Maximizing Product Value Through Requirements Selection

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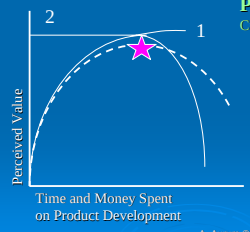
Introduction to the Value Based Approach

- The value based approach to software development promotes
  - **Alignment** of technical decisions with business strategy
  - **Sustaining** competitive advantage within the market to increase the business and customer value
  - **Multiple perspectives** involvement in creation of product, project and business value
- This talk is concerned with the decision making process when creating product value through requirements selection for release planning

Introduction to the Value Based Approach

- Some fundamental aspects of value are
  - **Product value**
    - Influenced by the quality attributes of the product and related to product cost
  - **Customer perceived value**
    - The benefit derived from the product and a measure of how much the customer is willing to pay and is influenced by customer expectations, needs, culture etc.
  - **Relationship value**
    - Created through the social relationships between the developer and the customer

Relationship Between Perceived Value and Time/Cost



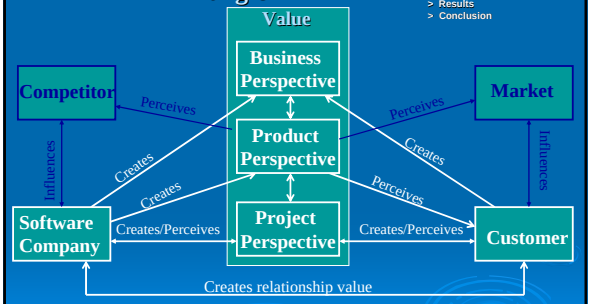
If
Perceived value > Price > Cost
Customer purchases the product

Ref: Browning (2003) On Customer Value and Improvement in Product Development Process, System Engineering 61(1):49-62

Challenges to Software Practitioners

- Value Creation
  - Value creation strategies are highly contextual
- Measuring Value
  - There are metrics used measuring technical performance; however the result is often a mismatch between product requirements, market and business objectives.
- Managing for Value
  - Requires sound understanding of the business, market and product strategy and structure of the social culture of the company.

Software Company-Value-Customer Triangle



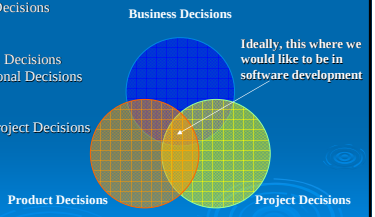
Alignment of Technical and Business Decisions

Outline
> Introduction to the Value Based Approach
> Challenges to Software P.. (3/4)
> Questions
> Results
> Conclusion

Perspective 1
Business decision ←→ Product Decisions
Product decisions ←→ Project Decisions

Perspective 2
Strategic Decisions ←→Tactical Decisions
Tactical Decisions ←→ Operational Decisions

Perspective 3
Pre-Project Decisions ←→ In-Project Decisions



RE Decisions Framework

(Ref: Engineering and Managing Requirements by Aurum & Wohlin, 2005)

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Perspectives on RE Decisions		Strategic Decisions	Tactical Decisions	Operational Decisions
Business level decisions	Pre-project RE	* business strategy * competitiveness * technology * marketing * economic value of the product	* pricing * planned benefits of the product	* tradeoff between technology push and market-pull
Product level decisions		* software product road mapping * packaging requirements for a specific release * software product architectures	* engineering decisions * personnel management	* change management * requirements volatility, e.g. whether a particular requirement is subject to syntactic or semantic change
Project level decisions	In-project RE	* project planning * feasibility study * recruiting people	* project management * quality control	* validation in terms of which requirements will go into the next release

Questions

Outline
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- Q-1: How is value-based requirements engineering perceived by the software development industry?
- Q2: How does the software industry conduct release planning in order to create product value?
- Q3: Which criteria do software practitioners apply to the decision making process when selecting and prioritizing requirements for a software project/release?
- Q4: To what degree do the perspectives of the major stakeholders influence the requirements selection and prioritization process?

Decision Criteria and Stakeholders' Value Perspectives

Outline
> Introduction to the Value Based Approach
> Challenges to Software P..
> Questions
> Results (1/3)
> Conclusion

Business Perspective	Project Perspective	Product Perspective
Competitor	Support, education & training	System impact
Requirements issuer	Development cost benefit	Complexity
Stakeholder priority of requirement	Resources & competencies	Requirements dependencies
Function promised or sold	Delivery date & calendar time	Evolution
Volatility		Maintenance

Results

Outline
> Introduction to the Value Based Approach
> Challenges to Software P..
> Questions
> Results (2/3)
> Conclusion

- Q1 - Perception of value-based requirements
  - The creation of software product and customer value is not well understood in the software industry.
- Q2 - Release planning in industry
  - Release planning is ad hoc in many cases
- Q3 – Decision criteria when selecting and prioritizing requirements
  - Product maturity, market place, development tools and processes influence the importance of different criteria in selecting requirements
- Q4 - Influence of major stakeholders' perspectives
  - Business perspective overpowers project and product perspective

Results

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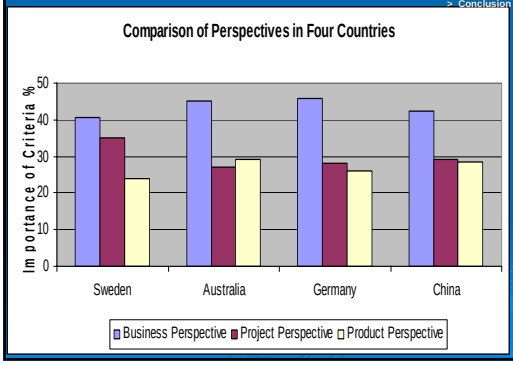

Conclusion

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- There is no ***one-size-fits*** all approach to product and customer value creation
  - Value creation in not a *one-off event*
  - Having a good strategy for value creation just the beginning
- **Alignment** of technical decisions with business strategy continues to be a challenge
  - It is necessary to provide timely feedback between business and technical level decision makers and to support communication between them
  - Technical changes, for example re-structuring of parts of the system, have to be motivated as a business case