding of web portal.

### a. Initiator – Submit for Approval

For initiating a request for 'ERF', user will select the screen ERF Request from portal navigation; only authorized users can view the menu item. Following screen will open as shown below on navigation. User will provide the details and '**Submit**' the request:

- The above figure contains the Design required for UI of the process:

# Example Project



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Basic Information

Employee No: 004  
Designation: Software Developer  
Request No:   
Sub Total: 11900

Employee Name: Syrus Raza  
Department:   
Date Submit: 13/12/2012  
Advance Adjustment: 0  
Net Payable/Receivable: 11900

Expense Type: Mobile  
Charge Account: 0000110102  
Expense Sub Total: 6900

Charge To: ☐ Cost Center ☒ A/R  
Cost Center: GBU(Global Buss.U)  
A/R:

Date Incurred	Explanation	Amount	Edit	Delete
12/5/2012 12:00:00 AM	Moblink	2000	Edit	Delete
12/13/2012 12:00:00 AM	Ward	2400	Edit	Delete
12/8/2012 12:00:00 AM	Zong	1000	Edit	Delete
12/16/2012 12:00:00 AM	Telenor	1500	Edit	Delete
Insert				

Expense Type: Telephone  
Charge Account:   
Expense Sub Total: 5000

Charge To: ☐ Cost Center ☒ A/R  
Cost Center:   
A/R: 1 Laser Jet printer

Date Incurred	Explanation	Amount	Edit	Delete
12/2/2012 12:00:00 AM	PTCL	3000	Edit	Delete
12/9/2012 12:00:00 AM	PTCL 1	1400	Edit	Delete
12/8/2012 12:00:00 AM	PTCL 2	600	Edit	Delete
Insert				

Add New Item

Approver: Fahad Abdullah  Submit

- Form fields taken from the AS-IS process.
- Finalized after the consultation of business user.
- Mock is first approved from business user.
- The UI Mock is finalized in requirement gathering session.

(REQM.SP 1.1 Understand Requirements)



# Example Project

The UI prototype and the fields containing on the form.

- Taken from the paper form which employee used to fill.
- Few fields can be added on the request of business user.
- The understanding of requirements is done in requirement gathering sessions with stakeholder. (REQM.SP 1.1 Understand Requirements)

Following are the detailed set of fields of screen:

Fields	Field Type	Description
Basic Information	Group	This section contains the basic information required for request initiation.
Request#	Auto	Auto-generate number after submission of request. It can be used for tracking of requests. ERF will be appended as prefix with request#. E.g.ERF00121 This will be generated when request is submitted.
Request Date	Auto Date	Auto-generate date after submission of request. It will be the date of submission.
Employee Name	Auto	Plain Text for viewing Employee Name. This will be logged in user information.
Employee Code	Auto	Plain Text for viewing Employee Code. This will be logged in user information.
Expense Category	Dropdown	Dropdown menu to select Expense Category.

		enable when charge to A/R is selected. List of A/R will be populated from SAP. Dropdown will show Code and Name of A/R
Expense Type	Tree control (Mandatory)	Tree view control for providing expense type (to hit LOAM).
+ / -	Button	Button is used to add or delete row from the grid.
Expense Date	Date	Date picker for providing date of expense.
Description	Plain Text	Plain Text for providing Expense description.
Amount	Plain Text	Plain Text for providing Expense Amount
Add new Expense Detail	Button	This button will add Expense Detail repeater again on form.
Approver	Employee Search control	Employee search control to select Approver of ERF. Authorized Approver for entered ERF can be selected by entering P No/email address of Approver. Wild card search will also be available to lookup all available approvers. This will be last item to be selected on ERF. If user enters any new expense line/expense detail on form after selecting approver, form will clear out the selection.
Save	Button	Button for Saving requests.
Save & Submit	Button	Button for submitting requests.
Cancel	Button	Button for closing screen.



# Example Project



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## Screen Conditions:

- Request # and Request Date will be generated after submission of request. Request# will contain ERF as prefix which will be followed by 5 digit code. E.g. <ERF00001>.
  - Employee Code and Name will contain logged in user information.
  - Expense Total will display Total Amount(sum of all sub-totals on form) of expense
  - Advance adjustment is editable field. In case of user has taken any advances for claiming expenses, they will enter the amount taken as advance in this input field.
  - Net Amount will display the difference of Expense Total and Advance Adjustment.
- 
- The mandatory fields required.
  - Other conditions eg date, net amount etc.
  - These are gathered with the consultation of architect and business user.



# Example Project

## Change Request Management:

- Business user requested for changes in the delivered system
- Change request document was created for management

## Sections in CRF:

- Basic Information(Work order Number,Change Request Form Number, Raised By (Client Name), Description, Date , Priority
- Detailed Description of Change
- Impacts on project/ other phase
- Comments

## Important Things in Form

- Detailed Description of the requirement
- Impacts on other phase, can be delayed in other phase of the project
- Estimated time to complete

**CMMI Requirement Management Specific Process (SP 1.3-1 Manage Requirements Changes) is used.**

# Example Project (contd.)

### Change Request Form

**Back Information**

WO No:	WO-201301-01	Work Order Description: Various enhancements in Phase 1.1 functionalities
CR No:	01	Change Request: Various enhancements in Phase 1.1 functionalities
Raised By:	DPL	<div style="display: flex; justify-content: space-between;"> <div>Date Raised: January 2015</div> <div>Priority: Medium</div> </div>

**Detailed Description of Change**

As per signed off solution design document for phase 1.1 only requirements mentioned in the document are considered as in scope. Any requirement other than those will be considered as change and will go through the change management process.

Following new requirements are identified during training and hence declared as out of scope

- **Finance Task Forms – ERP, MRP And FSS**  
 Following fields will be added or displayed on Finance Task Form on ERP, MRP and FSS.
  - o Document Number (Mandatory)
  - o Document Date (Mandatory)
  - o Sales Tax Code – max length 2 char – default value CG (Mandatory)
  - o Withholding Tax Code – max length 2 char – default value S1 (Mandatory)
  - o Cheque Issue Date (Mandatory)
  - o Cheque Number (Mandatory)
  - o Document Receiving Date (Mandatory)
- **My Loan**  
 Export to Excel button will be removed from LOAM Search screen. My LOAM will be changed to Export to Excel functionality where Excel file will be exported with LOAM of logged in user. (Excel report was already part of scope. Change is only in report type. This change will impact any effort already invested on LOAM search report.)
- **Request Forms**  
 Employee Information section will position at bottom of all screens instead of top. Title will be changed to Requested By.
- **Announcement**
  - o Who has approved section – Announcement Forms  
 Selected Approvers who already approved the request should be displayed with tick mark.
  - o Announcement – Preview Draft

- **Request Travel Booking**
  1. A check box should be made available to indicate round-trip. In case of round trip provide flight timings for return flight or copy row functionality to be added in the grid.
  2. Add three separate Cancel buttons for Travel Agents, Car Booking and Hotel Cancellations.
  3. Copy all emails to Admin group which are being sent to Travel Agents.

Impact Matrix	
Component Impacted	Comments
Phase 1.1	Phase 1.1 is delivered without tested items. CR will be completed with their due Dev and QA cycles before shipment.
Phase 1.2	CR may impact timeline for phase 1.2 deliverables depending on authorized start date
Phase 2	Impact in Phase 1.2 may impact release 2 timelines.
Total Cost	
Total Estimated Time	80 hours

**Comments**

Client Project Manager

System Analyst / Project Manager

**Approvals**

Client Decision

Authorized Start Date

Completion Date

Approval Process & Payment Terms

- 50% of the total cost will be involved at the signing off the Change Request
- 50% of the total cost will be involved at the shipment to IP.

Excel Files Private Location

Screen Location

Signature

Signature

# References

- [https://en.wikipedia.org/wiki/File:Characteristics\\_of\\_Capability\\_Maturity\\_Model.svg](https://en.wikipedia.org/wiki/File:Characteristics_of_Capability_Maturity_Model.svg)
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