
COMET Data Collection System Agile Development

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Current Employment Statistics

FedCASIC 2013

Current Employment Statistics (CES) Survey

- Monthly survey of establishments
- The survey provides employment, hours, and earnings estimates based on payroll records of business establishments.
- Employment Situation News Release

CES Facts

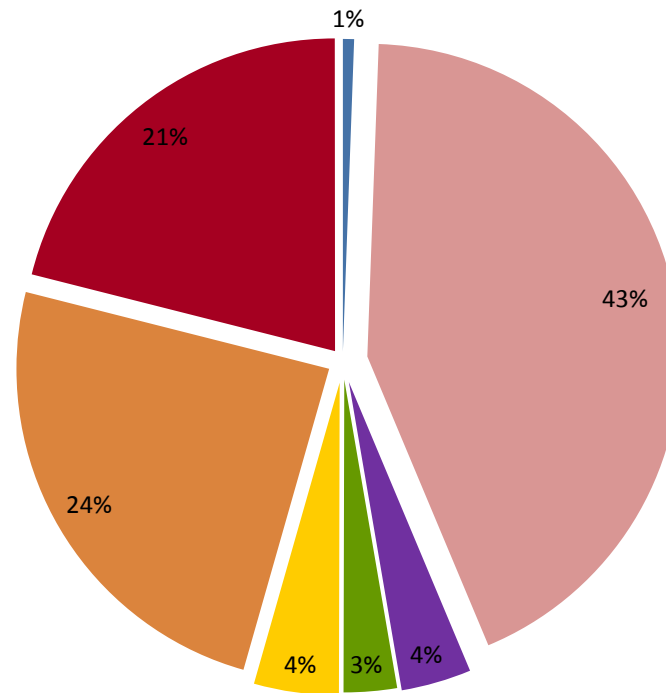
- Oldest Fed/State survey in the country
 - ▶ 1949: signed cooperative agreements with all 48 states and D.C.
- Largest multi-modal survey
 - ▶ Sample of ~ 145,000 (n) business and government agencies
 - ▶ 557,000 individual worksites

Collection Modes

- CES uses multiple collection modes in order to reduce respondent burden
 - ▶ **EDI (Electronic Data Interchange)**
 - ▶ CATI (Computer Assisted Telephone Interview)
 - ▶ TDE (Touch-tone Data Entry)
 - ▶ Mail/Fax
 - ▶ Web
 - ▶ Special Arrangement

CES Sample by Collection Mode

Reports Collected



- Mail
- EDI
- TDE
- Transcript
- Fax
- Web
- CATI

Electronic Data Interchange (EDI)

- **EDI: Electronic transfer of information from machine to machine.**
 - ▶ Chicago **EDI** Center
 - ▶ Reserved for larger firms
- Advantages
 - ▶ Low monthly costs
 - ▶ Reduce respondent burden
- Disadvantage
 - ▶ **The raw data comes in a format that cannot initially be used in estimation.**
 - ▶ Large start-up cost

COMET EDI Tool

- COMET (Collection of Monthly Employment Totals) is a web-based system developed by the Division of Federal/State Monthly Surveys (FSMS), Office of Technology and Survey Processing (OTSP).
- The system is used by the CES EDI personnel to process raw payroll data submitted electronically by national, multi-unit firms (The raw EDI data is not submitted in a format that can initially be used in CES estimations).
- The COMET system allows for raw data to be imported into the system, aggregated to individual units within a firm, edited and screened for errors, and then transmitted for use by CES analysts.

Agile Development Pilot

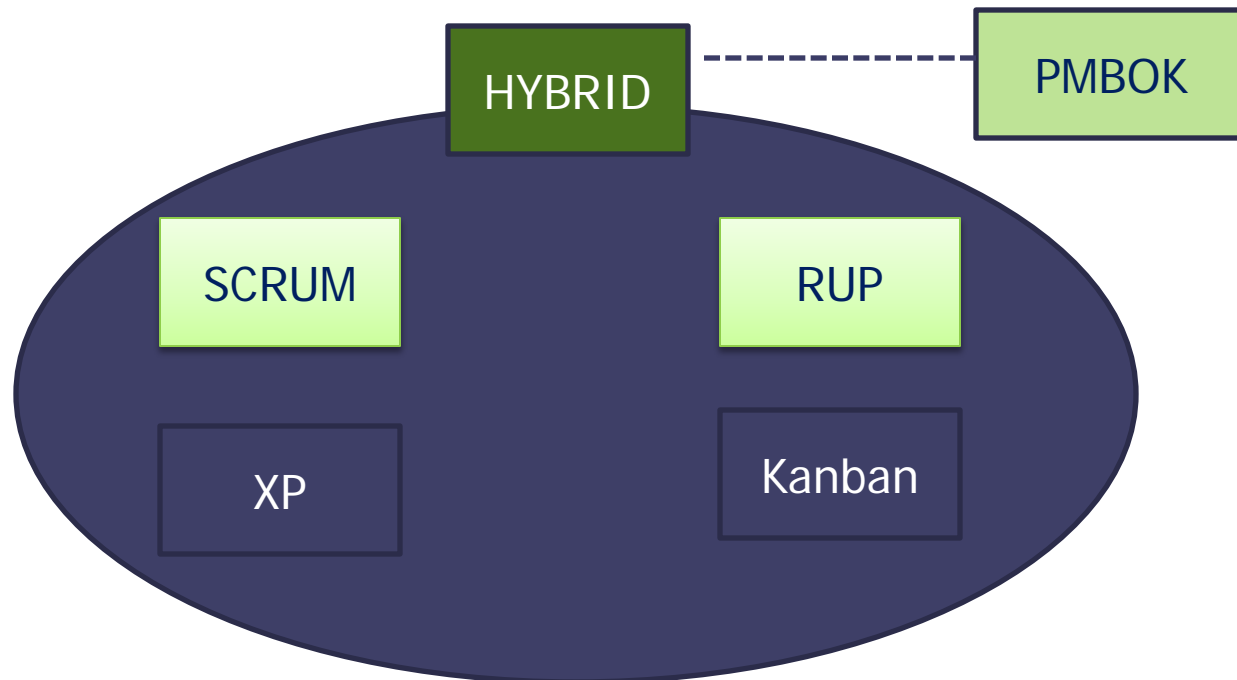
COMET project was selected for the following reasons:

- ▶ Re-engineering mitigates one of the significant risks in using outdated FoxPro technology
- ▶ Edison system was having issues and wanted to finish re-engineering by the end of FY 2012
- ▶ SME available on board, who coded the original Edison system
- ▶ **Project will allow to try out agile principles in all phases of the SDLC**

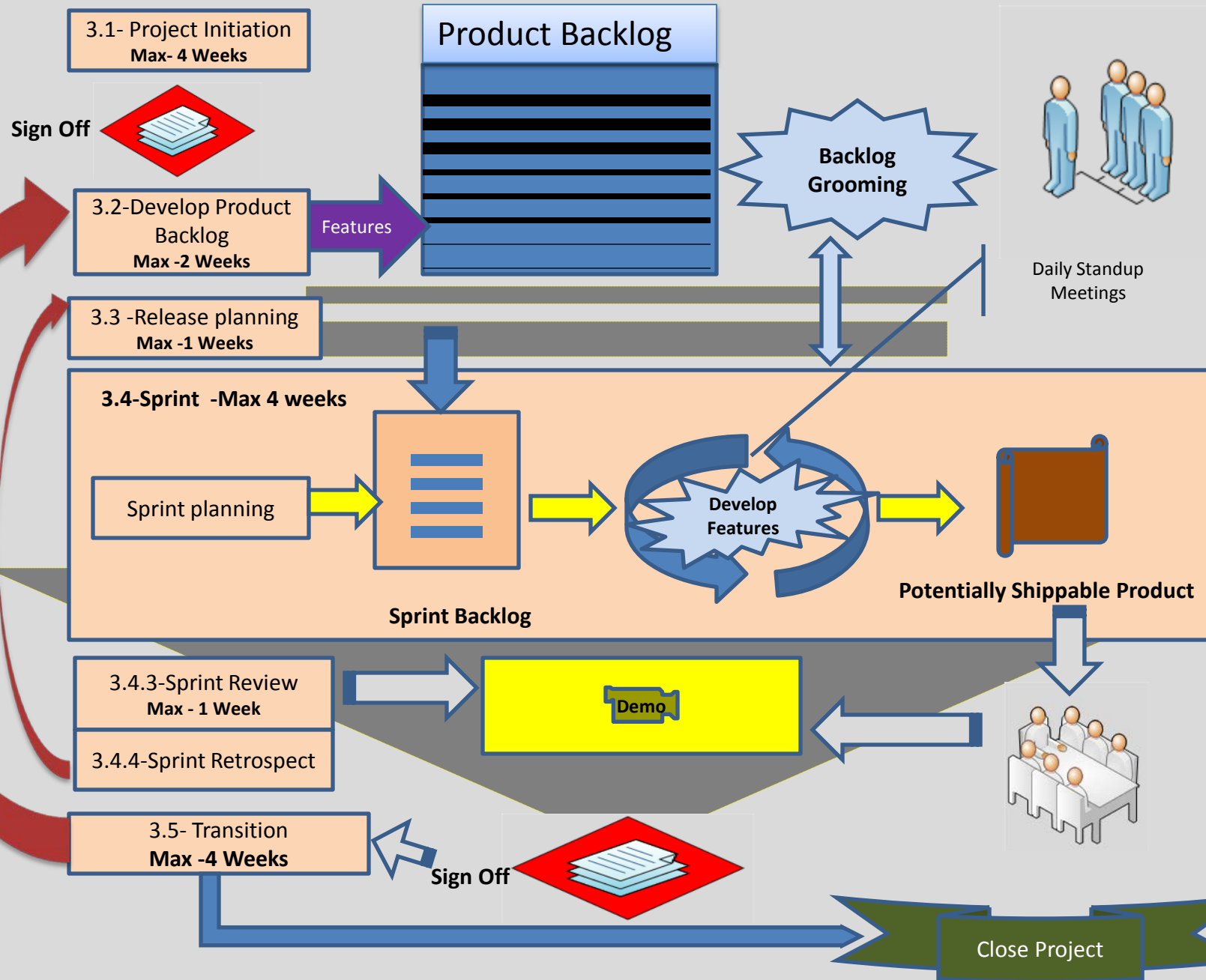
COMET Agile Hybrid Process

- Hybrid Agile Process

FSMS followed hybrid methodology combining Scrum, XP, Kanban and best practices from RUP as well as PMBOK.



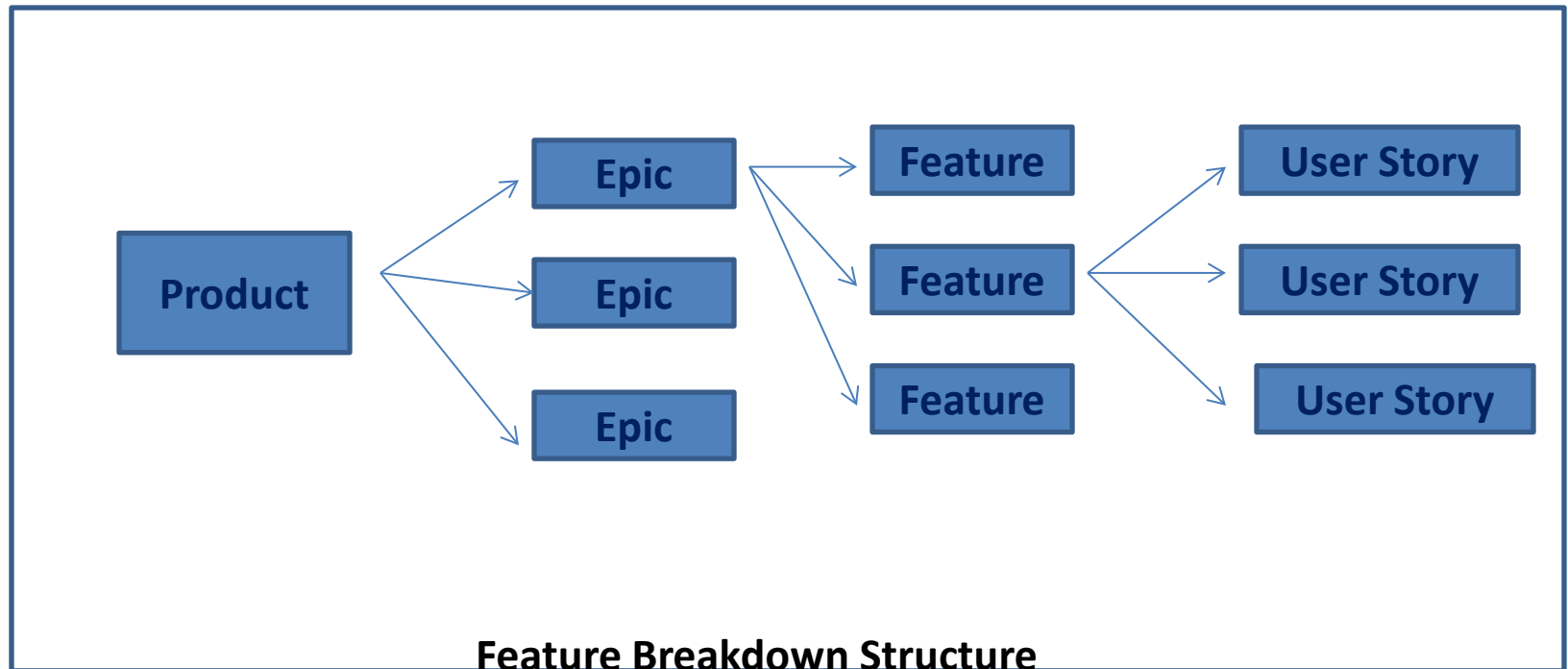
Tailored Agile Methodology used in COMET Development



Agile Product Backlog

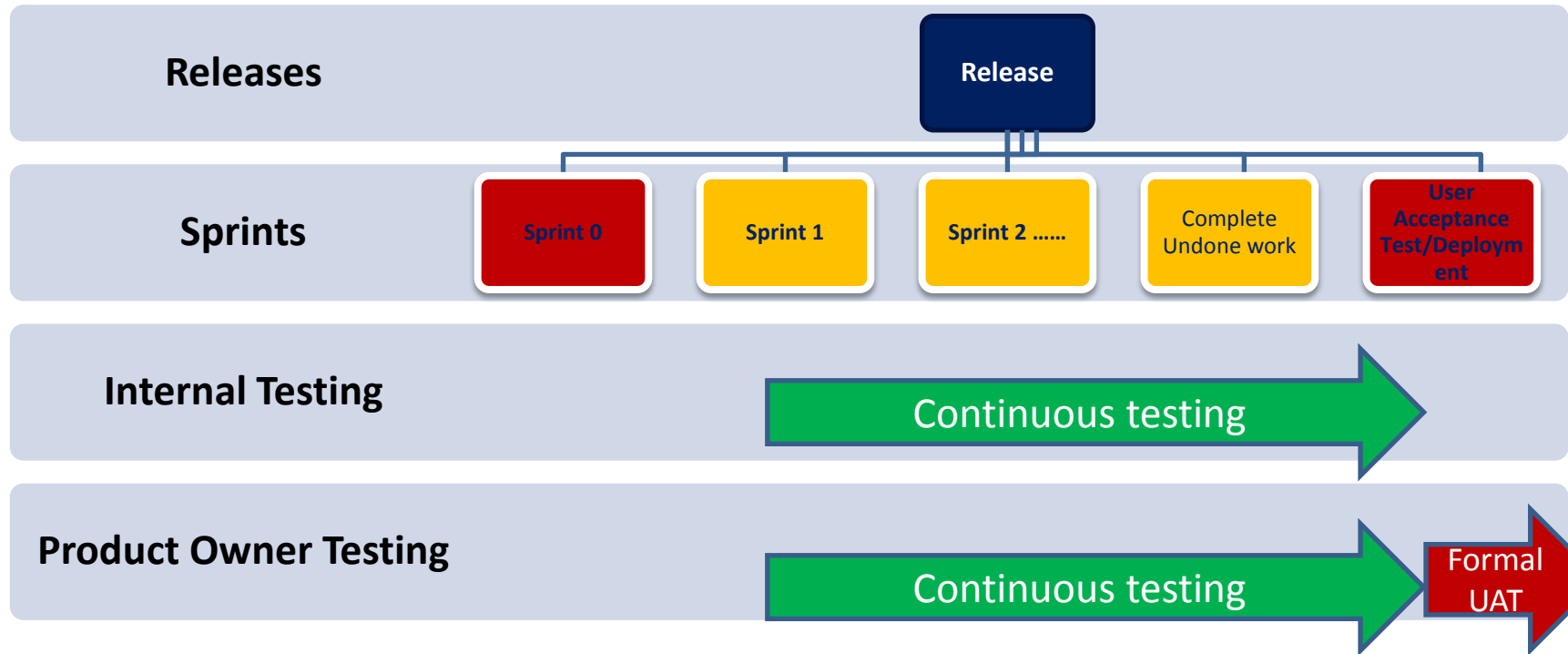
■ Product Backlog Elements

- The COMET team took one week to develop product backlog and to perform release planning.
- User story is used as a basis to discuss and further develop the story during the Sprint.



Testing in Agile Projects

Agile testing is performed throughout the development, even before code is written by way of automated test driven development.



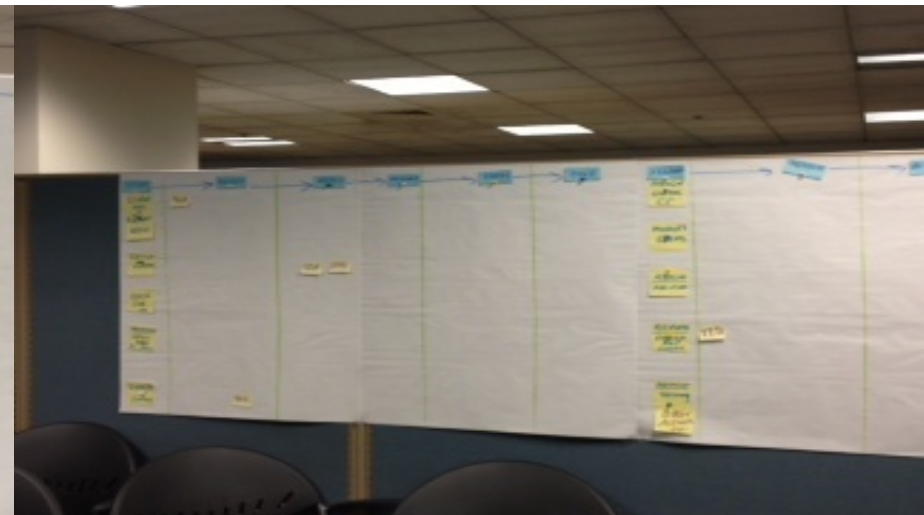
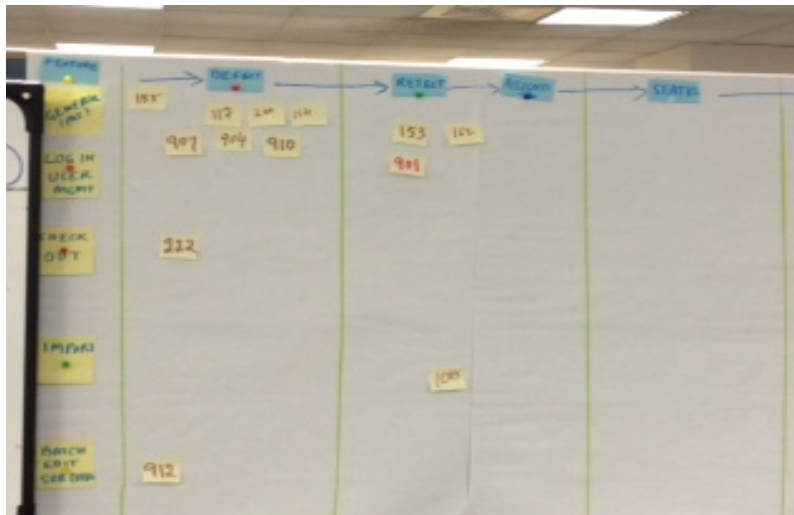
Visualizing Defects

Defect/Change List

Contains both internal and external lists

New Actions Settings

Test Type	Tester	Defect #	Title	Description/Test case	Steps	Expected Result	Actual Result	Final Status	Date Entered	Product ID	Sprint #	Date Assigned	Assigned To	Date Closed	Resolution	Notification Status
System Testing	FSMS	3	Add Firm not adding Firm name to Firms available for Check-out	A firm added through the Add Firm functionality should be displayed on the list of firms available for Check-out list.		The firm is available for checking out.	The firm is not being displayed on the Available Firms display.	Passed	5/7/2012	2.20, 1.10	1	5/7/2012	Amit			Notify - Closed
System Testing	FSMS	4	Check-out: disable the other selection options when one is chosen			firm.	display the Checked out firm.	Passed	5/7/2012		1	5/7/2012	Ganesh			Notify - Closed



COMET Development Dashboard Using SharePoint

Shared Documents - Comet Dashboard Final - Windows Internet Explorer provided by Bureau of Labor Statistics

http://oeus.sp.bls.gov/FSMS/projects/edison/COMET/Shared%20Documents/Comet%20Dashboard%20Final.aspx

Shared Documents - Comet Dashboard Final

FSMS Main Portal > Projects > CES Agile COMET > COMET > Shared Documents > Comet Dashboard Final

Comet Dashboard

Project Status: ■ On Track

COMET Core Functionality Progress

0% 50% 100%

Release Schedule

Sprint #	Description	Start Date	Completion Date	Status / % Complete
	Project Kick Off	2/21/2012	2/21/2012	Done
	Develop Product Backlog	2/21/2012	2/27/2012	Done
	Train the team on change in the methodology	2/21/2012	2/27/2012	Done
0	Train the team in Scrum procedures and determine velocity	2/29/2012	3/21/2012	100%
	Sprint Review -Sprint Retrospect	3/22/2012	3/28/2012	100%
1	Complete and demo chosen feature(s) - Check in/Check out firm	3/29/2012	4/19/2012	100%
	Sprint Review -Sprint Retrospect	4/20/2012	4/26/2012	100%
2	Complete and demo chosen feature(s) - example develop import module	4/27/2012	5/18/2012	100%
	Sprint Review -Sprint Retrospect	5/21/2012	5/25/2012	100%
3	Complete and demo chosen feature(s) - example define CES Reporter module	5/29/2012	6/19/2012	100%
	Sprint Review -Sprint Retrospect	6/20/2012	6/26/2012	100%
4	Complete and demo chosen feature(s) - example develop	6/27/2012	7/19/2012	

Sprint Burndown Chart

Sprint (4) Burndown Chart

Sprint Size Remaining

Day in Sprint (out of 15)

Deliverables

- FSMS Proposal for Agile Comet_Version1-0
- Product Backlog
- Risk List
- Use Cases
- FSMS/CHI Agile Team Discussion Board
- Comet Data Model
- Weekly FSMS Status Report
- Project Plan on FSMS Dashboard
- COMET Vision and Scope
- COMET User Acceptance Test site
- FSMS Weekly Status Reports
- Backlog Priority and Story Points Scale
- Lessons Learned
- Test Results
- COMET Software Architecture Document
- Defect List
- Add new link



COMET Agile Development Timeline

■ Timeline

- Start - February 21, 2012
- Development Completion – September 28, 2012
- 7 Sprints including Sprint 0 (3 week sprints followed by 1 week review)

■ Production Rollout

- Parallel Production
 - Both Edison and COMET were used by Edi center to check results from real data
 - Month of October
- Partial Production
 - Edi center used COMET for a portion of firms
 - November/December
- Full Production
 - Edi center is using COMET for full production
 - December / January

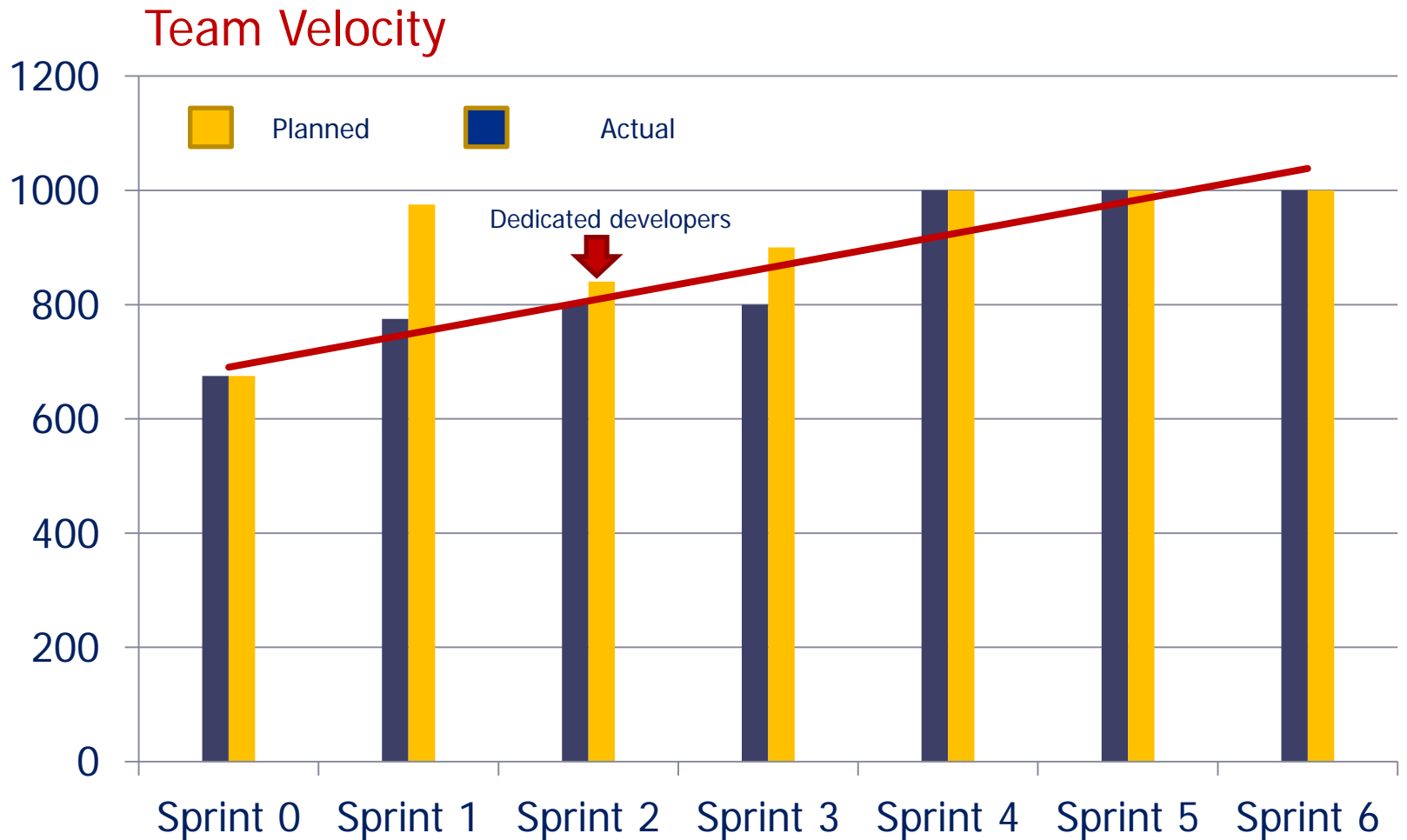
COMET Architecture

- **Service Oriented Architecture (SOA)**
 - Login Web Service: SOA is leveraged in creating this web service with the intent to increase code reuse across heterogeneous application platforms.
- **Common Objects**
 - Implementation details are discussed on a daily basis to promote the use of common objects that can be shared across developers. Most of the common functions like database connectivity are coded as common modules for reuse.
- **Audit**
 - COMET has extensive audit feature that logs all changes to the data at a field level.

COMET Agile Development Deliverables

- COMET Deliverables
 - ✓ Product Backlog
 - ✓ Sprint Backlog
 - ✓ Burn Down Charts
 - ✓ Vision and Scope Document
 - ✓ Use Cases
 - ✓ Software Architecture Document
 - ✓ Risk List
 - ✓ Demo Each Sprint
 - ✓ SW Deployed for Chicago Feedback Each Sprint
 - ✓ **Status Reports**
 - ✓ **Migration List (Deployment Plan)**
 - ✓ **Defect List**
 - ✓ **Lessons Learned**
 - ✓ **Agile Methodology Document for DSP**

COMET Agile Development Team Velocity



COMET Agile Development Results

- Number of Issues Reported To Date
 - Major Show Stoppers : **0**
 - Bugs that affect the entire system and make it unusable
 - Major: **0**
 - Bugs that affect a module and makes the module unusable
 - Minor: **Less than 12**
 - Bugs that affect a small portion of the system but do not disrupt usage of a feature/module

COMET Agile Development Results

- Customer Feedback
 - CES Program Office is very pleased with the results
 - EDI Center product owners really appreciate the ability to give input during development and pleased with the results
 - L3 users who got to use the system initially were concerned about training needs, but after 1 training session, quickly accepted the new system. (faster than expected)

COMET Look and Feel

The screenshot shows the COMET web application interface. At the top left is the logo for the Bureau of Labor Statistics, featuring a stylized star and the text "BUREAU OF LABOR STATISTICS". To the right of the logo, the word "COMET" is displayed in large, bold, black letters. In the top right corner, the user is logged in as "kuppa_m@bls.gov" with a "Log Out" link, and the active firm is listed as "No Firm Active".

Below the header is a navigation menu with the following items: "Home", "Data Processing" (highlighted in blue), "Export", "Reports", "Admin", and "Help". On the far right of the navigation menu are links for "Check Out" and "Check In".

The main content area is divided into two columns. The left column contains two sections: "Process Data" and "Modify Data".

- Process Data**
 - [Import Data](#)
 - [Batch Edit Subdata](#)
 - [Aggregate Subdata](#)
 - [Batch Edit CES Data](#)
- Modify Data**
 - [Define CES IDs](#)
 - [Exchange CES IDs](#)
 - [Edit & Screening](#)
 - [Modify Firm](#)

The right column is titled "Import Data" and contains a form for selecting a file to import. The form includes a text input field, a "Browse..." button, and two buttons at the bottom: "Validate" and "Clear".





Contact Information

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