Product Management

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AMOS D01

Product Management (Recap)

- **Product management**
  - Is the **management** of a company's products
  - Along the **product's life-cycle**
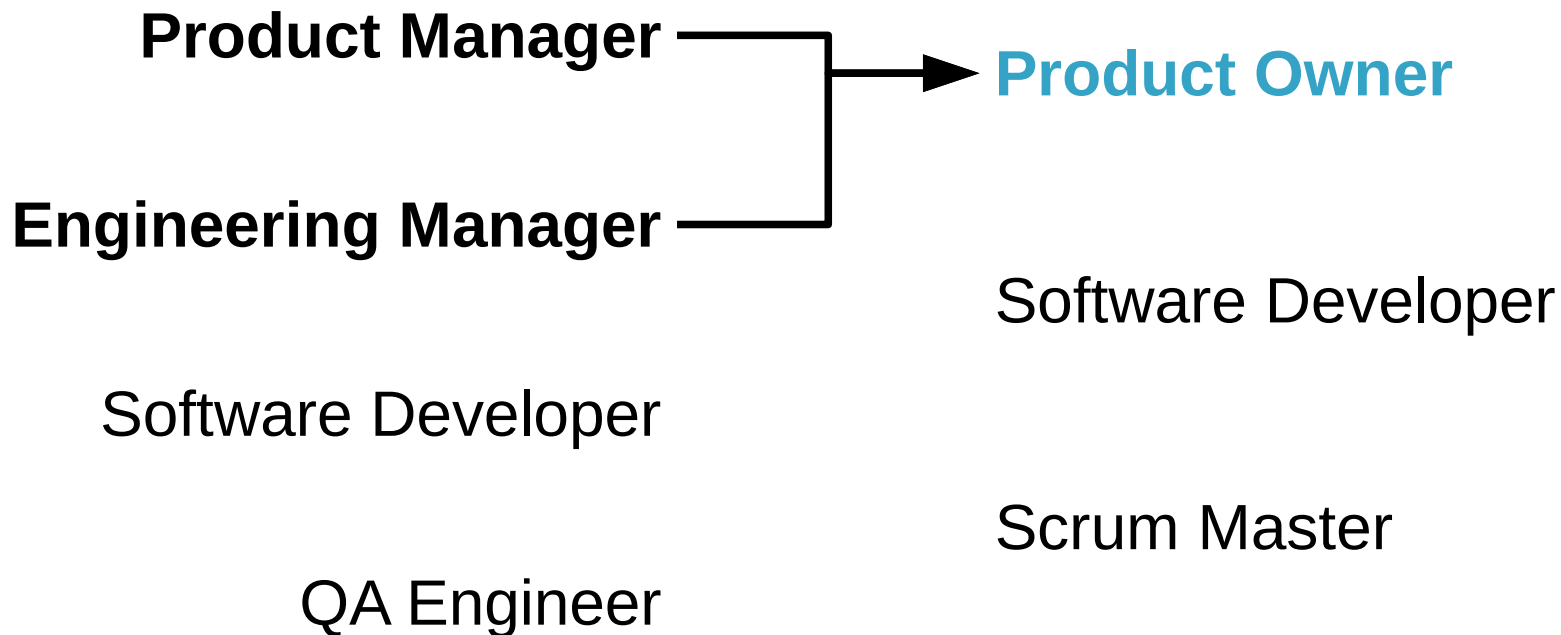 - Across the **product portfolio** (if any)

What?

What first?

Traditional

Scrum

Product Manager ⟶ **Product Owner**

Engineering Manager

Software Developer

Software Developer

Scrum Master

QA Engineer

4

Product Owner

- **Product owner**
    - Holds **overall responsibility** for the product being developed
    - Provides
        - **product vision,**
        - **product requirements,** and

    - **Plans** and helps plan **development** and
    - **Tracks progress.**

Product Owner Processes and Artifacts

Processes	Artifacts
Opportunity Assessment	Product Vision
Product Specification	Product Glossary, Product Backlog, Feature Archive
Product Planning	Sprint Backlog Release Plan
Progress Tracking	Development Speed Burndown Charts

Product Owner Focus
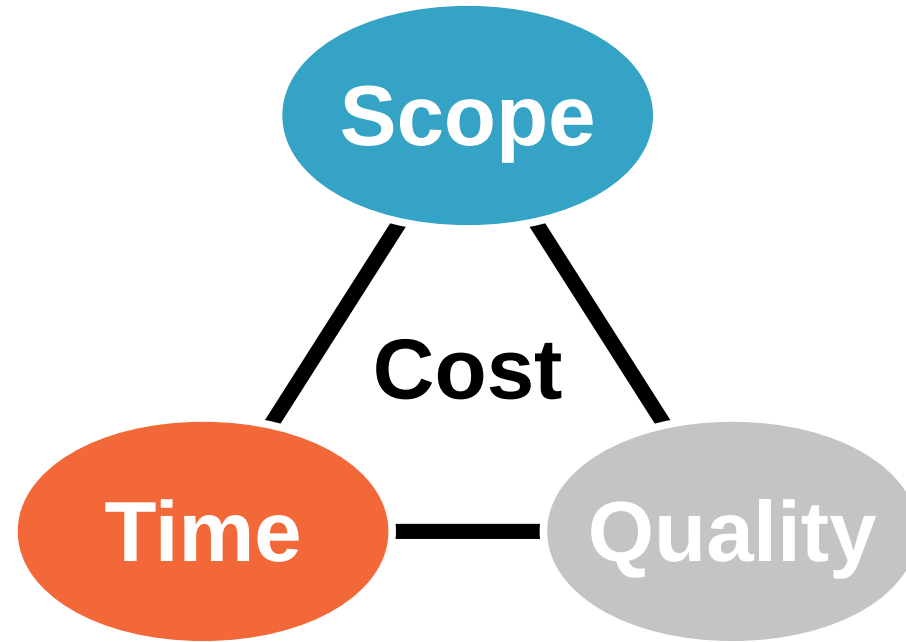
Opportunity Assessment (Practices)

- Research Market
  - Responsible: Product owner
  - Artifact: Marketing requirements document (MRD)
  - Collaborators: Market / customer, funder / sponsor
  - **Note: not part of Scrum proper**

- Articulate Vision
  - Responsible: Product owner
  - Artifact: Product vision
  - Collaborators: None

Wahlzeit

Last Viewed

Praise: 9.67

Photo by testuser

Photo Filter

Click to toggle filter!

Filter!

Community

It is Wahlzeit!

Who/what/where is that?
Click to show/hide description!
Photo by testuser

Praise it!

- ○ 10
- ○ 9
- ○ 8
- ○ 7
- ○ 6
- ○ 5
- ○ 4
- ○ 3
- ○ 2
- ○ 1

Or skip it.

Tell a friend about this photo: http://localhost:8585/x1ac1.html — Send Email to the owner of this photo!
Please help keep this community site clean! Flag photo as inappropriate if necessary.

This website is to show the best in photos!

[blog] — [about | contact / imprint | terms] — [language: en | de] — [photo size: XS | S | M | L | XL] — [debug: reset]

[processing time: 0.004 seconds]

Flowers Product Vision

The Flowers social network helps flower enthusiasts worldwide to connect with each other and enjoy following their favorite hobby online. Centered on showing and rating favorite flower photos, it inspires growing and presenting ever more beautiful flowers. With a highly engaged user community, Flowers is the best place for producers and sellers of gardening supply to reach out to customers and engage with them. Such engagement involves understanding flower enthusiasts' needs around gardening supplies and selling to them.

Product Vision (Artifact)

- Product vision
  - Captures the essence of the product and the reasons for its existence as the business value it provides to users
  - Names users and customers; it embodies the core structure of an underlying business model

- Other properties
  - Inspiring: Inspires users / customers
  - Timeless: Is not bound to a schedule
  - Focused: Reduces to the essentials
  - Decision aid: Is the ultimate arbiter

- **Please note that in AMOS we use**
  - **A long-term product vision**
  - **A short-term (AMOS) project mission**

Product Specification 1 / 3 (Practices)

- Create Glossary
  - Responsible: Product owner
  - Artifact: Glossary
  - Collaborators: Market / customer, developer

- Maintain Glossary
  - Responsible: Product owner
  - Artifact: Glossary
  - Collaborators: Market / customer, developer

Example Glossary (Artifact)

Term	Definition
Individual Photo Rating	A photo rating by a single user of a particular photo at a given point in time.
Overall Photo Rating	A photo rating that represents the community's ranking of the photo in question. Over time, a photo accumulates a large number of individual ratings. The overall rating is the average of those individual ratings.
Photo	A photo is a flower photo that has been uploaded (and is owned) by a system user. A photo has a status that determines its accessibility.
Photo Rating	A numerical value 1..10 that rates a given photo.
Photo Sharing Policy	Flowers has a photo sharing policy. The policy determines what an acceptable photo is. Photos are unacceptable if they are unrelated to the Flower's purpose (i.e. off-topic), ...

Glossary (Artifact)

- Domain glossary
  - A list of concepts and their definition from the product being developed
  - The missing link between the vision and the product backlog
  - Is a "poor man's approach" to a domain model

- Glossary entries
  - Definitions are short; rarely longer than a paragraph
  - Glossary entries are human readable
  - Usually not machine-processable

Quality Criteria for Glossaries

- Main entries
  - Have a clear fully-defined name for glossary entry
  - Have a crisp "is a" definition, followed by secondary properties
  - Vary based on type (main concept, enumerations, stati, etc.)

- Synonyms
  - Synonyms are listed as their own entries

- Shorthands
  - Shorthands point to the full name (not the other way around)

Quiz: What is Wrong With These Entries?

Term	Definition
KPI	KPI stands for Key Performance Indicator, which is a type of performance measurement. An organization may use KPIs to evaluate the success of a particular activity in which it is engaged.
Visualization	Here visualization means data or information visualization. Charts, graphs, images and other visualization methods are used for presenting the data. In this application we focus on visualization ...
JSON	JSON (JavaScript Object Notation) is a lightweight data-interchange format. It is easy for humans to read and write. It is easy for machines to parse and generate ...

Product Specification 2 / 3 (Practices)

- Specify Feature
  - Responsible: Product owner
  - Artifact: Feature
  - Collaborators: Market / customer

- Prioritize Features
  - Responsible: Product owner
  - Artifact: Product backlog
  - Collaborators: Market / customer

- Manage Features
  - Responsible: Product owner
  - Artifact: Product backlog, feature archive
  - Collaborators: Software developer

Example Product Backlog (Artifact)

	A	B	C	D	E	F
1	**ID**	**Theme**	**Short Name**	**Item Description**	**Acceptance Criteria**	**Size**
2	13	Photo Showing and Rating	Show Next Photo	As a visitor, I am presented with a random photo when I go to the website	Repeated visits to the site provide different photos	8
3	14	Photo Showing and Rating	Rate Photo and Proceed	As a visitor, I can rate a photo with a numerical value 1-10; after rating another photo is shown	The rating is stored and an average value is computed	8
4	15	Photo Showing and Rating	Show or Hide Photo Caption	As a visitor, I am presented with a photo caption, which I can expand to full photo data	A first click shows me the photo data, a second click hides it again; repeat	8
5	16	System Administration	Create Default Admin	As a sysadmin, I can create a default application administrator from the command line	After running the command, a default "admin" account with default password "dingdong" exists and can be used	5
6	17	System Administration	Startup and Shutdown Scripts	As a sysadmin, I can startup and shutdown the service from the command line	Three consecutive startup and shutdown command line invocations leave the system in a consistent state	3
7	18	System Administration	Reboot and Shutdown UI	As a administrator, I can reboot or shutdown the service using a graphical UI	The command is only available to the administrator role and shuts down the system to a clean restartable state	5
8	19	System Administration	Cold Backup and Restore	As a sysadmin, I can backup all data to files and reload it fresh while the system is down, using the command line	Running restore after backup recreates the same identical system	8
	20	User Feedback	Flag Photo	As a user, I can flag a photo as	The flagged photo cannot be	8

Chart | Development Speed | Product Backlog | Sprint Backlog | Feature Archive | ◀ ▶ | Explore

Product Backlog (Artifact)

- Product backlog
  - Is a prioritized list of product backlog items
  - Scrum's PRD and the product owner's primary work artifact
  - Does not contain any task descriptions or assignments
  - Is a living document (rather than static) and keeps evolving

- Other properties
  - Focused: On creating value
  - Complete: For current iteration
  - Prioritized: According to current needs
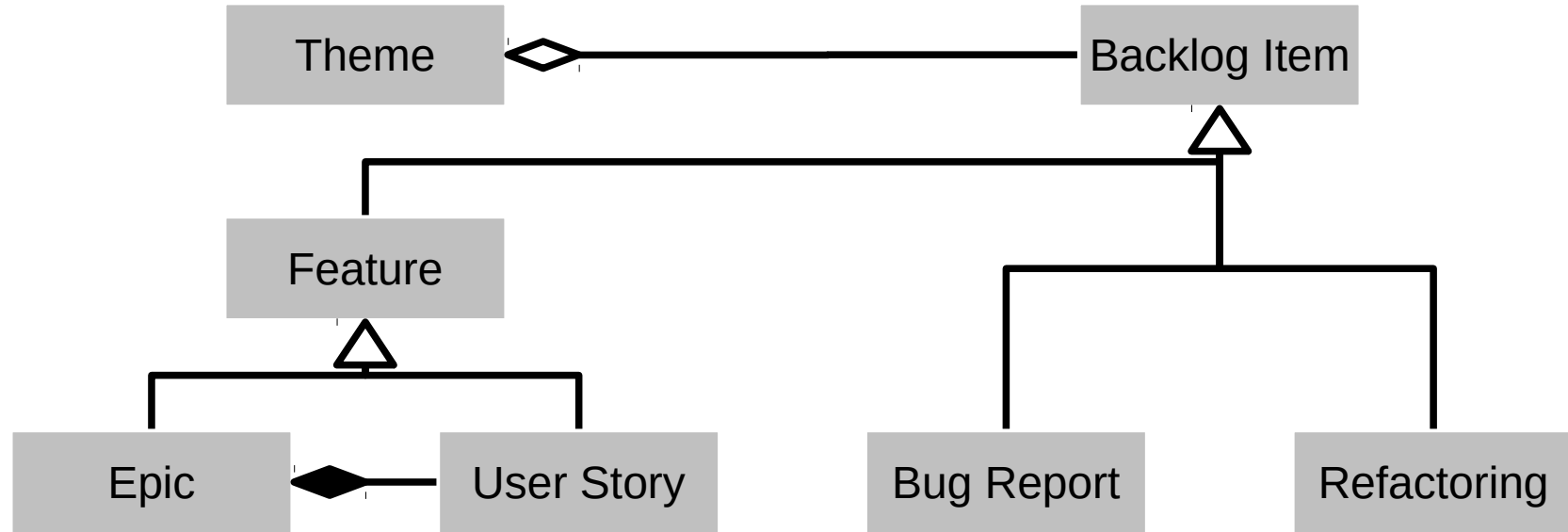 - Evolving: Used in future iterations

Product Backlog Item (Artifact)

- Product Backlog Item
    - Is an entry in the product backlog
    - Is expected to have business value

- Other properties
    - Has various fields, most notably:
        - Theme
        - Short name
        - Item category
        - Item description
        - Acceptance criteria
        - Estimated size

Types of Product Backlog Entries

- Feature
  - A feature is a distinguishing characteristic of a software item (for example, performance, portability, or functionality) [IEEE 829]

- Epic
  - An epic is a large feature awaiting break-down into smaller features; in a product backlog, it acts as a placeholder for these smaller features

- (User) story
  - A user story is a feature presented using a the user-story-pattern that is small enough to be implemented in a sprint

- Refactoring
- Bug report

Model of Product Backlog Items

Flowers / Tell-a-Friend Implemented

- **Specifying**

- **Prioritizing**

- **Managing**

Two Ways of Describing Features

- **Illustrations**
  - Properties
    - Naturally incomplete
    - Used to create discussion

  - Notations
    - Prose
    - Simple User Story
    - Regular User Story
    - Structured Sentence

- **Specifications**
  - Properties
    - Trying to be complete
    - Used in contracting

  - Notations
    - Prose
   - Use Case

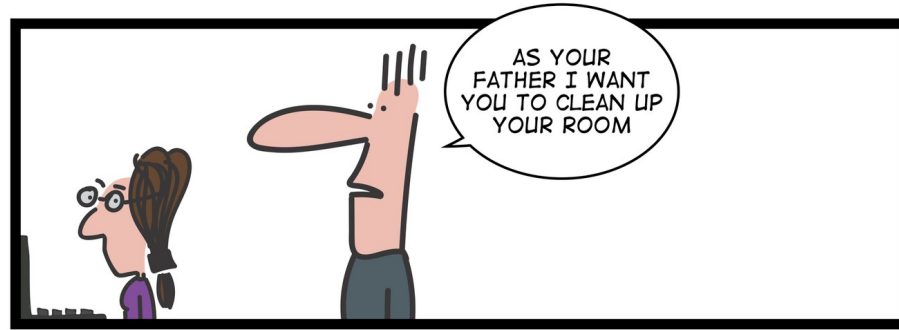# Example Using Simple User Story

Tell a Friend

As a *Flowers user*, I need *a function to tell a friend about a flower photo*, so that *I can share my passion for flowers and increase my network.*

- **Properties**
  - Follows pattern
    - As a *user role*
    - I need a *function*
    - So that I get *business value*

  - Applicability
    - Used to start discussions
    - Unsuitable for contracts

AGILE FAMILIES

geek & poke
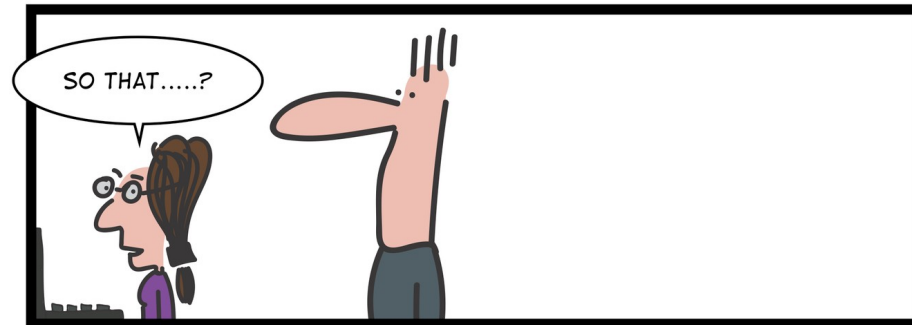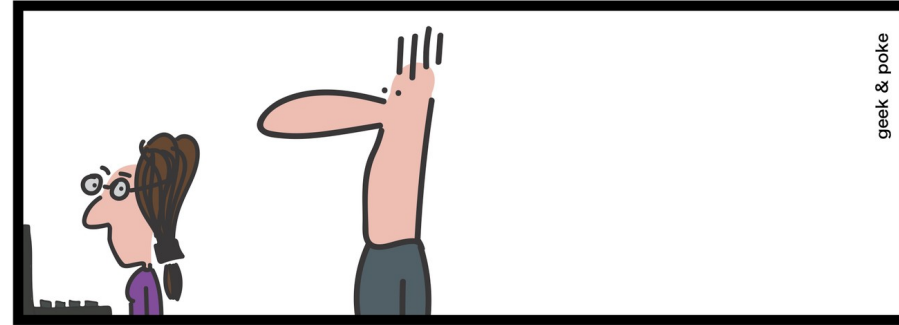
MAKE SURE YOUR USER STORY IS CORRECTLY PHRASED

Tell a Friend

User Story

The user clicks on "Tell a Friend" and is shown a new dialog. The user enters their email address, the friend's email address, a subject and a message to that friend. Upon clicking OK, an email is sent to the friend.

Acceptance Criteria

- A valid email is sent
    - Proper from: and to: fields
    - Proper content incl. valid links
- Sender is cc:ed on email

- **Properties**
    - Tells a story
        - Told from user perspective
        - Is exemplary, not complete

    - Provides acceptance criteria
        - Should not add to specification
        - Used in validating implementation

    - Applicability
        - Used to start discussions
        - Unsuitable for contracts

Structured Sentence (Template)
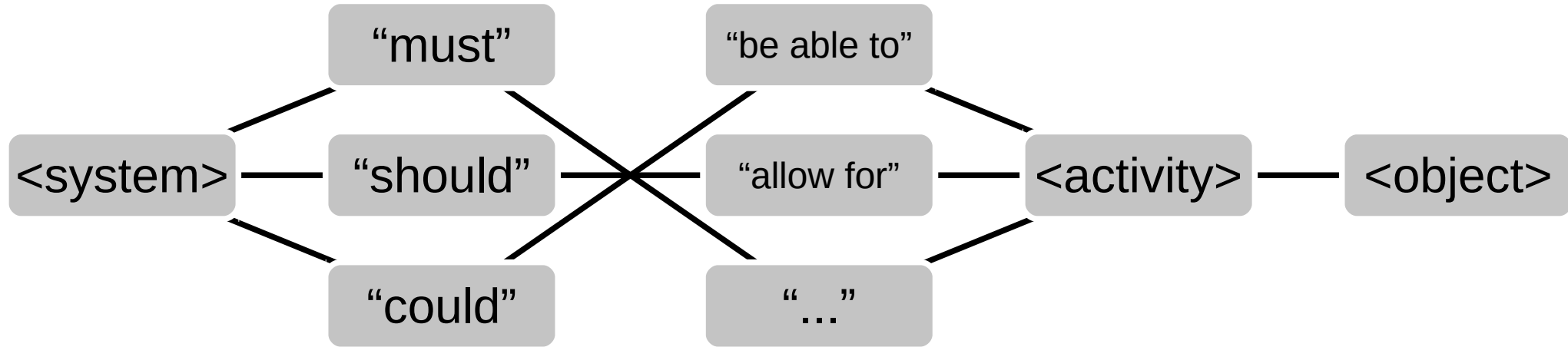
Example using Structured Sentence

Tell a Friend

Flowers must allow the user to send an email to a friend about the photo they were looking at.

- **Properties**
  - Describes a requirement
    - Is declarative in nature
    - Has defined semantics

  - Open to interpretation
    - No specification is complete
    - May contain inconsistencies

  - Applicability
    - Suitable for contracts

Tell a Friend

A user can click on **TELL A FRIEND** in the menu and below each photo. If s/he does so, he sees a new page with an email dia-log. The fields are **FROM**, **TO, SUBJECT**, and **BODY**. The user can fill in only valid email addresses. The body is prefilled with the photo link. Upon **OK**, the email is sent, with the user cc:ed. Upon **CANCEL**, no email is sent. After this, the dialog returns to the main page with a status message **EMAIL SENT** above the main viewing area.

- **Properties**
  - Describes a model
    - Tries to be complete
    - Can be used in contracting
    - Used in implementation validation

  - Open to interpretation
    - No specification is complete
    - May contain inconsistencies

  - **Still dominant in industry!**

Example using Use Case 1 / 2

Name: Tell a Friend

Description: Allows a user to tell a friend by email about Flowers

Actors: User, Visitor

Includes: None

Triggers: Menu Selection on Photo Page

Preconditions: Defined photo function is launched from

Invariants: None

Postconditions: On OK, email is sent; upon cancel, no email is sent

Default Scenario
1. User clicks on link
2. System provides dialog
3. User fills in fields
4. User clicks OK
5. System sends email
6. System returns to main page

Alternative Scenarios
1. User clicks on link
2. System provides dialog
3. User clicks cancel
4. System returns to main page

- **Properties**
  - Describes a model
    - Tries to be complete
    - Can be used in contracting

  - Applicability
    - Used in implementation validation
    - Used for specification guarantees

  - Used in industry
    - Part of UML, good tool support

Flowers Service

Tell a Friend

user

guest
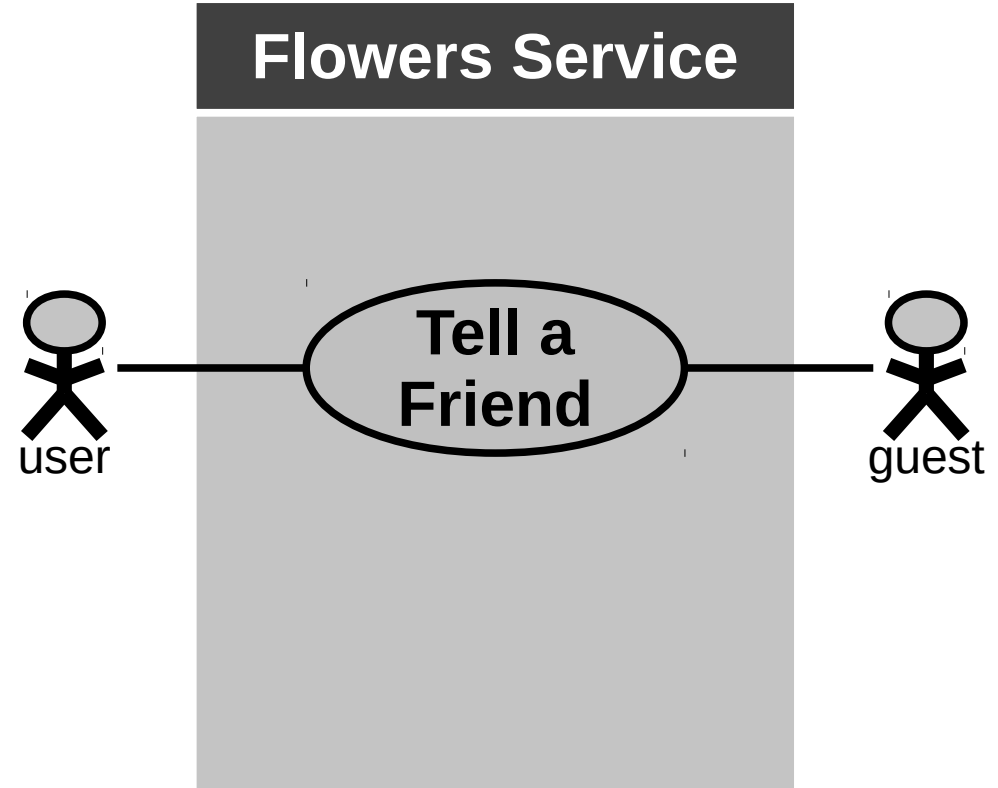
Acceptance Criterion [DR]

- An **acceptance criterion** for a **backlog entry**
  - Is **a proposition** that must be true
    - Before the entry can be accepted (signed-off on)

Acceptance Criteria [DR]

- The (list of) **acceptance criteria** of a **backlog entry**
  - Is **a list of propositions**
    - That must all be true before the entry can be accepted

Story Points

- Story point
  - An arbitrary numeric measure of size of a given feature

- Properties
  - Is a measure of size, not of effort or duration
  - Measured in non-linear increments, forcing choice
  - Is socially agreed upon, depends on team estimation history
  - Is independent of a particular person (and their skills)
  - Is mapped to time using the team's velocity (dev. speed)

Points	Meaning
0	No effort
1	Minimal effort
2	Small effort
3	Medium effort
5	Large effort
8	Very large effort
13	Too large effort

Size vs. Effort

- **Size**
    - Measured in arbitrary unit
    - Are an estimate of complexity
    - Are independent of time
    - **Does not depend on people**

- **Effort**
    - Measured in person hours
    - Are an estimate of "duration"
    - Typically, this is "ideal time"
    - **Depends on implementer**

Quality Criteria for Feature Descriptions

I	ndependent: Features should be independent of each other.
N	egotiable: A feature is man-made, not cast in stone.
V	aluable: Every feature should have business value.
E	stimatable: A feature should be precise so that size can be estimated.
S	mall: A feature should be small enough for one iteration.
T	estable: A feature should have testable success criteria.

User Registration

When trying to upload a profile photo, an unregistered user is first asked to register. After finishing registration, the user is automatically logged in. Then he or she can upload their profile picture. Upon successful completion of the upload, an email is sent to all friends.

Acceptance Criteria

- User is registered
- Photo is uploaded
- Email is sent

Spam-free Reg. Email

Right after user registration, an email is sent to the unverified email address of the user with a unique link that verifies the user's account when he/she clicks on it (see Verify User by E-Mail). The email goes directly into the inbox of the user passing the spam filter.

Acceptance Criteria

- All tags closed, no bad HTML code
- No IP address in URL (plain text)
- No user name in subject/email
- No numbers in subject
- No catchy words in subject
- No capital letters in subject
- Avoid utilizing phrases like "click here"
- No BCC distribution
- No dirty words
- No images in email
- Max. 2 colors in mail (no signal colors)
- No big headings (max. size 14)
- Check email against a Spam checker

Learn Java

As a software developer, I need to improve my Java skills, so that I can program faster and deliver more business value.

Acceptance Criteria

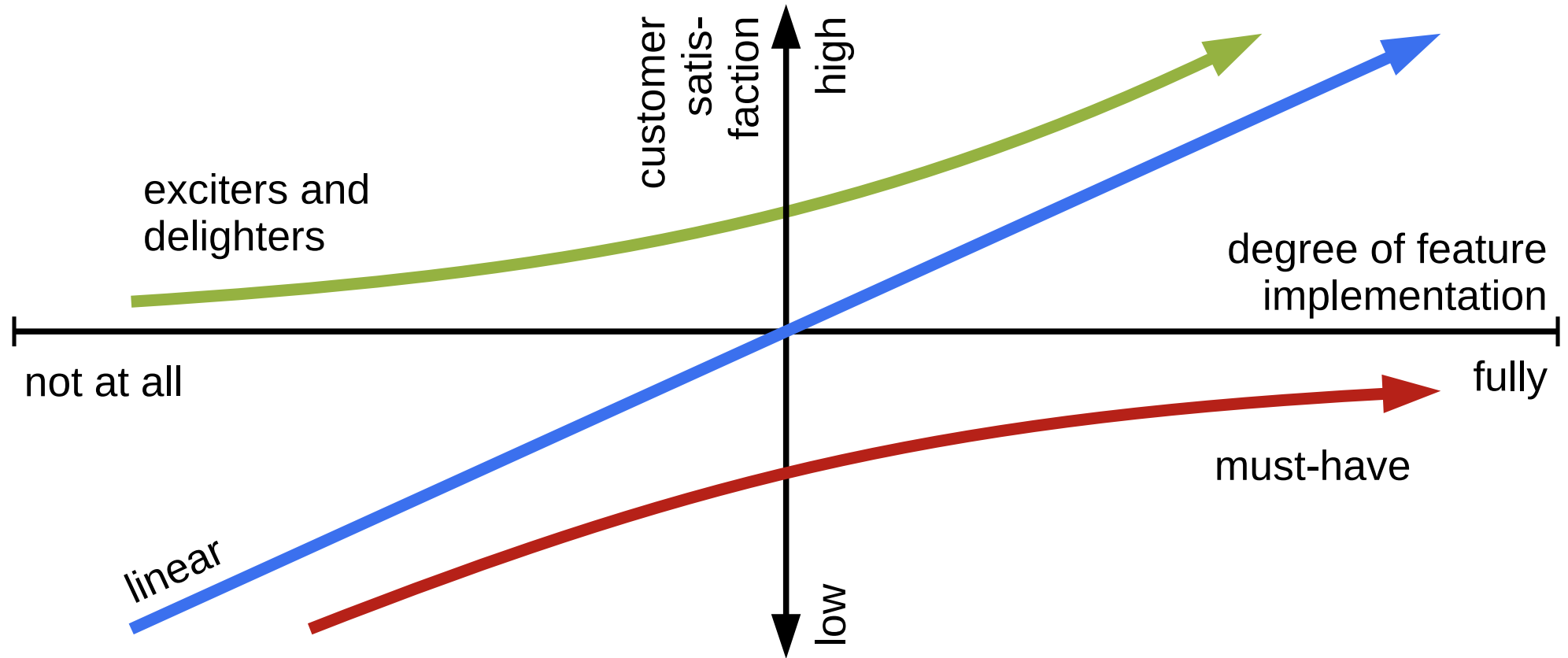- I can do more story points per iteration

Item in Product Backlog (Artifact)

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Development Speed | Product Backlog | Sprint Backlog | Feature Archive

Prioritizing Features by Value and Risk
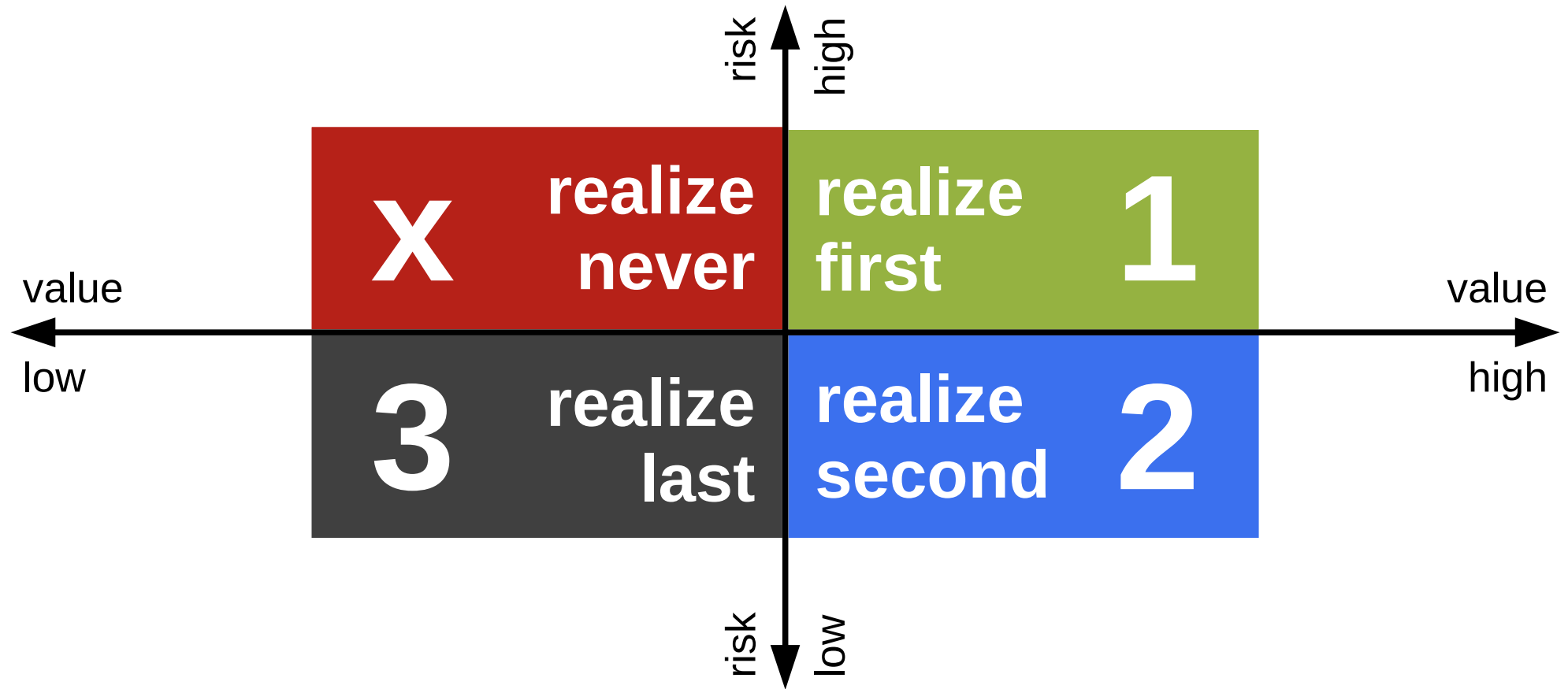
Classifying Features by Kano Model

Feature Priority Categories

1. **Essential / High**

2. **Conditional / Medium**

3. **Optional / Low**

Quiz: How to Prioritize These Features?

1. Login
As a guest, I can login using my user account to get access to user functionality

2. Logout
As a logged-in user, I can logout to free up the computer for some other person

3. Lock-out User
As a user, my account is blocked, if I fail three times in a row when trying to log in

4. Tell a Friend
As a guest, I can tell my friends by email about a flower photo to share my passion

Relative Weighting (Practice) 1 / 2 [W99]

- Definition
  - A prioritization technique for
    - Medium-priority features that are
    - Independent of each other and of
    - Roughly the same or similar effort

  - Works up to a dozen features

- Key inputs
  - Customer: Relative benefit [1..9]
  - Customer: Relative penalty [1..9]
  - Developer: Relative cost [1..9]
  - Developer: Overall risk [1..9]

$$P = \frac{\left(\text{Relative Benefit} + \text{Relative Penalty} \right) \text{ as } \%}{\left(\text{Relative Cost} + \text{Overall Risk} \right) \text{ as } \%}$$

P = prioritization key figure (rational number)

Feature	Relative Benefit	Relative Penalty	Total Value	Value %	Relative Cost	Cost %	Relative Risk	Risk %	Priority
1. Query status of a vendor order	5	3	13	8.4	2	4.8	1	3.0	1.345
2. Generate a Chemical Stockroom inventory report	9	7	25	16.2	5	11.9	3	9.1	.987
3. See history of a specific chemical container	5	5	15	9.7	3	7.1	2	6.1	.957
4. Print a chemical safety datasheet	2	1	5	3.2	1	2.4	1	3.0	.833
5. Maintain a list of hazardous chemicals	4	9	17	11.0	4	9.5	4	12.1	.708
6. Modify a pending chemical request	4	3	11	7.1	3	7.1	2	6.1	.702
7. Generate an individual laboratory inventory report	6	2	14	9.1	4	9.5	3	9.1	.646
8. Search vendor catalogs for a specific chemical	9	8	26	16.9	7	16.7	8	24.2	.586
9. Check training database for hazardous chemical training record	3	4	10	6.5	4	9.5	2	6.1	.517
10. Import chemical structures from structure drawing tools	7	4	18	11.7	9	21.4	7	21.2	.365
Totals	54	46	154	100	42	100	33	100	--

The **feature archive** contains **all the functionality** provided by the **current state of the product**.   [DR]

- **Feature archive**
  - Contains **all functionality**
    - Provided by the current state of the product

Review / Summary of Session

- Scrum product management
  - Definition, role, and practices
  - Product management artifacts
    - Product vision (vs. project mission)
    - Glossary (vs. domain model)
    - Product backlog
    - Feature archive

- Product features
  - Description mechanisms (vs. specification)
  - Prioritization methods

Thank you! Questions?

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DR

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- Contributions
  - None yet