Project Management at Cisco

An Agile Transformation Journey

Ben Rus
TIM 101 Seminar – Fall 2014

10/30/14
Ben Rus

berus@cisco.com

• Scrum Master – Cisco, 2009 – present
  ▪ Working with multiple scrum teams in Smart Services Portfolio
  ▪ Agile Transformation Lead for Cisco Services Technology Group
  ▪ Scrum Trainer/Coach

• B.S. Information Systems Management, UCSC, 2009
  ▪ Focus on Software Development and Network Administration
  ▪ Former Member of ISMA
Agenda

- About Cisco
- Cisco Services Technology Group
- Project Management
- Agile @ Cisco
- Project Management As A Career
- Q & A
Cisco
Past, Present and Future
Two Cables and a Desire to Connect
Intelligent Connections at the Heart of Cisco

Connectivity
Digitize Access to Information
- Email
- Web Browser
- Search

Networked Economy
Digitize Business Process
- E-commerce
- Digital Supply Chain
- Collaboration

Immersive Experiences
Digitize Interactions (Business & Social)
- Social
- Mobility
- Cloud
- Video

Internet of Everything
Digitize the World
Connecting:
- People
- Process
- Data
- Things
The Internet of Everything
FY13 Financials

Revenue: $48.6B, 6% Y-Y Growth

Cash on Hand: $47B+

Services Revenue: $10.6B

Product Revenue: $38B
Cisco’s R&D Commitment
We Build the Solutions You Need to Succeed

$5.9B in R&D spend
12% of FY13 revenue
17,000+ patents
170 labs around the world
28,000 engineers

IBM: 6 %*  Intel: 19%*  HP: 3%*

*Percent of FY13 Revenue

Build – Buy – Partner – Integrate

© 2013-2014 Cisco and/or its affiliates. All rights reserved.
culture
employees

...are our competitive advantage

- 17% other
- 39% engineering
- 20% services
- 24% sales

- 74K+ employees
- 165+ countries
- 380+ offices
Acquisitions: An Extension of Cisco’s Innovation Engine

Nearly 170 Across Architectures
Market Leadership Matters

No. 1
Routing
Edge/Core/Access
51%

No. 1
TelePresence
44%

No. 1
Wireless LAN
50%

No. 1
Switching
Modular/Fixed
66%

No. 1
Voice
35%

No. 1
Web Conferencing
41%

No. 2
x86 Blade Servers
26%

No. 2
Storage Area Networks
41%

No. 1
Security
32%

Q1CY14
Leading for Nearly 30 Years

Internet of Everything

The Landscape is Constantly Changing

1990 – 1995
1996 – 2000
2001 – 2007
2008 – Today
2015
Cisco Services Technology Group - CSTG
Cisco Services Technology Group (CSTG)

- Services generates over 20% of Cisco’s revenue
- CSTG is a primary Engineering arm within Services
- ~2000 people across:
  - 6 Major Sites: San Jose, Austin, RTP, Bangalore, Chennai, Pune
  - 4 Primary Functions: Engineering, Support, Operations, Leadership
- ~80 active projects
- 18 months into Agile Transformation Journey
- 18 open positions today: http://cs.co/CSTGjobs
Project Management
What is a Project?

• A project is defined as a temporary endeavor with a beginning and an end that is undertaken to create a unique product, service, or result.

• There are typically 3 main constraints for any given project
  - **Scope**: Refers to the work that needs to be accomplished to deliver a product, service, or result with the specified features and functions.
  - **Time**: Refers to the amount of time available to complete a project
  - **Resources**: Refers to the budgeted amount available for the project.

• Quality is often considered the 4th constraint

• **Note**: These constraints are typically referred to as the Project Management Triangle where each side represents a constraint. One constraint cannot be changed without affecting the others.
What is Project Management?

• Project management is a set of principles, practices, and techniques applied to drive projects from start to finish while coordinating the project's resources and controlling the risks and constraints.

• Two main methodologies:
  • Waterfall (Linear)
  • Agile (Iterative)

“The application of knowledge, skills, tools, and techniques to project activities to meet the project requirements.”

• Project Management Body of Knowledge (PMBOK) 4th Edition, Project Management Institute
Waterfall Process: Linear & Sequential

Source: Cisco Product Development Methodology (CPDM)
Typical Waterfall Roles (PM)

Project Manager

- Micro-Level Manager
- Responsible for managing and monitoring the day to day activities of project team from start to finish
- Accountable for success or failure of a project

Program Manager

- Macro-Level Manager
- Responsible for managing a collection of projects that form a program
- Set overall direction for teams and future projects they will work on

Product Manager

- Work with end users/customers to define detailed requirements
- Responsible for ensuring that the product meets the specifications
The Waterfall Process

- Plan Driven
- Fixed scope, variable resources and time
- Concept through Deployment phases can take years
- Any delays directly impact project schedule
- Minimal feedback loops
- Change is disruptive
- Slow learning

Source: Cisco Product Development Methodology (CPDM)
Example Waterfall Project

F35 Project Delayed By Software Problems

- $143 Billion over budget
- At least another year late
- The cost of the Navy's F35C grew from $273 million in 2014 to a wallet-busting $337 million by 2015.

Source: Jeff Sutherland: Disruptive Leadership with Scrum, 10/6/14 talk at Cisco
The Industry Today

- Only 35% of projects are successful – On time, on budget, with requested features
- 19% of projects are outright failures
- 64% of features are never even used by the customer

Time To Try Something Different!

Waterfall Process:
Linear & Sequential

Concept
Commit
Execute
Commit
General
Availability
End of Life (EOL)
Deployment
Maintenance

Agile (Iterative) Development Process

Conceptualization
Planning
Execution
Deployment
Validation
Development

Source: Cisco Product Development Methodology (CPDM)

© 2013-2014 Cisco and/or its affiliates. All rights reserved.
Agile (Iterative) Development Process

Incremental delivery in time-boxed iterations

Target System
Iteration Mechanics (Scrum)

- **Daily Meeting**
- **Planning**
- **Analysis**
- **Design**
- **Development**
- **Validation**
- **Deployment**
- **Feedback**

- **Iteration**
  - 2 Weeks

- **Product Backlog**
- **Iteration Backlog**

- **Product Increment**
Agile Manifesto Values

Individuals and Interactions over Processes and Tools
Working Product over Comprehensive Documentation
Customer Collaboration over Contract Negotiation
Responding to Change over Following a Plan

That is, while there is value in the items on the right, we value the items on the left more.

www.agilemanifesto.org
The Scrum Team

- Small teams: 5-9 people
- Collocated
- Cross functional
- Capable of delivering product increment in 2 weeks
- Self managed
Scrum Brings Two Key New Roles…

**Scrum Master:**
- Key facilitator for the team
- Removes impediments
- Supports values & practices
- Servant leader
- Not a decision maker

**Product Owner:**
- Defines, prioritizes and maintains the backlog
- Owns the product vision and roadmap
- Represents (or is) the customer/client
Managers no longer command and control → coach and empower
Team members share knowledge and collaborate to deliver results
Product Managers communicate with customers in different ways
Project Managers not needed
Program Managers coordinate multiple scrum teams across a product
The Waterfall Process

- Plan Driven
- Fixed scope, variable resources and time
- Concept through Deployment phases can take years
- Any delays directly impact project schedule
- Minimal feedback loops
- Change is disruptive
- Slow learning

The Agile Process

- Value driven
- Fixed time and resources, variable scope
- Short Cycles
- Eliminates waste
- Emphasis on frequent feedback
- Embraces change
- Inspect and adapt
Why Agile?

- Reduced time-to-market
- Increased quality
- Reduced waste
- Better predictability
- Better morale
- Higher productivity
- Enables competitive advantage
- Fuels innovation
World’s Best Stealth Fighter is not Made in America
Bill Sweetman, Aviation Week

- Saab JAS 39E Gripen
- All systems radically improved, cheaper than previous version
- Cost $43M (80% less than F35)
- Just won in Brazil, may beat F35 in Denmark
- Agile development using Scrum

Source: Jeff Sutherland: Disruptive Leadership with Scrum, 10/6/14 talk at Cisco
The tide is turning

- 69% of companies have at least one agile project

Dr. Dobb’s Journal, Scott Ambler Agile Adoption Survey, 2007
Scrum Is Mainstream

1 - 10 of 22,730 scrum jobs near San Jose, CA

Web Quality Assurance Analyst
MindSource - Sunnyvale, CA
MindSource is seeking a quality assurance analyst to test updates to Apple’s website and other interactive deliverables. Primary responsibilities include executing test plans,...
5 days ago from MindSource, Inc.

Scrum Master
Modis - Redwood City, CA
SCrum MASTER Location Redwood City OVERVIEW Reporting to the Business Lead, the Scrum ... education, execution, and communication. The Scrum Master is responsible for tracking and...
4 days ago from Dice

Scrum Master- Agile Coach(118785)
Philips - Foster City, CA
Scrum Master- Agile Coach (118785)Job Description Scrum Master- Agile Coach Scrum Master / ... one or more scrum teams as the scrum master, facilitating scrum ceremonies...
6 days ago from philips
Agile Transformation Journey @ Cisco
Typical Agile Transformation Journey

Year 1: Doing Agile

Year 2: Being Agile

Year 3: High Performing Teams

This is the hardest part:

• Organizational structures and constraints come into play
• Cultural and mindset changes are challenging
• High impact on business and operations
Sample CSTG Project: 2.5 Years into the Journey

The chart shows the operating cost and feature delivery for each quarter from May 2012 to November 2014. The operating cost and feature delivery are measured in millions of dollars. The chart indicates a decreasing trend in operating cost over time, with a peak of $1.9 million in May 2012 and a low of $0.6 million in November 2014. Feature delivery shows a consistent increase from May 2012 to November 2014, with a peak of 344 features in November 2014.
CSTG Results So Far

96%  
79 (Actual) vs (Target) 82  
Falcon Index Metrics

95%  
CSTG Teams  
Agile Onboarded

17  
Teams Quality  
Bronze  
Certificated

$8.1 Million USD  
FY14 Return of Investment (ROI)  
Productivity Enhancement and Cost Avoidance

17%  
Avg. Feature (UserStory)  
Velocity Increase

39%  
Avg. Predictability enhancement

2.3%  
Avg. Availability  
Enhancement for all production applications

65%  
Enhanced security for external facing applications

© 2013-2014 Cisco and/or its affiliates. All rights reserved.
Project Management As A Career
Project Management Industries & Fields

- High-Tech
- Manufacturing
- Visual Design
- Pharmaceutical
- Process Automation

- Product Development
- Construction
- Engineering
- Quality Assurance
- Industrial Design
Day in the life of a Scrum Master

- On Planning/Review Days:
  - Facilitate Iteration Planning session
  - Facilitate Iteration Demo
  - Facilitate Iteration Retrospective

  ...Prepare for and carry out this full day activity

- On Non-Planning Days:
  - Facilitate Daily Scrum
  - Work with Product Owner to maintain and groom the backlog
  - Manage and resolve obstacles for the team
  - Participate in Scrum of Scrums

  ...Be present with the team
Traits of a Scrum Master

- Responsible
- Humble
- Collaborative
- Influential
- Knowledgeable
- Good listener
- On good terms with team members and stakeholders
# Certifications (Waterfall)

<table>
<thead>
<tr>
<th></th>
<th>CAPM</th>
<th>PMI-RMP</th>
<th>PMI-SP</th>
<th>Project Management Professional</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Name</strong></td>
<td>Certified Associate in Project Management</td>
<td>PMI – Risk Management Professional</td>
<td>PMI – Scheduling Professional</td>
<td></td>
</tr>
<tr>
<td><strong>Offered By</strong></td>
<td>Project Management Institute</td>
<td>Project Management Institute</td>
<td>Project Management Institute</td>
<td></td>
</tr>
<tr>
<td><strong>Education</strong></td>
<td>Associated Degree</td>
<td>Bachelors</td>
<td>Bachelors</td>
<td>Bachelors</td>
</tr>
<tr>
<td><strong>Work Experience</strong></td>
<td>1500 Hrs</td>
<td>3000 Hrs</td>
<td>3500 Hrs</td>
<td>4500 Hrs + 3 Yrs</td>
</tr>
</tbody>
</table>

Source: Project Management Institute (PMI)
# Certifications (Agile)

<table>
<thead>
<tr>
<th>Name</th>
<th>Certified Scrum Master</th>
<th>Certified Scrum Product Owner</th>
<th>Certified Scrum Professional</th>
<th>Certified Scrum Coach</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Offered By</strong></td>
<td></td>
<td></td>
<td></td>
<td>ScrumAlliance</td>
</tr>
<tr>
<td><strong>Work Experience</strong></td>
<td>Minimal</td>
<td>Minimal</td>
<td>2000 Hrs</td>
<td>“Scrum Expert”</td>
</tr>
<tr>
<td><strong>Certification Process</strong></td>
<td>2-day Class, Pass Exam</td>
<td>2-day Class, Pass Exam</td>
<td>Pass Exam</td>
<td>3 year interactive application</td>
</tr>
</tbody>
</table>

Source: scrumalliance.org
Overlap between grades allows transition between paths for individuals with appropriate profiles

Careers can begin on ScrumMaster or development path

Individuals either devote their careers to an agile leadership role as ScrumMaster or shift focus to agile management or agile development
Tips to get into the field

• Internships – Great way to get exposure and business experience
  ▪ UCSC NMO Lab
  ▪ Most companies have internship programs

• Education:
  ▪ Product development process
  ▪ Software development concept

• Stay up on industry trends
  ▪ Books
  ▪ Blogs
  ▪ News articles
  ▪ Webinars/Seminars

• Participate in local chapters of organizations e.g. PMI, SV ALN, Meetups
Thank you.