A Hybrid Approach to the Use of Agile in Health IT

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Conflict of Interest

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Has no real or apparent conflicts of interest to report.
Agenda

• Introduction to University of Utah Health IT delivery process
• Overview of Agile
• Overview of Scrum process, roles, meetings, artifacts
• Agile as incorporated into a hybrid delivery process
• Example clinical project delivered using Scrum
• Role of project managers in our hybrid Program Management Office (PgMO)
Learning Objectives

• Discuss the key components of Agile and the Scrum framework

• Discuss ways in which Agile can be embedded into traditional Health IT delivery and benefits realized in doing so

• Describe the role and functions of the Project Management Office and project managers in traditional, Agile and hybrid Health IT delivery
Our Health Organization

University of Utah Health

• Only academic medical health care system in Mountain-West region
• Provides care for Utahns and residents of 5 surrounding states

• 1,400+ board-certified physicians
• 5,000+ health care professionals
• 744 staffed beds
• 4 hospitals
• 12 community clinics
University of Utah Health

4 hospitals
12 community clinics

Chief Medical Information Officer
Chief Operating Officer
Chief Information Officer
Director

Information Technology Services

10 Project Managers

PgMO
Program Management Office

6 PMs
Where We Fit in Health IT

University of Utah Health

Program Management Office (PgMO) established 2008

- Standardized Project Management (PM) Methodology
- Standardized PM tools and processes
- Established IT portfolio governance
- Aligned with clinical and business operations
PgMO Delivery of Health IT

• Project work in IT
  – Predictive

• Traditional Methodology – “Waterfall”
  – Project Management Institute (PMI) Process Groups

• Proven industry standard, works well for most infrastructure and clinical projects
Process Groups & Knowledge Areas

Initiating
- Integration Management
- Quality Management

Planning
- Scope Management
- Resource Management
- Procurement Management

Executing
- Schedule Management
- Communications Management
- Stakeholder Management

Monitoring & Controlling
- Cost Management
- Risk Management

Closing
U of U Health
IT Project Process Map
Core Challenges of Traditional Delivery

• Not all requirements can be planned upfront for some services. Customers are non-technical and don’t understand capabilities of EHR

• Changes in clinical requirements—“scope creep”

• Quick deployment turnaround required for patient care workflows and compliance audit findings

• Communication with customers and stakeholders
Introduction to Agile

- Formalized by industry thought leaders in 2001 (in Utah!)
- Agile is a set of values and principles

<table>
<thead>
<tr>
<th>Individuals and interactions</th>
<th>over Processes and tools</th>
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<tbody>
<tr>
<td>Working software</td>
<td>over Comprehensive documentation</td>
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<td>Customer collaboration</td>
<td>over Contract negotiation</td>
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<td>Responding to change</td>
<td>over Following a plan</td>
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A few agile principles:

- Customer satisfaction through continuous delivery in shorter timeframes is priority
- Changing requirements are welcomed
- Collaboration and communication with customers is integral and required
- Iterative, adaptive approaches to IT delivery are preferred

Several frameworks provide structure for agile:

- Scrum
- Kanban
- XP
- FDD
- Etc…
Introduction to Scrum

• Scrum is an Agile **framework**
  – Uses incremental, iterative approach to IT delivery
  – Structured and time-boxed using “sprints”

• Sprints follow basic PMI process in condensed iterations

• Scrum objective: deliver production-ready tasks, features, deliverables at sprint-end; gather feedback
Agile Projects Using Scrum

PROJECT TIMELINE

Iteration 1

Iteration 2

Iteration 3

Iteration 4

Iteration 5...

2-4 weeks
Product Owner

Provide requirements

Sprint Backlog

Product (Work) Backlog

Scrum Team

Scrum Master

Stakeholder

Project Manager

Stockholders

Provide requirements

Product (Work) Backlog

Sprint Backlog

Scrum Team

Facilitates Scrum process during each sprint.

Collects and prioritizes tasks in the Product (Work) Backlog.

Oversees project management and provides project status.

Executes design, build and test functions.

Pulls tasks from the Sprint Backlog during each sprint.

Provide requirements
Stakeholders provide requirements

**Product Owner** collects and prioritizes tasks in the Product (Work) Backlog

**Project Manager** oversees project management and provides project status

**Scrum Master** facilitates Scrum process during each sprint

**Scrum Team** pulls tasks from Sprint Backlog during each sprint. Executes design, build and test functions
Agile at U of U Health IT

• Projects and programs governed by capital budget / fiscal year cycles
• Some scoping / planning required upfront
• Governance committees approve and prioritize work
  – Budgets, procurement/purchasing regulations, deadlines dictated by facilities, upgrades, environment management
• Project managers are still needed
Agile at U of U Health IT

Categories of IT projects

1. Predictable / structured
   - Infrastructure, upgrades, vendor-driven implementations

2. Uncertain / need flexibility
   - App development, clinical “work packages”
   - Projects and work where it makes sense

3. Hybrid programs / projects
   - Parent program run waterfall with agile subprojects / teams
Communications Management
Procurement Management
Integration Management
Scope Management
Schedule Management
Cost Management
Quality Management
Resource Management
Communications Management
Risk Management
Procurement Management
Stakeholder Management

Planning
- Project Kick Off
- Submit RFC Project
- Define Work
- Create Backlog
- Refine Backlog
- Plan Sprint

Executing
- Agile Iterations
- 2 WEEK SPRINT
- Execute Sprint
- Testing QA Training
- Close Sprint
- Refine Backlog

Monitoring & Controlling
- Daily StandUp Meetings & QA
- Sprint Planning Meeting
- Backlog Retrospective Meeting
- Final Testing QA Meeting
- Sprint Review Meeting

Closing
- Deploy
- PPM TOOL Close Out
The Hybrid PMO at U of U Health

• Provides IT project managers for clinical, business, infrastructure, construction projects

• Provides standardization
  – Process/methodology, tools, templates, artifacts, training

• Plays integral role in
  – Governance, procurement activities, scope definition, reporting and executive dashboards

• Provides direction on project approach (waterfall, Agile, hybrid)
The Agile Project Manager at U of U Health

- Is accountable for sprint and project deliverables
- Monitors milestones
- Reports project status
- Tracks project resource time, billing, project financials
- Fills Agile roles (like Product Owner and others) as needed
- Interacts with clinical customers frequently
Clinical Provider Packaged Delivery
Example of Scrum at U of U Health

• “The Surge” - large backlog of enhancements to system workflows in EHR system, new modules, reports, etc.
• Identified “Provider Leads” by specialty area to play Product Owner roles – collected, prioritized and approved work items
• Divided EHR support teams into 2 larger scrum teams
• Project Manager / team members played scrum master
• 18 month duration
• Time-boxed each clinical specialty area into 2-4 months, sprints
Benefits Realized

- Selected the “right” work for specialty areas
- Received attention and availability of busy stakeholders because of sprint time-boxes / deadlines and scheduling coordination
- Increased energy within teams doing the work because of the enhanced customer interaction and collaboration
- Completed a significant amount of work
- CMIO went from having complaints to not have any
The Ripple Effect to Operations

• Web Development team and Service Management teams exclusively use scrum / agile now for most all work (project and operational)

• Other individual teams now organize non-project and other planned work using scrum, backlogs, sprints
  – Ambulatory team
  – Inpatient team
  – Cardiovascular team
  – IT Training team
  – Pharmacy team
Benefits of Scrum

• Scrum can work at team, department, organizational levels

• Scrum can be applied at the project or scaled to a program level

• Scrum can be applied in “hybrid” waterfall/agile projects or programs

• Promotes collaboration, adaptability, quick turnaround of deliverables
Strategies to Become Agile

• Agile and agile frameworks can be scalable

  – Implement a formal agile framework and associated cultural changes, through “agile transformation” at the team, department or organizational level

  – Incorporate agile frameworks and cultural components (or pieces of them) at the project or program level that make sense for the effort
References


Character use:

http://vectorcharacters.net/set/free-vector-business-characters
Questions

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Please remember to submit a session evaluation. THANK YOU!