



ICT-onderzoek Platform Nederland

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Knowledge Management of

Global Work



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Agenda

- Problem Definition and Research Question
- Knowledge Management of Global Projects
- Research Approach
- Differences between Offshore and On Site IS Development
- Offshore capabilities: DSDM and RUP compared
- Conclusions



Problem Definition

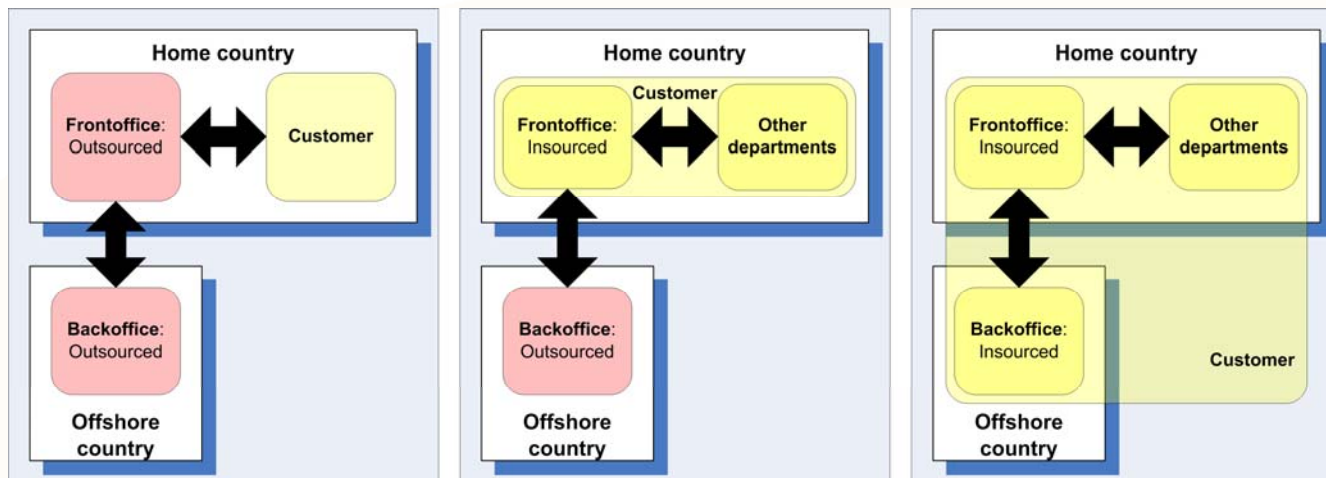
Information Systems Development Projects with an offshore component are, compared to “on shore” projects, relatively unsuccessful, i.e. run out of time/budget, do not deliver the quality such as expected and/or promised or are not finished at all.

(see, e.g. Conchuir, Holmstrom, Agerfalk & Fitzgerald , 2006)

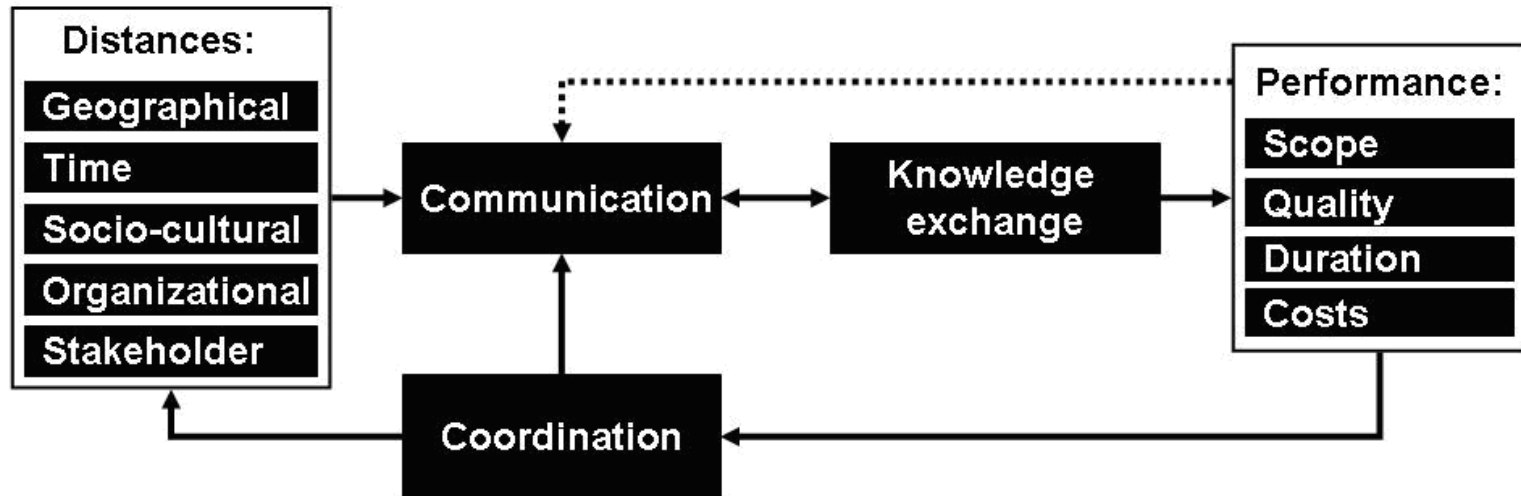
An estimated 70% of projects with an offshore component “fail” (study by University of Utrecht & Capgemini, 2007). This is even more than the failure rate of regular projects.

Distance seems to be the main cause for this

Scope:



Knowledge Management of Global Projects



See: Matthias Fabriek, Mischa van den Brand, Frank Harmsen & Sjaak Brinkkemper (2007). De juiste balans voor succesvol offshoren. *Informatie*, 49(3) pp. 48-53.

Research Question

Can (agile) Information System Development Methods help out?

— **What are the differences between projects with and without offshore components?**

— **What are the risks of these differences for the project?**

— **Which risk mitigation measures should be applied?**

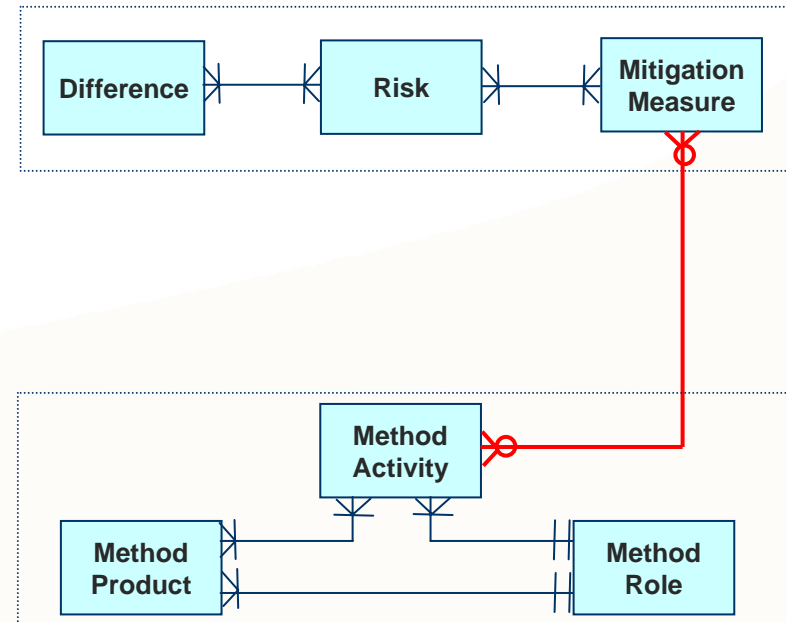
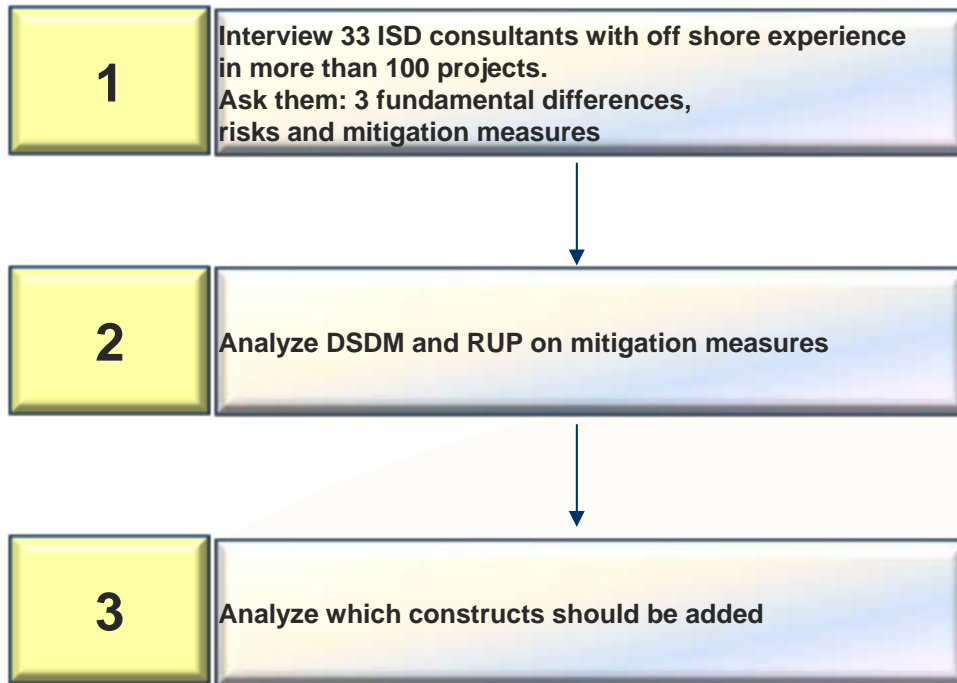
— **Are these measures incorporated in two popular (agile) ISD methods?**

— **If not, how should these methods be adapted?**

Research Approach - Fundamentals

- Based on **Method Engineering**: The IS research discipline concerned with the analysis, comparison, adaptation and construction of (situation-specific) development methods (Kumar & Welke, 1992)
- Central concept is the **method fragment**: any IS development method or coherent part thereof (Harmsen, Brinkkemper & Oei, 1994):
 - Product Fragments
 - Process Fragments
 - Role Fragments
- Two agile ISD methods are investigated:
 - DSDM: Dynamic Systems Development Method
 - RUP: Rational Unified Process
- Agility being defined as having a quick resourceful and adaptable character, focused on managing risk and time by applying requirements prioritization, short time cycles, time boxes, prototyping, testing throughout the project, version/configuration management and early involvement of important stakeholders

Research Approach - Steps



8 categories of differences + risks

- **Socio-Cultural and Language**
 - Management of Expectations
 - Notions and terminology
- **Geography**
 - Travel
 - Mandates and Responsibilities
- **Time**
 - Synchronisation
- **Control / Organization**
 - Reviews and Inspections
 - Process Maturity
- **Technology**
 - Platforms
- **Stability**
 - Politics
 - Corruption
 - Turnover
- **Security**
 - Privacy
 - Intellectual Property
- **Legislation**
 - Litigation
 - Contracts

Mitigation Measures – Some Examples (1)

Difference	Risk	Measure	RUP	DSDM
Culture	Expectations between client and supplier do not match	Discuss cultural differences and agree how to handle them (cultural risks mitigation plan). [1]	+	++
		Record client-supplier agreements. [2]	--	--
		Review and inspect products. [3]	++	++
		Version control of all documents concerning agreements about products to be delivered. [4]	+	+
		Version control of all products delivered by the supplier. [5]	++	++
	Other notion of “Quality”	Make the requirements concerning quality explicit and discuss them with the supplier. When is good, good enough? [6]	++	++
		Version control of all agreements concerning quality requirements. [7]	+	+
		Review and inspect products. [3]	++	++
		Agree test approach for all products. [8]	+	+
		Agree on competences of the staff involved in the project. [9]	O	O
	Issue and Change Management do not function due to misunderstandings between client and supplier	Clarify terminology – what is an issue? [10]	+	--
		Agree on issue and change management, communicate procedure. [11]	++	-
		Create intercontinental “safety net”, besides local escalation procedures. [12]	O	--
	Agreements fail to be met	Agree on planning and delivery of products and services. [13]	++	++
		Agree on penalties. [14]	++	--
		Create incentives if agreements are met. [15]	++	--
Implement Change Management procedure. [16]		++	-	

- ++ = Measure fully incorporated
- + = Measure incorporated, but not specific enough
- O = Measure partially incorporated
- = Measure to some extent partially incorporated
- = Measure not incorporated

Mitigation Measures – Some Examples (2)

Difference	Risk	Measure	RUP	DSDM
Control	System development process of the client is poorly attuned to the process of the supplier	Select the supplier based on process maturity and client process fit. [28]	--	+
		Provide mutual training and coaching, to understand each others processes. [29]	--	--
		Agree on the interfaces and mappings in the processes. [30]	+	++
		Record the quality requirements for the products constituting the interfaces. [31]	+	++
		Agree on process changes during the project. [32]	--	--
	Client does not have sufficient grip on the supplier	Review and inspect products. [3]	++	++
		Liaison officers of the client at the supplier's site. [33]	--	++
		Implement a "demand management" role, managing the supplier. [34]	--	--
		Deliver frequently plans and progress reports. [22]	++	+
		Jointly implement a measurement tool to indicate whether agreements are met. [22]	++	+

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Offshore capabilities of DSDM and RUP

- Advantage of such agile methods:
 - Risk-driven
 - Iterativeinstead of implementing a lot of controls in a project with associated overhead

- And:
 - Human interaction (workshops, review sessions, etc)
 - User involvement
 - Prioritization
 - Collaboration and mutual trust

- Additional method fragments required:
 - Schemes describing responsibilities of on site and offshore roles
 - Software Architecture related processes, products and roles
 - The role *Liaison Officer*
 - The role *Contract Manager*
 - Security and Legal aspects, especially in Testing
 - Cultural and cross-boundary risks considered by Risk Management

Conclusion

- Agile methods, and DSDM and RUP in particular, are useful in an offshore context
 - They tend to shorten stakeholder and organizational distance through an iterative risk-driven approach
 - They tend to focus on mutual trust
 - Therefore, co-ordination and control seem to be less necessary

- They are, however, not the silver bullet to
 - Geographical, socio-cultural and temporal distance unchanged
 - Room for improvement:
 - Responsibilities on site vs offshore
 - Software Architecture (DSDM)
 - Liaisons and bridgeheads
 - Contractual, legal and security
 - Cultural risks