



Aalto University
School of Business

Implementation Strategies in Software Development

Case XBRL

Research Question and Objectives

- “The research problem is to identify and describe the ways in which companies approach implementing inter-organizational functionalities into their software products and services and to identify the factors that affect their choice of a software implementation strategy.”

Research Question and Objectives

- How companies approach implementing software functionalities in inter-organizational context?
- Why do they choose a given strategy?
- Objectives:
 - Identify different implementation strategies
 - Identify factors that affect the selection of a strategy

Research Method

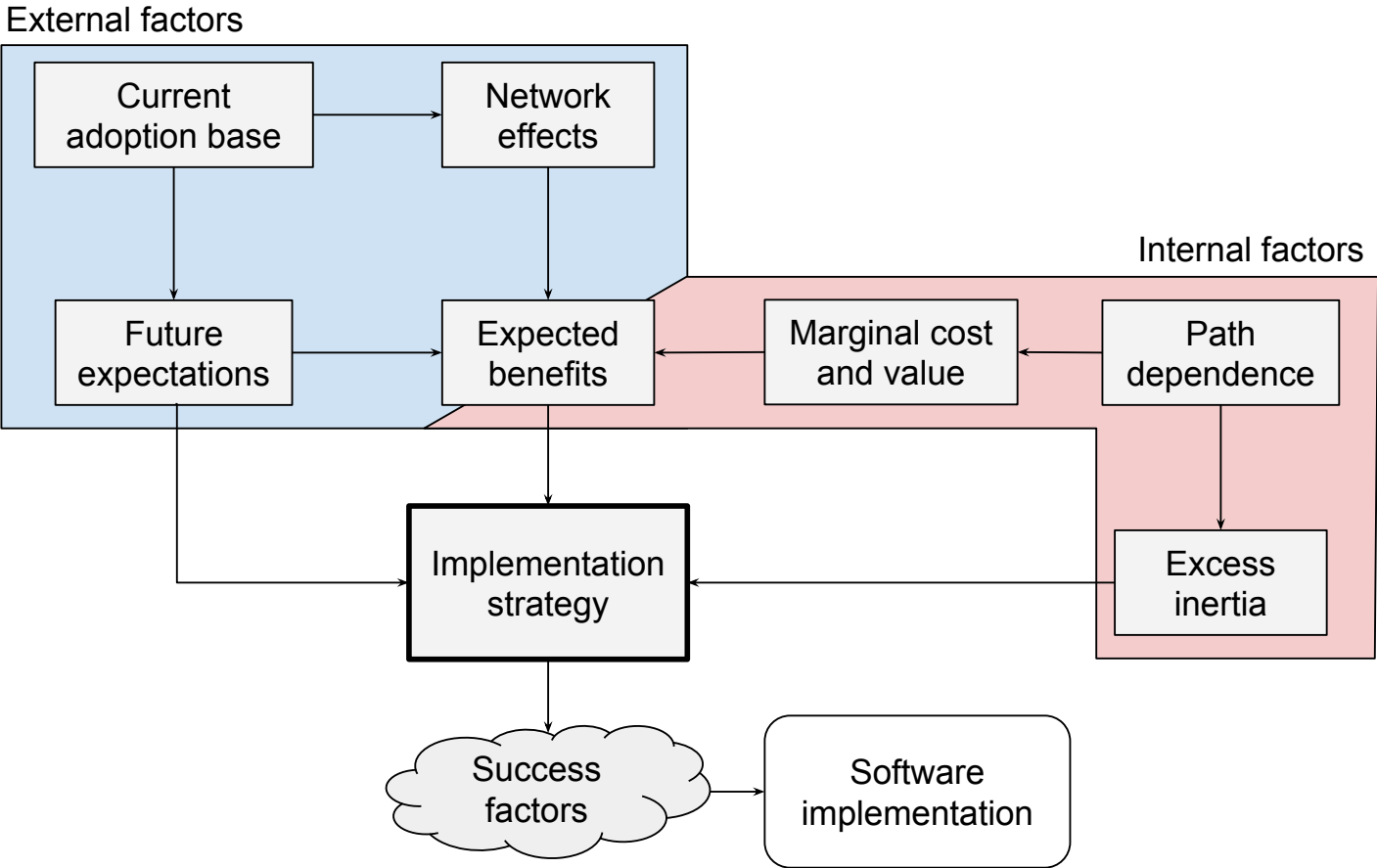
- Multiple-case study
 - Interviews with four companies that are implementing XBRL/SBR into their software products

Company	Characteristics	Product
Company A	Accounting software vendor, part of an international concern	Cloud AIS, sold directly to customers
Company B	Large national accounting firm	Internally used AIS
Company C	Big global technology and consulting corporation	Customizable reporting tool, packaged software
Company D	Small startup, cloud software vendor	Cloud AIS with focus on digitalization, sold directly to customers

Implementation Strategies from Literature

Implementation strategy (Garbellotto)	Adoption level (Garner et al.)	Initial cost	Long term cost	Use of external resources	Benefits	Limitations
Bolt-on	Low adoption	Low	High	High	Immediate results	High maintenance, negative ROI in the long run
Built-in	Medium adoption	Medium	Medium	Medium	Maintainability, positive ROI	Limited capabilities
Deeply Embedded	High adoption	Medium	Low	Low	High added value	Complex and time consuming transition

Theoretical Framework in Brief



Success Factors for Software Projects

- Strong management support for the project
- Good requirements planning
- Sufficient communication between stakeholders, including the users
- Adequate software development practices
- Skilled team members

Results: Implementation Strategies

Company	Strategy	Input for XBRL component	Level of implementation
Company A	Bolt-on, external component for XBRL translation	SBR code set	Proof-of-concept
Company B	Bolt-on external component for XBRL translation	SBR code set	Limited proof-of-concept
Company C	Integrated XBRL component that imports new taxonomy	Mixed input	In production
Company D	Integrated part of the application	Internal database	In production

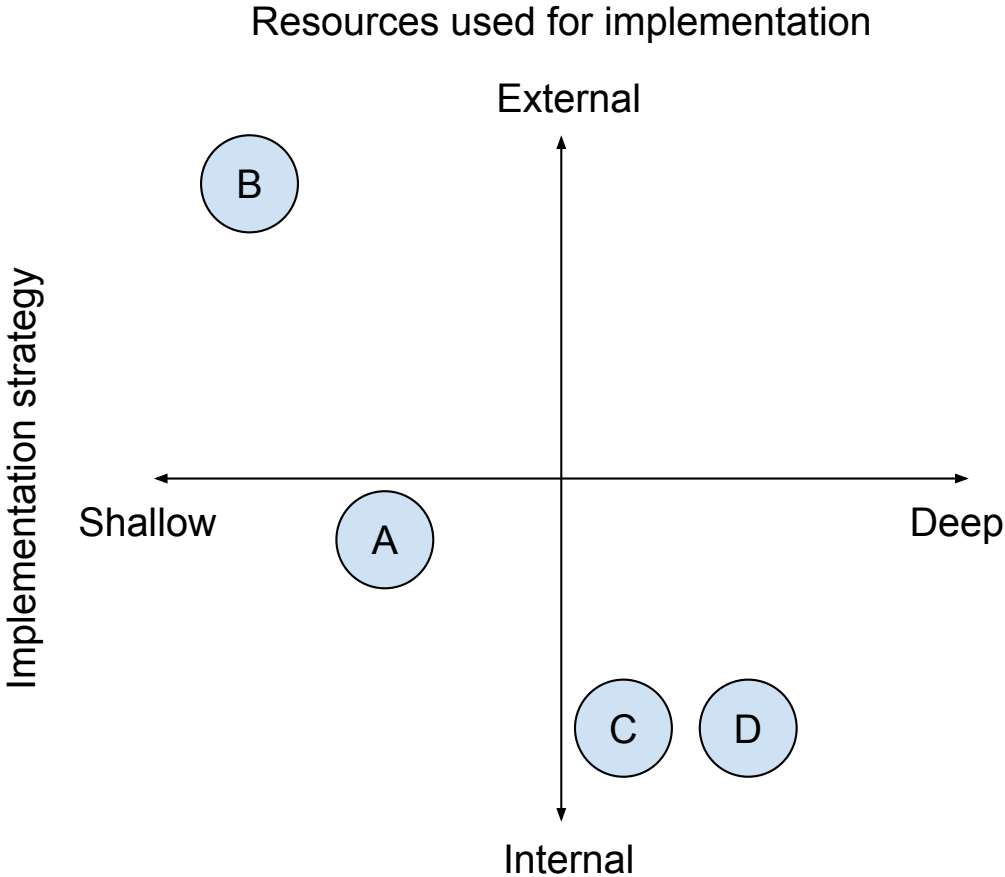
Motivation Behind Strategy Decision

Company	Motivation for strategy decision
Company A	Uncertainty of the future benefits of XBRL/SBR reporting
Company B	Deliberate wait-and-see decision
Company C	Need to support functionality in multiple countries
Company D	Embracing digitalization

XBRL Implementation Teams

Company	Implementing team/individual
Company A	Summer trainee
Company B	External group of students
Company C	In-house and external XBRL experts
Company D	In-house software development team

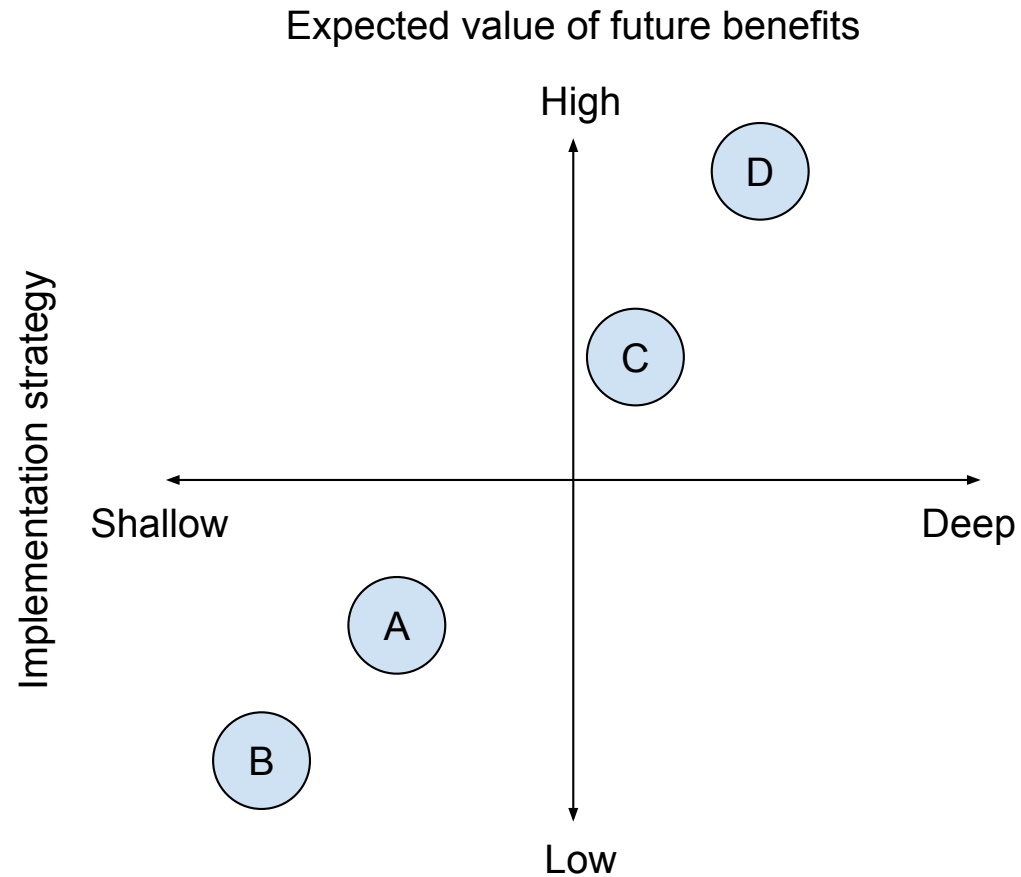
Use of Internal vs. External Resources



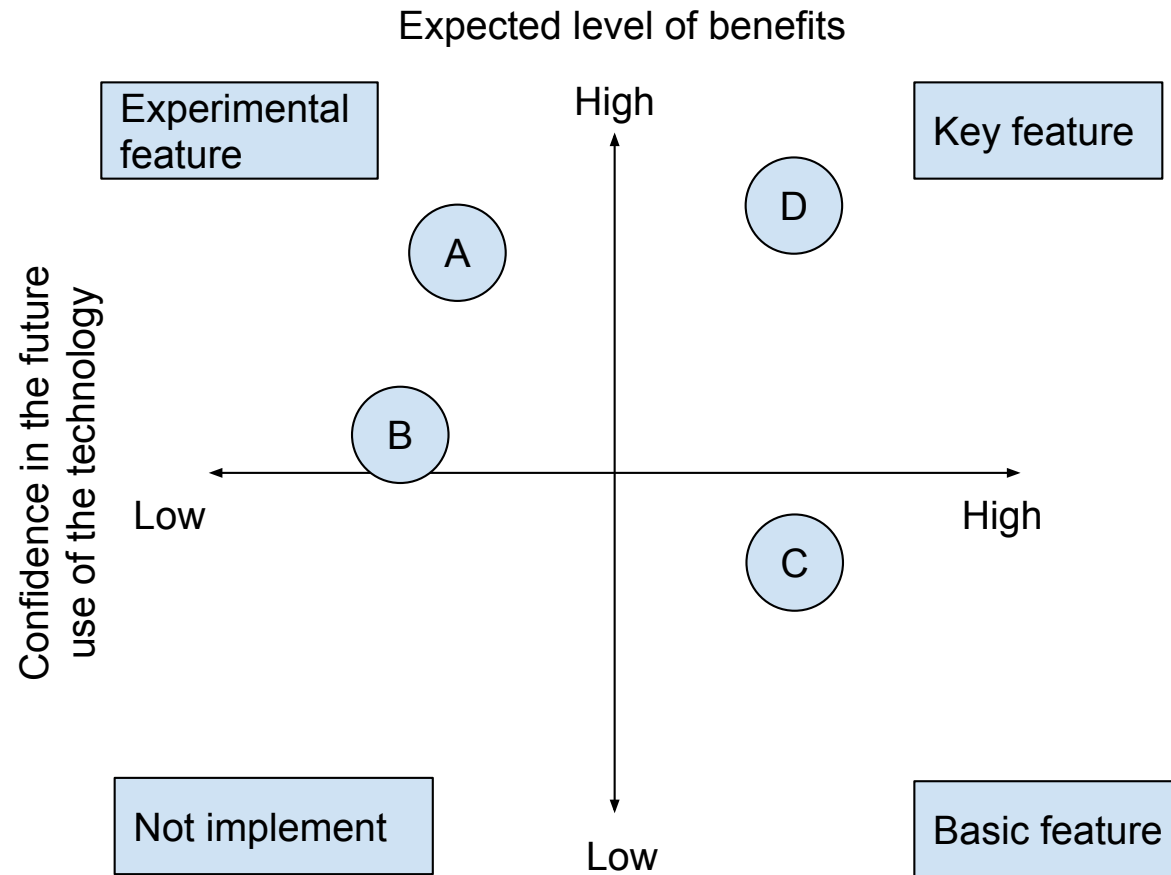
Difficulties and Success Factors

Company	Difficulties	Success factors
Company A	Complexity of XBRL format	Accounting domain knowledge
		External support with XBRL
Company B	Limited communication between stakeholders	Accounting domain knowledge in implementation team
	Miscommunication issues	External support with XBRL
	Complexity of XBRL format	
Company C	None mentioned	Being able to get contribution from both in-house and external XBRL experts
Company D	Complexity of XBRL format	External support with XBRL
	Challenges with fitting SBR code set as the chart of accounts	Being able to use an offline XBRL validator

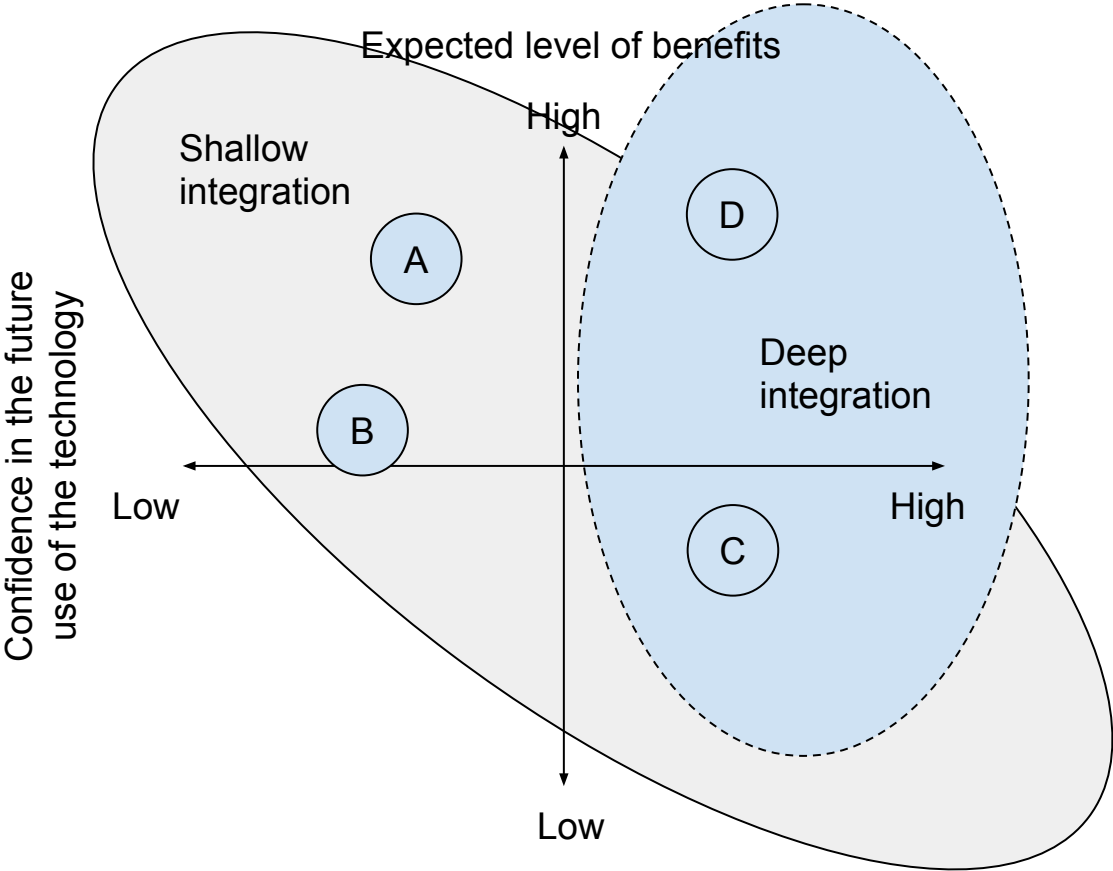
Implementation Strategy and Expected Value of Future Benefits



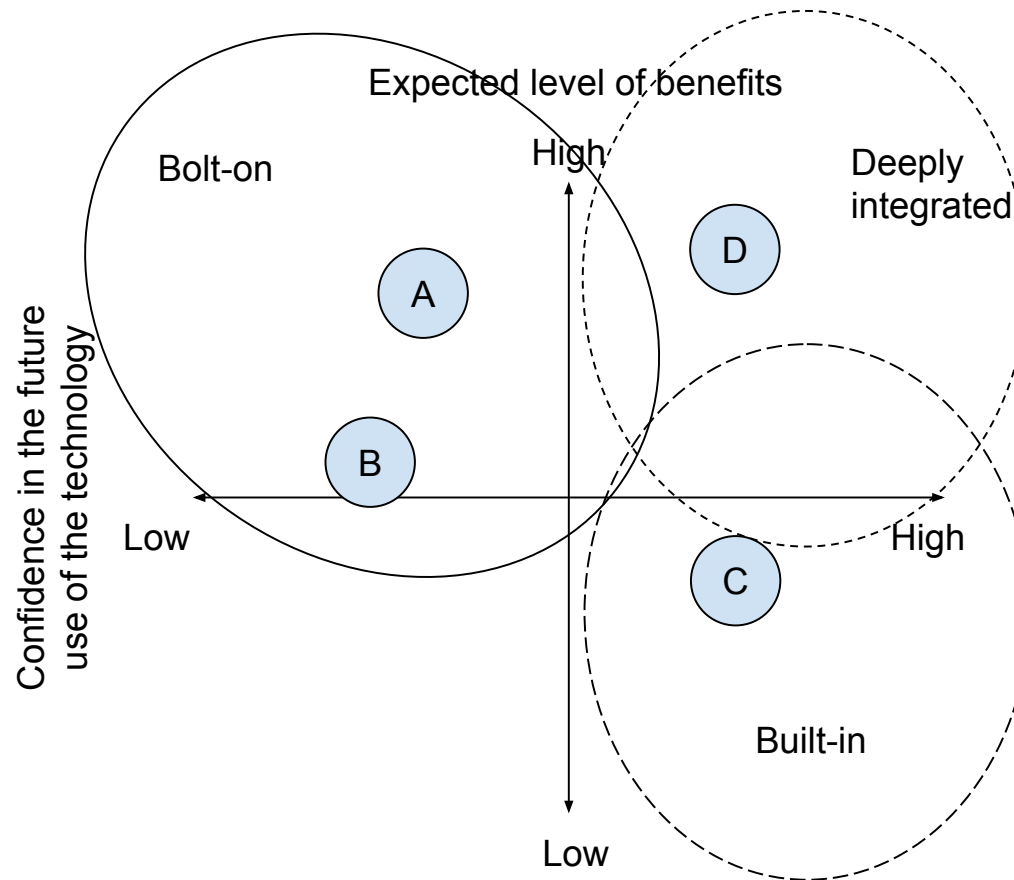
Analysis: Expected Level of Benefits and the Confidence in the Future of the Technology



Software Implementation Integration Levels



Software Implementation Integration Categories



Conclusions

- The results of the case study show significant differences in the ways in which companies approach similar software implementation projects
- The identified internal and external factors affect software implementation strategy selection in inter-organizational projects
- Uncertainty of the future adoption, development, and use of an inter-organizational technology is a major determining factor in the implementation strategy decision

Managerial Findings

- When facilitating an inter-organizational technology:
 - Focus on mitigating uncertainty
 - Highlight network effects

Questions