The Role of the Product Owner

Michael Cox
Vice President and Senior Consultant
NetObjectives, Inc.
michael.cox@netobjectives.com
“What is all this Agile stuff about, anyway?”
The Role Of the Product Owner

The traditional role
Why change?
What does the agile role look like?
Examples
The Traditional Role

• Multiple product owners and business stakeholders provide input and define requirements
• Sponsors often high in the organization – funding the project but not into the details
• Competing decision makers – i.e. IT and Business
• Mostly involved in the front end requirements and backend tests
• Receive status from program managers
The Traditional Role

• Detailed plans are put together up front
• Progress toward achieving desired product is based on compliance with a plan
• Management of tasks via status meetings
• Utilization of resources – especially people
• Command and control to tell the team what to work on and define due dates (often in conflict)
The Traditional Role – the Issue

- Conflict between trying to define requirements *a priori* and time to market (or cycle time)
- Customer and market needs are brought in too late
- Product does not meet customer’s needs (cost, schedule, functionality)
- Amplified within the DoD where the acquisition customer and the end customer are not the same
How Did We Get Into This Spot?

- Tremendous rise in the standard of living the past 100 years in all developed countries
- Rise was largely driven by productivity improvements
  - Agricultural up 3 to 5% a year since 1900
    - 50% of workforce in 1900, < 2% today, more production
  - Production up by 3% a year since Depression
    - 35% of workforce in 1940, < 15% today, 100x output rise

Basis has been the Invention and Widespread Adoption of Mass Production Techniques
How Did We Get Into This Spot?

Managing via hierarchy, command and control
Scientific management – the one best way
Economies of scale
Batch production

Lean Principles have generated Lean Practices
How Did We Get Into This Spot?

- Mass production management techniques in systems and software development have largely failed
  - Documentation = Understanding
  - The right tasks, correct pressure - force it to happen
  - “If they would freeze requirements, we would be fine”
  - “Heroes” called in when program is in real trouble

- A dissatisfied customer community has imposed more controls and rigidity

- Contractors countered with rigid contracts and change orders to batter the customer with cost and schedule

- Product owners were not involved until too late
we are always working with uncertainty
Requirements ...

Decay and Lose Value over time
Requirements are not fully understood even after a formal sign-off.
Requirements
change often
during long development cycles
Requirements

piled on

poorly prioritized

long delivery cycles

What does Agile demand from the Product Owner?
Agility

Predictability of Business Value Realization
Agile is about Business Iterations

not Development Cycles
Agile

Agile is a method that features rapid delivery of functional product iterations

Relies on immediate customer feedback

Allows for evolving understanding of system
Discover incremental Business Value

Realize it

software product development

Discover how to build & implement it
Usage of Features and Functions in Typical System

- Never Used: 45%
- Often: 13%
- Sometimes: 16%
- Rarely: 19%
- Always: 7%

Source: Standish Group Study of 2000 projects at 1000 companies
More of the Right Stuff
Less of the stuff never used
Business priority
Incremental delivery of high value
Improve cycle time
Improve rate of delivery
Minimize WIP
“The greatest improvement in knowledge work will come from simply not doing what does not need to be done”

Peter F. Drucker

Harvard Business Review
“The New Productivity Challenge”
November/December 1991
“You cannot **build** the right thing if you have not **discovered** it first!”

This is the role of the product owner in agile development!
Project-based vs Business Value-based

**Defined**
- Scope
- Budget
- Schedule

**Discovery**
- Highest value
- Allocate budget

**Requirements**
- Defined without priority

**Requirements**
- Prioritized on Business Value
- Sequenced on ROI

**Limited evolution**
- Scope
- Budget and schedule fixed

**Constant evolution**
- Based on discovery
- Budget follows

**Big bang deployment**
- Build & deploy at end

**Increments**
- Build & deploy increments

Incrementally Realizing Business Value

Evolving the System
Requests

Criteria
- Business Value
- Sizing

Prioritize
- Prioritize
- Sequence

Prioritized Backlog

Sequenced Backlog

Product Owner Must Drive the Process

revisit each time

build

product owner process flow

Role of Business Product Owner

- Creates and maintains the Product Backlog
- Prioritizes and sequences the Backlog according to business value or ROI
- Assists with the breakdown of Features into user stories that are granular enough to build quickly
- Conveys the Vision and Goals at the beginning of every Release and Sprint
Role of Business Product Owner

• Represents the customer, interfaces and engages the customer

• Participates in the daily meetings of the team

• Responsible for buyoff of the incremental product progress

• Has responsibility to define when work is done and complete authority to accept or reject it
Role of Business Product Owner

- Ability to manage dependencies and risks
- Ability to prioritize and sequence business needs
- Deep understanding of what the customer needs
- Good intuition of the development team's capabilities
- Unafraid to set direction for the product without telling the team how to develop it
Product Owner – the Agile Reality

• Can no longer be hands off
• Can not simply write requirements and then take delivery
• Must continuously drive for incremental realization of valuable product
• Must remove impediments
Responsibilities of a Product Owner / Customer

- Determine what Stakeholders Want
- Decide what They Actually Get
- Drive the Team at a Sustainable Pace
- Write Stories Representing This
- Explain The Stories to the Team
- Approve the Functional Tests
- Validate That We Got What We Wanted
- Release the Product
The Product Owner

Must pay attention to all the ‘stories’ within a feature

- User Story (Business Functionality – value)
- Analysis (discover what to build / How to build it)
- Development Story (system capability)
- Enabling (ex. Training, tools, process)
- Change Mgmt (how the value will be launched & used)

And also at Release and Product Levels (and Portfolio)

…AND…

Only User Stories have “Business Value”! (sorry devs)
Transition Thinking: Big batch to smaller continuous incremental batches:

PO: highest business value, right size *at the right time* (just in time)

Requires continuous planning
Case Study – DoD Acquisition

• Development of a DoD weapon system – next generation of an existing capability

• Program Office driven to change by
  • Declining budget authorization
  • Long development timeline not responsive
  • Customer satisfaction at high risk

(This example is a combination of experiences and programs)
How did the Product Owner Act?

• Old way of doing business – massively parallel waterfall process
• “Product Owner” was not the end user
• Tried to write down all needed requirements for a complex weapon system
  Thousands of requirements
  Little end user/product owner involvement
How did the Product Owner Act?

- Old way of doing business – massively parallel waterfall process

<table>
<thead>
<tr>
<th>Version</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>v5</td>
<td>42 months</td>
</tr>
<tr>
<td>v6</td>
<td>42 months</td>
</tr>
<tr>
<td>v7</td>
<td>42 months</td>
</tr>
</tbody>
</table>

Planned Budget makes this unachievable

Today
Case Study – the Old Way

**Long Cycle time forced parallelism to meet deliveries**

- Only 14% of the process steps were value added
- Time from idea (value from product owner) to start of coding 1 year
- Time from code start to first demo to product owner 1 year

<table>
<thead>
<tr>
<th>Task</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Write CR in CLEARQUEST</td>
<td>CRB Assigns to CRB M/W/F</td>
</tr>
<tr>
<td>CRB Update in CLEARQUEST to set scope</td>
<td>Rap Sheet in Excel to set scope</td>
</tr>
<tr>
<td>QueueWaiting for SE</td>
<td>Triage #2 (E+5, E+5) Chair</td>
</tr>
<tr>
<td>Scoping requirements to software</td>
<td>SE creates PowerPoint for Triage #2</td>
</tr>
<tr>
<td>SW/SE meeting</td>
<td>Triage #3 Dry Run TS EWG</td>
</tr>
<tr>
<td>SW Coordination</td>
<td>TS EWG Monthly Wed</td>
</tr>
<tr>
<td>SW provides hours estimate</td>
<td>Triage #4 Pre CCB</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Task</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Update SE Decision, Create new Excel SS</td>
<td>Excel SS to CRB M/W/F</td>
</tr>
<tr>
<td>Update CLEARQUEST</td>
<td>SW WG Lead Need SSS? Yes =&gt; Proceede</td>
</tr>
<tr>
<td>SW Update Workflows</td>
<td>SE Update Workflows</td>
</tr>
<tr>
<td>CRB Review</td>
<td>SE &amp; SW TEM Write new &quot;clone&quot; CR, draft DOORS number</td>
</tr>
<tr>
<td>Implement changes in DOORS</td>
<td>Pre-CCB Implement changes in DOORS</td>
</tr>
<tr>
<td>SRR Kickoff, 282, Tech Assessment</td>
<td>SRR Kickoff, 282, Tech Assessment</td>
</tr>
<tr>
<td>Internal dry run</td>
<td>Internal dry run, External dry run</td>
</tr>
<tr>
<td>External dry run</td>
<td>Internal dry run, External dry run</td>
</tr>
<tr>
<td>External dry run</td>
<td>External dry run, External dry run</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Task</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SRWG 282 Chairs Writing of SS</td>
<td>Dry run</td>
</tr>
<tr>
<td>SRWG 282 Chairs Writing of SS</td>
<td>Capt review workflow</td>
</tr>
<tr>
<td>SRR 100+ people, 1 per VX</td>
<td>Capt review workflow</td>
</tr>
<tr>
<td>Internal dry run, External dry run</td>
<td>TKL 282 copy info to SW SW</td>
</tr>
<tr>
<td>SW Coordination</td>
<td>SW Coordination</td>
</tr>
<tr>
<td>SW Coordination</td>
<td>SW Coordination</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Task</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SW update in CLEARQUEST to set scope</td>
<td>Rap Sheet in Excel to set scope</td>
</tr>
<tr>
<td>Fleet Review</td>
<td>Triage #2 (E+5, E+5) Chair</td>
</tr>
<tr>
<td>Hours within CAIV? Rap Sheet</td>
<td>Triage #3 Dry Run TS EWG</td>
</tr>
<tr>
<td>SE creates PowerPoint for Triage #2</td>
<td>TS EWG Monthly Wed</td>
</tr>
<tr>
<td>SW/SE meeting</td>
<td>Triage #4 Pre CCB</td>
</tr>
</tbody>
</table>

Case Study – the Old Way

• The delivered system was not acceptable to the end user

• New requirements – evolved after contract award – could not be met at all

• Real product owner involvement was lacking in the process – and it showed in the result!
Agile Development

The process was changed by applying lean/agile to the system development – required a new definition and role for the product owner!
Case Study - Results

- Process changes reduced cycle time:
  - > 52% for large changes (additional features)
  - > 60% for rapid response (user issues)
- “Product Owner” redefined
  - End user involvement
  - Scope owned by dedicated group of PMO, end user, and contractor personnel
  - Frequent value prioritization fed rapid development cycle

Candidate Definition Group
PRODUCT OWNERSHIP!!

Resource allocation
Staging and unfolding of requirements with product owner

“Surge”

Cell 1

Cell 2

Cell 3

Cell 4

Cell 5

Cell 6

Cell 7

Development Environment for CSCI Integration and Test

Case Study – Financial Institution

- Established a huge “book of work” in September for the following year
- Then turn the BOW over to IT teams for development
- Product owners were not participating in prioritization (with other projects, break fix items, maintenance, etc.)
- No product owner input into project maturation from a value standpoint – adding technical debt
“You cannot **build** the right thing if you have not **discovered** it first!”

This is the role of the product owner in agile development!
Case Study – Financial Institution

Changes Made

• Agile project teams (15) established to support products and lines of business
• Product owner role formalized for each team
• Prioritization at the front end (product owner owns the scope)
• PO value determination as projects were unfolded (again product owner owns the scope)
Case Study – Financial Institution

Results

• Reduced size of BOW by 80+%
• Stopped building projects with no product owner support or identified business value
• Teams are very responsive to changes in business priority
• Expansion to other areas of the bank
Questions
Michael Cox
Vice President and Senior Consultant
NetObjectives, Inc.
michael.cox@netobjectives.com
610-858-7289