



SUPPORT MEETING 2



Case study design

- Planning and documenting the
 - Why
 - What
 - and How of the case study
- 



Why

- To evaluate state-of-practice regarding product line use at the companies to be able to propose potential improvements

What

- BAPO or PLPA
 - Roles
 - Sources – interviews, document analysis
 - ...
- 



How

- Interviews
 - Questions
 - What to ask who?
 - Document analysis
 - Triangulation – comparing findings to documentation - strengthen the findings
 - New findings?
 - The idea is to get as good an understanding as possible to be able to propose suitable improvements
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Document analysis

- Findings based on more than one “perception”
- Process documentation
 - Roles & responsibilities
 - Activities
- Project documentation
 - Project artifacts – architecture, code, requirements, design etc.
- Example
 - From interview – “We don’t do scoping”
 - Process documentation – do they state that they do scoping?
 - Project documentation – are there any documentation of scoping from the project?

Starting the interview

- Present yourselves
 - We are from Chalmers and are taking a master's course in "Software product line engineering"
- Give a short description to the interviewee about what you're trying to do
 - Find suitable improvements
- Assure him/her that the results are anonymous



Context – Background questions

- Gathering information about the context
 - Company size
 - Number of projects/products
 - Size of projects
 - Experience of staff
 - Some context is given when using PLPA or BAPO
 - ...
- Get a smooth start to the interview so that everyone start feeling comfortable
- Grounds for proposing improvements



Evaluation framework

- BAPO
 - If the company have some product line approach
 - They have planned reuse or similar
- PLPA
 - If the company do not have planned reuse



BAPO

- Four aspects – Business, Architecture, Process and Organization
 - Questions to evaluate maturity of each
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BAPO-B “Business”

- Aspects
 - Identity
 - Vision
 - Objectives
 - Strategic planning
- Example questions
 - Do you decide on which products that should be included in the product line/reuse base?
 - How?
 - What aspects do you consider?

BAPO-A “Architecture”

- Aspects
 - Software product family architecture
 - Product quality
 - Reuse level
 - Software variability management
- Example questions
 - How much is reused between the products?
 - Do you have an architecture that is used in several products? How does it look? What are the parts?

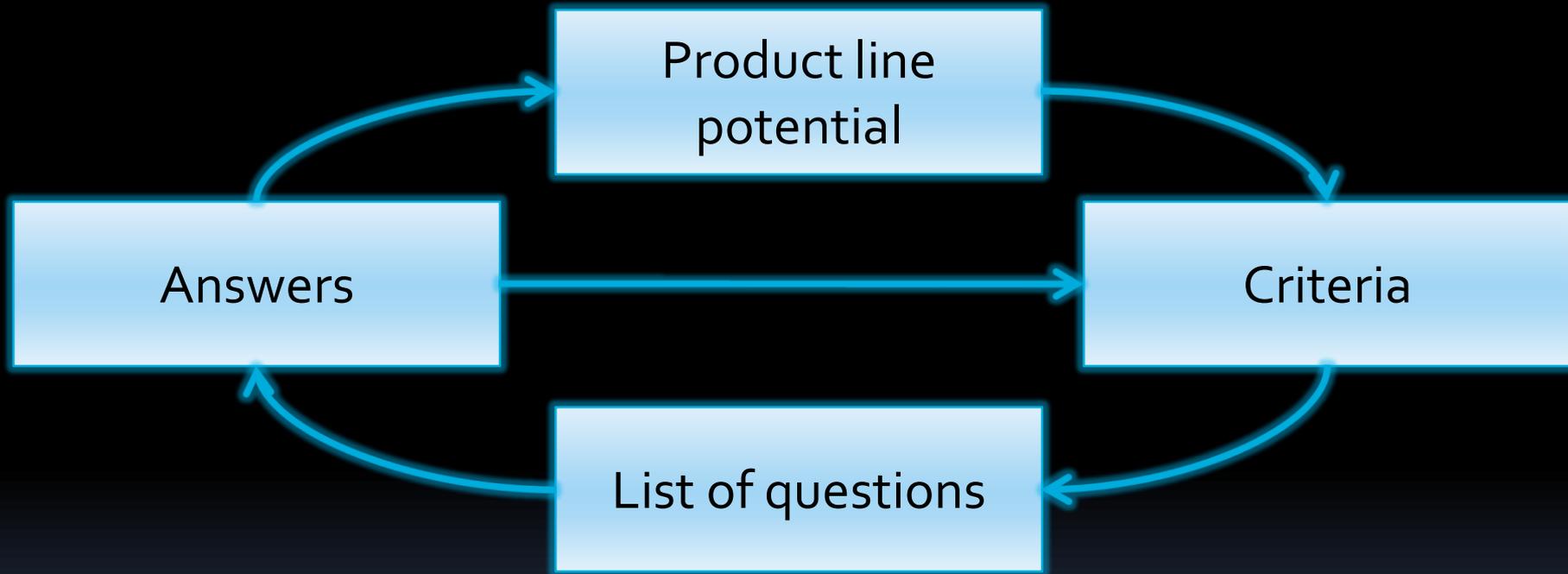
BAPO-P “Process”

- Aspects
 - Predictability
 - Repeatability
 - Quantifiability
- Example questions
 - How do you develop software? Do you have established practices?
 - Are they documented? Are they used?
 - Do you evaluate concluded project performance?
 - Do you measure process performance?

BAPO-0 “Organization”

- Aspects
 - Geographic distribution
 - Culture
 - Roles & responsibilities
 - Product life cycle
- Example questions
 - Do you have specific roles concerning large scale reuse?
 - What roles? What are their responsibilities?

PLPA





Criteria

- Main criteria
 - The business unit develops more than one product.
 - Products have common features.
 - Products have common qualities.
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Criteria cont.

- Inclusion criteria
 - The same part of software is used in more than one product.
- Supporting criteria
 - The business unit has quality problems.
 - The business unit has complexity problems.
 - The business unit expects increasingly differentiated products.

Criteria cont.

- Exclusion criteria
 - There is an immature, instable market for the products.
 - There is technological change.
 - The software is small; optimization will not be profitable.
 - The software development effort is negligible. It would be better to focus on other improvements.
 - New product development is too seldom.
 - The business unit develops specific, commissioned custom products.



Criteria cont.

- Additional information
 - the competitive situation



PLPA Examples

No	Question	Criterion	
Products			
1	Which products do you develop at the moment? When do they go into production?	excl	Immature instable market
		excl	Technological change
2	Which features do your products for one market segment have in common?	main	Common features
3			
4			
5			

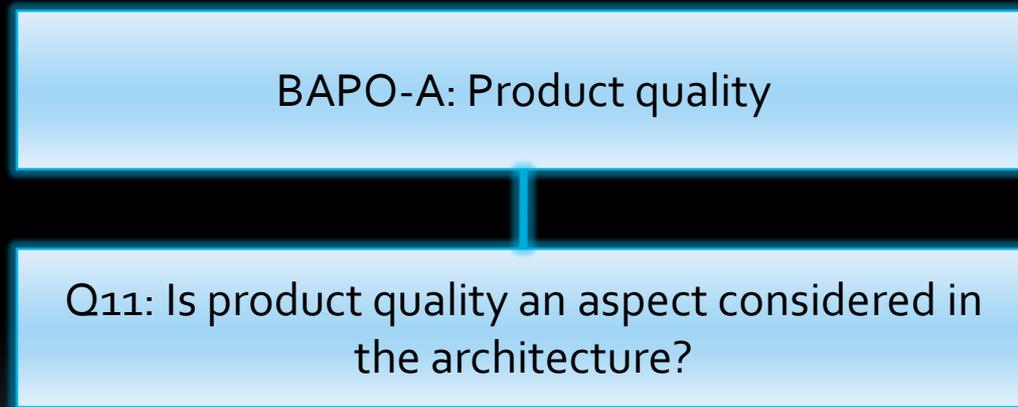


PLPA

- Add more criteria
 - Add more questions
 - Widen the scope a bit
 - Not just “no - product lines are not good for you” or “yes – product lines are good for you”
 - You should try to find out what could be improved at the company – more concretely
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Alignment

- The “how” of your design should be mapped to the “what”



Question	Mapping
Q11	BAPO-A:Product quality
Q12	BAPO-B: Vision

Alignment

- Have you covered everything?
- Are there any imbalance?

Question	Mapping
...	...
Q11	BAPO-A:Product quality
Q12	BAPO-B: Vision
...	...



Suggestions

- Read the articles
 - Can you find questions used before for this kind of evaluation?
 - Look at their references
- Keep it practical
 - How many questions can you cover in an interview
 - 50 – 1 per minute - might be OK
 - 200 – 1 per 15 seconds - might be too many