Persona Based Teams

The Ultimate Focus
Introductions

Mike Lowery – Agile Coach @plasticlizzard
Andy Hircock – Product Owner
Rob Vandenberg – VP Research & Development
Mxi Technologies

• Enterprise Software and Solutions for Aviation Industry
• Founded in 1996
• 300+ people based in Ottawa, ON and Dallas, TX
• Customers in every Continent
• Core Product Maintenix
  – 3 Million SLOC
  – >50 User types, 1000’s users in a typical installation
Hitting the wall!
The limitations of skill based teams
How we used to build software...

- **Gate A** • Scope
- **Gate B** • Conceptual Design
- **Gate C** • Project Charter
- **Gate E** • Build & Verification
- **Gate D** • Detailed Design
- **Gate F** • Release
- **Gate G** • General Availability
...and how we used to look
Challenges – Distance from Customer
Challenges – Engineering Support
Challenges – Too Much Information
Challenges – Scaling Capacity
Challenges – Multiple Product Lines
The Wall
So what did we do?

*We began our Agile journey!*  
- and brought our entire organization along!

1. Skills  
2. Product  
3. Personas

1. Personas  
2. Product  
3. Skills
Product Development Teams

Personas (Department)

- Remi: Resource Manager
- Roman: Resource Manager (MRO)
- Palmer: Production Planner
- Pippo: Production Planner (MRO)
- Proctor: Production Controller
- Ruprecht: Production Controller (MRO)
- Jayson: Job Standards Author

Product (S/W Modules)

- Shift Planning
- Production Templates
- Master Panel Cards
- Capacity Patterns
- Production Plans
- Hangar Job Cards
- Slot Planner
- Daily Progress Reports
- HR Adapter
- Tally Sheet Loader

Skills (Squads)
Map of the Maintainix Universe

Planning
- Asset Mgmt
- Repair Station
- Contract Mgmt

Supply Chain
- Honor Execution

Finance

Materials

Engineering
- Technical Records

Planning
- Line Mgmt or MUC

IT
Personas at Mxi
THE CASUAL USER

Pete

Uses most phone features
Uses phone to make, use contacts send texts and take pictures
Always has mobile device with him

THE BUSINESS USER

Jennifer

Whats a simple phone, but functions as an integrated device
Wants to easily read email and call back the sender
Needs “Popular” mail server integration

THE POWER USER

Brad

Will use almost all built-in mobile functionality
Will extend phone functionality with additional software
Will look through and change change every menu option
<table>
<thead>
<tr>
<th>PICTURE &amp; NAME</th>
<th>DETAILS</th>
<th>GOAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>What does the persona look like? What is its name?</td>
<td>What are the persona’s relevant characteristics and behaviours?</td>
<td>Why would the persona want to buy or use the product?</td>
</tr>
<tr>
<td>Choose a picture and a name that are representative, and that allow you to develop sympathy for the persona.</td>
<td>Consider demographics, job, lifestyle, spare time activities, attitudes, and common tasks, for instance.</td>
<td>What problems should the product solve?</td>
</tr>
<tr>
<td></td>
<td></td>
<td>What benefits does the persona want to achieve?</td>
</tr>
<tr>
<td></td>
<td></td>
<td>If there are multiple problems or benefits, identify the main one and put it at the top.</td>
</tr>
</tbody>
</table>
PROCUREMENT CONTROLLER

responsible for ensuring sufficient parts to carry out the work on time before aircraft arrival, working with on-site rep on material request approvals, and supporting finance clerk with invoice generation after aircraft departure.
Line Maintenance Technician (Licensed) (Liam)

AKA: Licensed Line Maintenance Engineer
NAME: Liam
AGE: 45 years
GENDER: Male
OCCUPATION: Airline Licensed Line Maintenance Technician (LMT)
DEPARTMENT: Line Maintenance + MOC

INTRODUCTION: Liam is a licensed aircraft maintenance technician (LAMT) for a major airline. As a LAMT, Liam is responsible for directing maintenance and ensuring an aircraft at the line is compliant and safe for service.

BACKGROUND: Liam attended college to become an aircraft technician. Joined airline as an apprentice aircraft maintenance technician, obtained his license and became a full licensed aircraft maintenance technician; currently working in line maintenance.

COMPUTER USE:
- Lead LMTs are equipped with portable, company-issued computers. The computers accompany the LMT to the line and enable them to access the maintenance system. This by no means reflects their general comfort with using computers.
- A LMT uses their computer primarily for retrieving information and entering data, e.g., accessing technical manuals, and recording actions to keep on defects.

GOALS:
- Ensure the maintenance accomplished on an aircraft is safe, compliant, and high quality.
- Ensure that a flight is not delayed.

KEY TASKS:
- Upon assignment to an arriving aircraft, a LMT will review the aircraft’s maintenance records to determine and prepare for any work that needs to be accomplished.
- He will typically arrive at the gate ~ 10 minutes prior to the scheduled arrival of the aircraft.
- Upon shutdown, he boards the aircraft and retrieves/reviews the technical and cabin logbooks, as well as having a quick briefing with the arrival flight crew.
- All new items logged during the flight are actioned. Additional items may be logged and actioned while crews work to prepare the aircraft for its next flight, e.g., from line maintenance, cleaning, catering, incoming flight and cabin crew.
- In reviewing items in the cabin logbook, the LMT may move it to the technical logbook as needed.
- As items are actioned, they are recorded in the logbooks. Upon actioning all of the open technical items, the Lead LMT can sign the Certificate of Release to Service (CRS) and release the aircraft to the flight crew for the next flight.

FRUSTRATIONS:
- Lots of interactions with logbook, but there is only one logbook.
- Not able to raise and close faults more quickly.
- Going through history to troubleshoot a problem.
- Non-maintenance items in logbook, e.g., landing gear pins, door nuts.
- Connectivity to maintenance system stability.
- Transit times (limited) – do anything to avoid delaying the aircraft.
Storeroom clerk

responsible for moving parts within the warehouse (i.e. pre-draw, issue, turn-in, transfer), counting parts, arranging bins/shelves, physical setup, and executing storage maintenance tasks (e.g. lubricate seals/rubber, turning items).
TURN IN

The storeroom clerk uses the adhoc turn-in feature to create the part’s record in the system.

Capture:
Defect description, Aircraft, Owner, WO, Removal task, Provision.
US STAGING

The storeroom clerk officially accepts the part as unserviceable staging and physically moves the part from the incoming staging to the unserviceable staging.
ISSUE

Parts available for reservation will appear on the Issue list.

The storeroom clerk will issue the part in the system. The system detects and displays any provisioning discrepancies.

Pick tickets are printed so that the correct part can be physically found and placed on the serviceable staging cage.
SERVICEABLE STAGING

The storeroom clerk will place the part on the serviceable outbound shelf.
PUTAWAY

A storeroom clerk will put away the part on an appropriate stores shelf.
Being a Persona-Focused Product Owner
Maintenix is BIG!
Just... One... More... Feature

- Software Architecture
- Business Knowledge
- Product Knowledge

Business Analyst

UX Designer

S/W Architect
We Built Configurable, Not Usable

Product Knowledge

Software Architecture

Customer Knowledge
Welcome To A Persona Based Team!
Product Owner Job Has Changed

Mission: improve my personas’ lives as much as possible day-by-day, release-by-release
I Must KNOW The Customer

Customer Knowledge

Product Knowledge

Software Architecture
I Must Inspire The Team!

Agile Epic & Story Planning

Engineering Squad University

Customer Site Visits
Challenges In The New World

Product Owner Coordination

Product Management

Legacy Application

Personas

Multi-Persona Features
How persona based teams have impacted Agility
As a <role>
I want <goal>
So that <benefit>

Acceptance criteria:
...
Scaling and Growth

• Measuring demand is a function of the size of the roadmap against the capacity of the team/s

• Team Growth models
  – Split and draw from the same backlog
  – Carve up some of the personas
  – Squadification
Creating Great Teams

How Self-Selection Lets People Excel

Sandy Mamoli
David Mole
edited by Katharine Dvorak
Scaling and Growth

• Domain / Product Knowledge hurts us
  – Scaling product knowledge, new teams must have “old” members
  – Productivity hits when you are new to the product 4 - 6 month spool up time (PO hardest hit)
  – Productivity hit when you move team 2 - 3 months
  – New PO’s can have either domain knowledge or Agile knowledge we can train for one having both does not work as the learning curve is very steep

• Carving personas is finite
Teams vs Plants

• Self Pollination
  – Decreased genetic variation / increased genetic uniformity
  – Harmful recessive characteristics more likely to be expressed
  – Reduction in gene pool
  – Inbreeding depression reduces fitness

• Cross Pollination
  – Increased genetic variation
  – Harmful recessive characteristics less likely to be expressed
  – Maintenance of the gene pool
  – Gives vigour, so fitness maintained
Rationalising, Irrational Decisions

**Conway’s law** - organizations which design systems are constrained to produce designs which are copies of the communication structures of these organizations.

**Coplien & Harrison Organizational Patterns of Agile Software Development, 2004** - If the parts of an organization (e.g. teams, departments, or subdivisions) do not closely reflect the essential parts of the product, or if the relationship between organizations do not reflect the relationships between product parts, then the project will be in trouble. ... Therefore: Make sure the organizations is compatible with the product architecture.
Addressing Challenges

- Squad Members direct interaction with Users. Regular site visits.
- No dedicated Engineering Support Team. Each Squad supports full life cycle of its Software Modules.
- Each Squad responsible for subset of Personas / Products. Deeper knowledge in specific Areas.
- Growth done via new Squads. Scale with Demand (grow and contract).
- Squads at Product Line level. IT related Personas also addressed.
Bonus Side Effect – Engagement!

Personas provided a profound Purpose to people!
Questions?
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