



AGILE SOFTWARE ENGINEERING:

REQUIREMENTS ELICITATION, PRODUCT VISION & ROADMAP

JOHN STOUBY PERSSON



AALBORG UNIVERSITY
DENMARK

Last lecture: What did we learn?

Nykredit

How do Nykredit's practices correspond to and differ from the course curriculum's prescriptions?

Themes from the lecture:

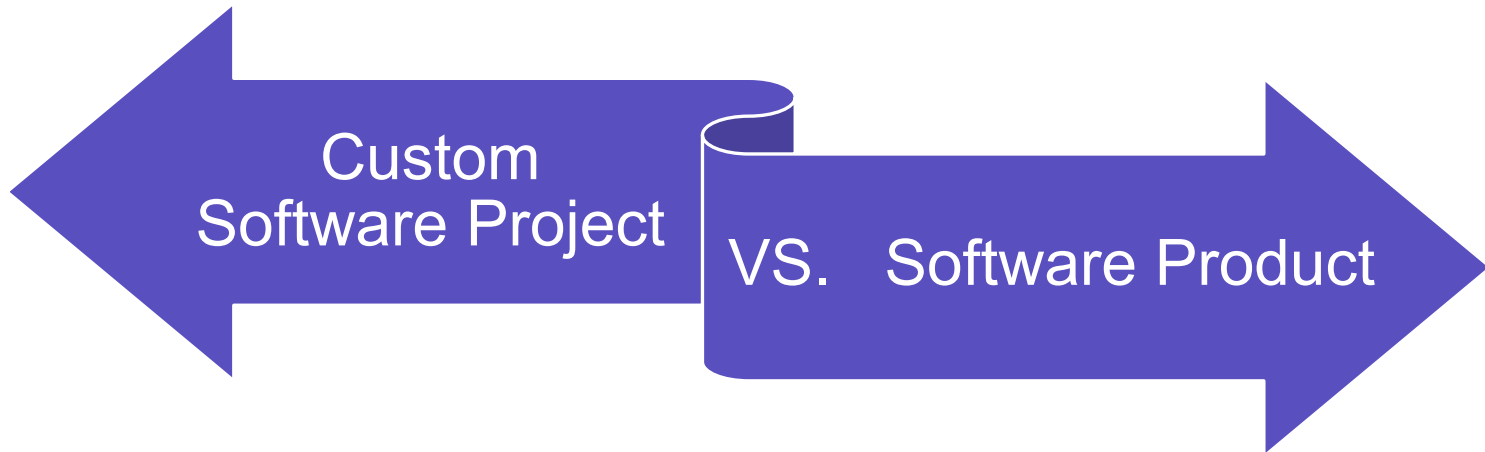
- The size of software development projects and teams.
- Geographically distributed software development teams.
- Deciding how software projects and teams are organized.

Lecture objectives

Understanding requirements elicitation in software engineering.

Skills in making software product visions and roadmaps.

Competencies to manage the development of a software product.



What is the difference between a project versus a product in:

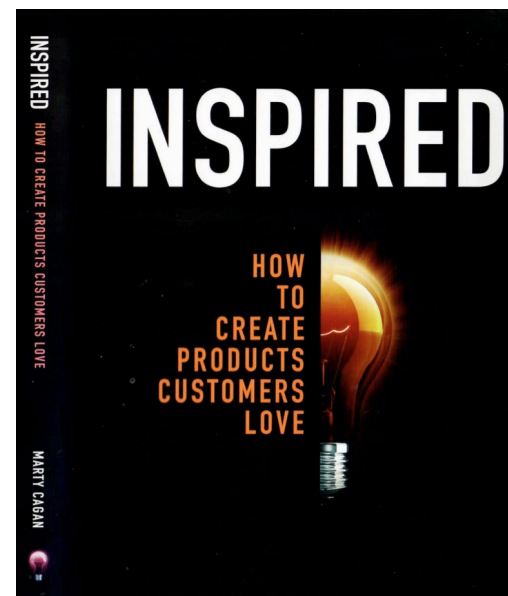
1. How many times is it delivered?
2. What is most in focus: verifying all requirements are implemented or validating that they are fit for use?
3. Which of the key activities in software engineering: Specification, design and development, validation, evolution, are considered?



Product Planning

A custom software project is unique $A \rightarrow B$

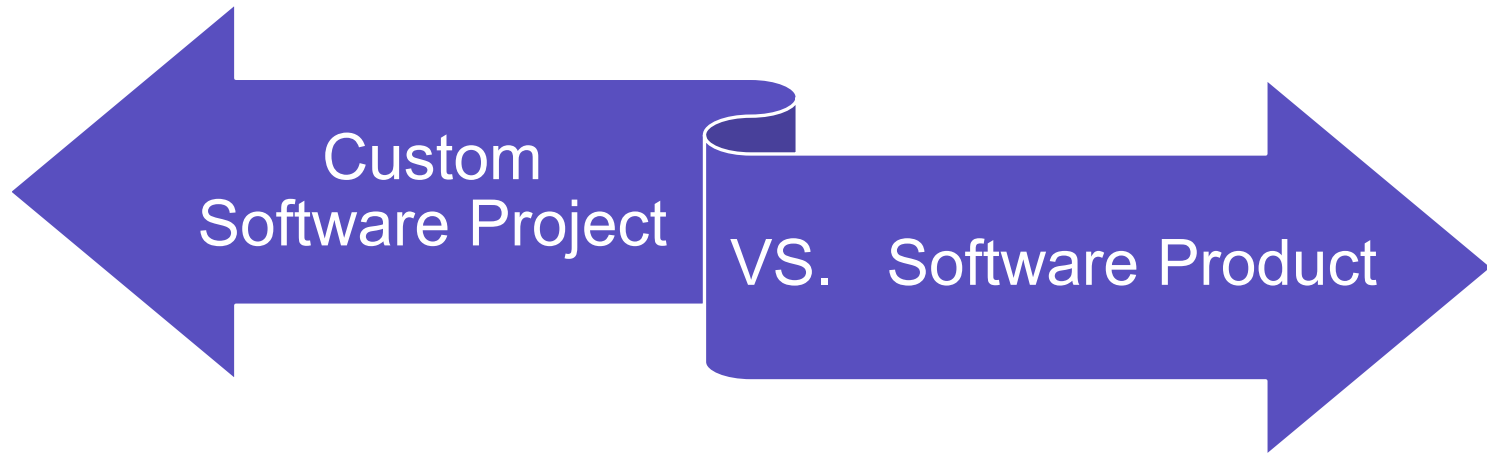
A product demands ongoing development $A \rightarrow \infty$



Succeeding with agile methods in software **product** teams:

1. Product manager is product owner
2. Product planning is shorter and rolling
3. Do design as part of backlog refinement
4. Design in small and independent chunks
5. Replace requirements docs with prototypes & user stories
6. Let the team chunk functionality into sprints
7. Socialize and communicate between team, PO and others
8. Product increments are released to users when sufficient functionality is available
9. Demo current state of product every sprint
10. Train people in agile

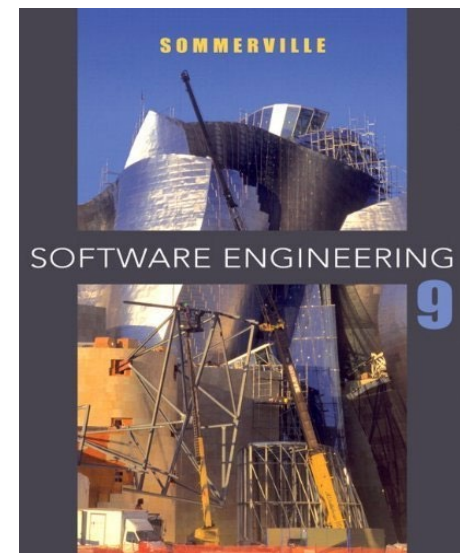




What is the difference between a project versus a product in how requirements are established from the understanding of needs and users:

1. When are requirements established?
2. How often are requirements adjusted?
3. What drives changes to requirements?



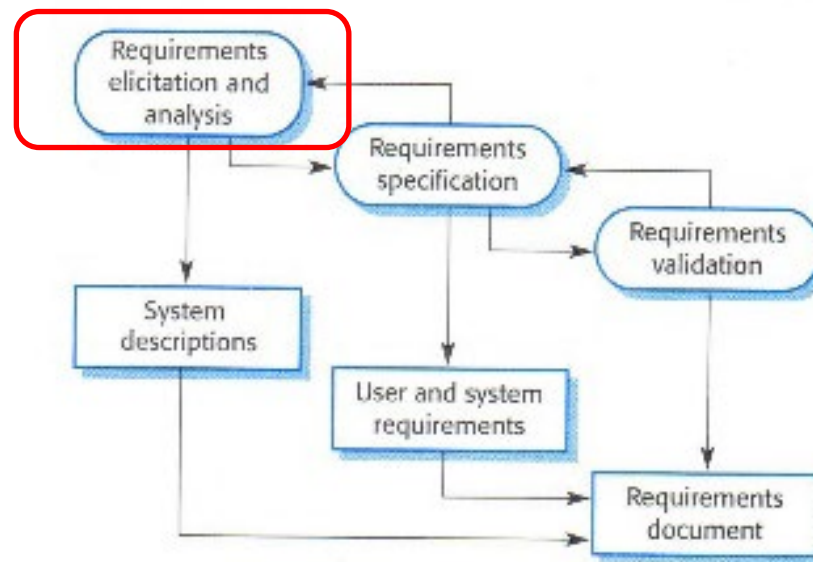


REQUIREMENTS ELICITATION (SOMMERVILLE)



Requirements Elicitation

- From Lecture 1: Elicitation is part of Requirements Engineering

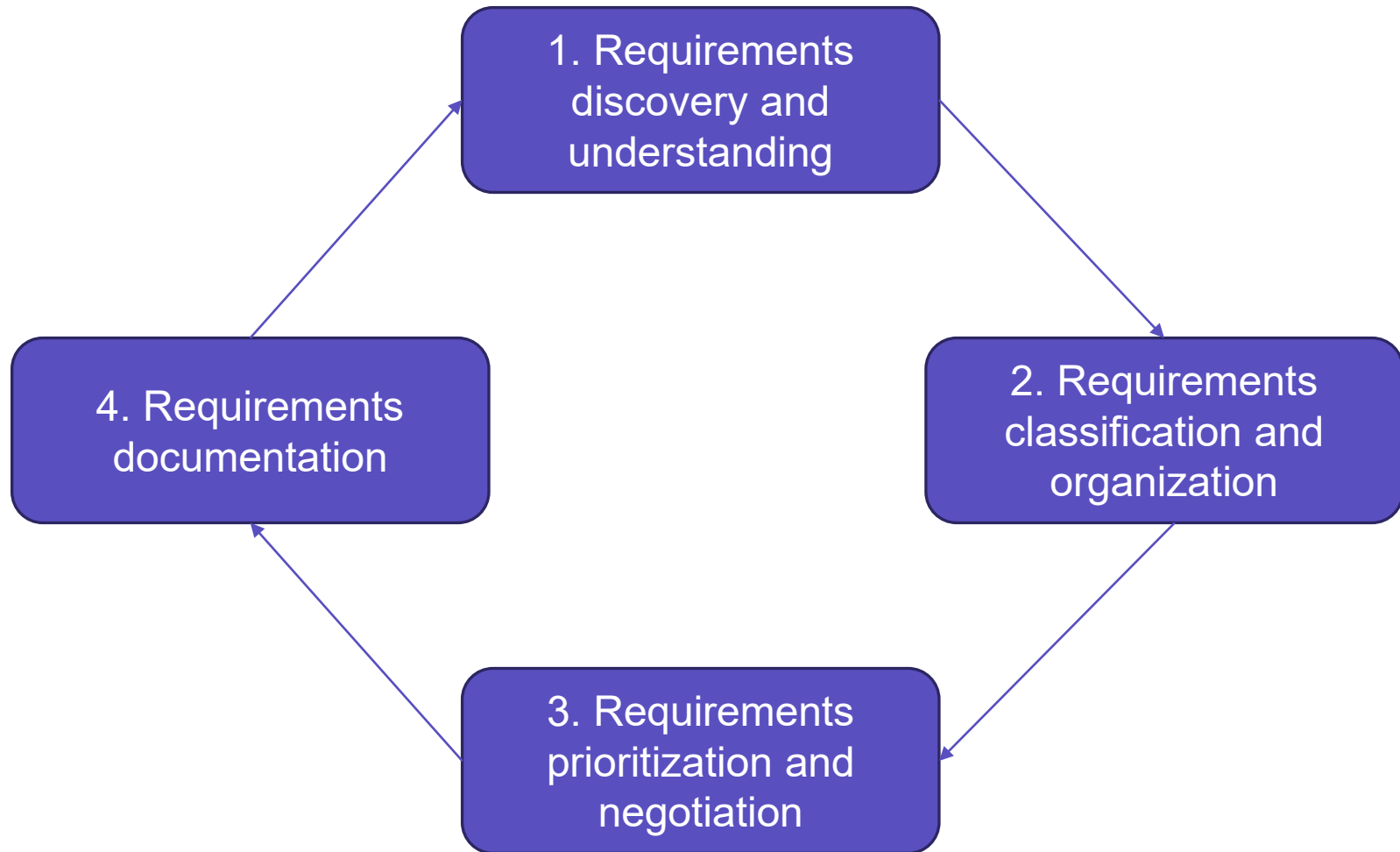


Requirements Elicitation

Requirements Elicitation is difficult because:

- Stakeholders don't know what they want
- Stakeholders use own language and implicit knowledge
- Different stakeholders with diverse or conflicting requirements
- Political factors
- Economic and business environment is dynamic

Requirement Elicitation and analysis process



Requirements Elicitation Techniques

Interview – Talk to people about what they do

- Closed interviews with predefined questions
- Open interviews with no predefined agenda



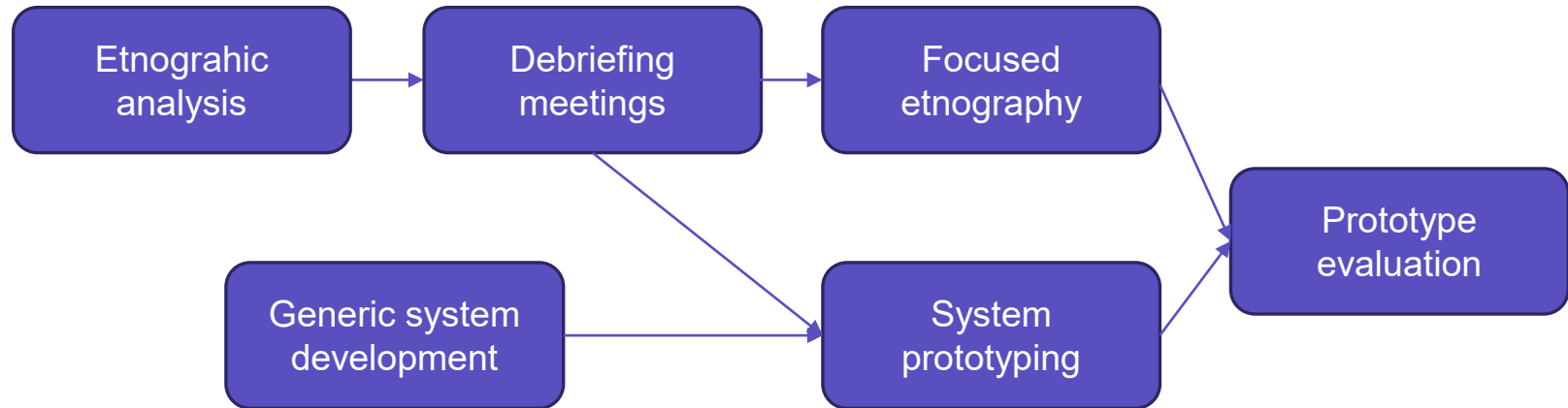
Observation or Ethnography – watch people do their job.

Good at:

- Observing how the work is actually performed
- Requirements derived from cooperation and awareness of other people
- Understand existing systems



Etnography and prototyping for requirements analysis



Etnography is not effective for discovering broader organizational or domain requirements or for suggesting innovation

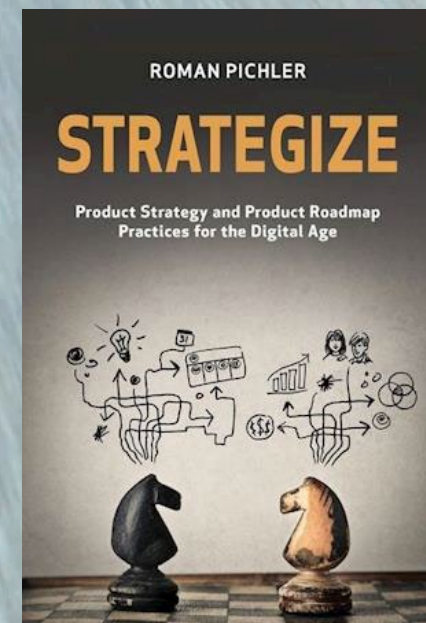
Stories and scenarios

How the system can be used for a specific task

A scenario may include:

- What the system and users expect when the scenario starts
- Normal flow of events in the scenario
- What can go wrong and how resulting problems are handled
- Information about other activities at the same time
- System state when the scenario ends

People find it easier to relate to real-life examples than abstract descriptions

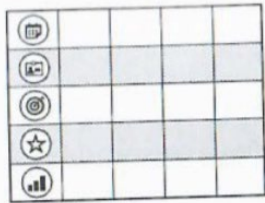


PRODUCT VISION AND ROADMAP (PICHLER)

Product roadmaps



PRODUCT ROADMAP



Strategic plan; describes how the product is likely to grow across several product releases.



PRODUCT BACKLOG

Tactical tool; describes the details, including epics and user stories, that have to be implemented to create one or more releases.

FIGURE 39: Product Roadmap and Product Backlog

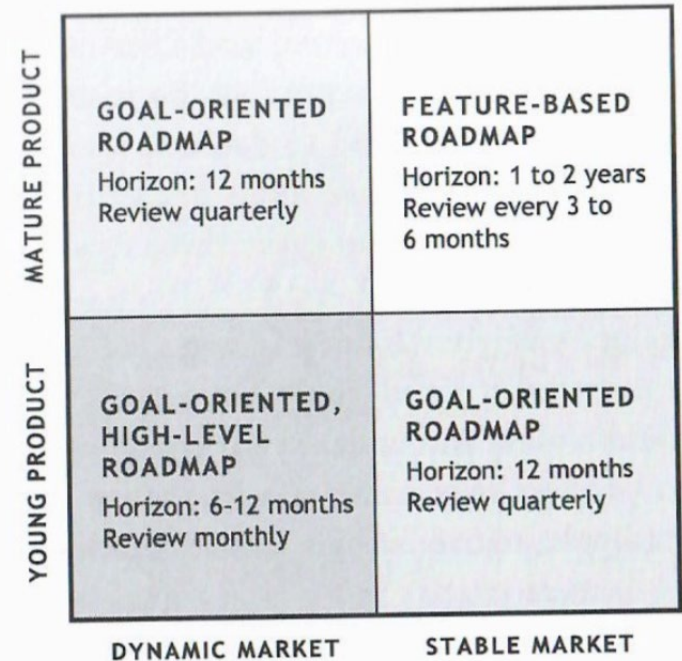


FIGURE 37: Roadmap Selection Matrix

PRODUCT VISION

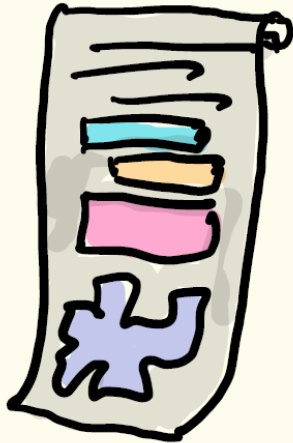
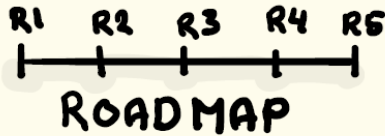
STRATEGY



OKR



VISION



PRODUCT BACKLOG



VISION

Your overarching goal for creating the product



TARGET GROUP

Market
Customers
Users



NEEDS

Problem
Solved
Benefit
Provided



PRODUCT

What is it
How is it
special
Can it be
created



BUSINESS GOAL

Company
benefits



Elevator Pitch

*For <target customer/user>
who <statement of need>
the <product name>
is a <product category>
that provides these <key benefits>
unlike <primary competition>
our product <is different in these ways>*








PRODUCT ROADMAP


VISION

R1 R2 R3 R4 R5
ROADMAP


PRODUCT BACKLOG

	RELEASE DATES OR TIME FRAMES
	THE RELEASE NAMES
	THE REASON FOR CREATING THE NEW RELEASE
	THE HIGH LEVEL FEATURES NECESSARY TO MEET THE GOALS
	THE METRICS TO DETERMINE GOALS HAVE BEEN MET










Group exercises

Exercise 1: Establish a Product Vision either for your semester project or an imaginary product (40%)

Exercise 2: Establish an elevator pitch (30%)

Exercise 3: How is your product launched? (30%)

 VISION Your overarching goal for creating the product			
 TARGET GROUP Market Customers Users	 NEEDS Problem Solved Benefit Provided	 PRODUCT What is it How is it special Can it be created	 BUSINESS GOAL Company benefits

	RELEASE DATES or TIME FRAMES			
	THE RELEASE NAMES			
	THE REASON FOR CREATING THE NEW RELEASE			
	THE HIGH LEVEL FEATURES NECESSARY TO MEET THE GOALS			
	THE METRICS TO DETERMINE GOALS HAVE BEEN MET			

Lecture objectives

Understanding requirements elicitation in software engineering.

Skills in making software product visions and roadmaps.

Competencies to manage the development of a software product.