Leveraging Architecture

Service Engineering as a Next Challenge

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manager networked enterprises

Networked business
Interacting World
Business process modelling
Originator of ArchiMate

Service Innovation EU Expert Panel
TUe / University of Twente / Uni Oldenburg
Initiator Service Innovation and ICT program

E-business engineering
Investing in ICT driven innovation together
Sharing risk, cost and knowledge
Leading to impact for people, economy and society

Novay networked innovation

Innovators in NL say…

“Customers and suppliers should be involved in innovation.” 80%

“Outside knowledge is essential in innovation processes.” 85%

“ICT is an important driver of innovation.” 80%

“Inspiration in innovation is found outside the borders of my sector.” 85%

“the Netherlands lead in ICT driven innovation.” 13%

Market survey NewCom Research & Consultancy 2009 on behalf of Novay
Novay corporate profile and clients

- Turnover 7 million euros
- 50 business partners, from IBM to Vodafone
- 10 knowledge partners, from TU Delft to Institut für Rundfunktechnik (IRT) in Germany
- 50 researchers and engineers, from ICT to psychology
- More than 40 projects per year

In the previous century...

- Business process re-engineering in the late eighties
  - Starting as a hype (Hammer and others)
  - Quickly moved to the down slope of the hype cycle
- Business process re-engineering in the nineties
  - Well-accepted, well-understood, reasonably well supported
  - From business process redesign to business process re-engineering
- E-commerce / e-business in the nineties
  - Starting as a hype
  - Disillusions with the internet bubble in 2000
- Architecture as a panacea or bureaucracy?
Four illustrating cases

Collaboratory
• virtualising high-tech resources and people
• higher quality as well as speed of analysis

Voogd & Voogd
• insurance intermediary exploiting its position
• green-field IT
• full-service provider to other intermediaries

Philips Direct Life!
• personal coach
• uses activity monitor
• technology plus service

Open Health Hub
• cloud health data service
• open supplier to insures
• social or commercial?

Essential components…

• Customer service levels are important
• Process focus
• ICT as an crucial component
• Performance and effectiveness
Service engineering specific...

• Enterprise or network focus

• Introvert or extravert attitude

Service engineering specific...

• Who is the customer / where does control reside?

• What relationships to consider?
  • Customer / provider
  • Partner
  • Competitor
  • Enabler
## Service engineering vs. business process engineering

### Service engineering
- Network is the starting point
- Who *is* the customer?
- Many stakeholders and limited joint interests
- Many different relationships
- Synchronising product and processes throughout chain
- Opening internal functions
- ICT support interaction between enterprises
- Value chain application integration

### Business process engineering
- Enterprise is starting point
- Clear customer
- Single stakeholder, single interest
- Stakeholder/customer relation
- New products in processes and systems of enterprise
- Hiding internal functions
- ICT aimed at ones own processes
- Enterprise Application Integration

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### The value of Enterprise Architecture
Context enterprise architecture

- Business and ICT become closer
- Ever higher demands on ICT: complexity, flexibility
- Many changes, rapid time-to-market required
- Management & control difficult
- Opening up of organisations
- Architecture as a tool
  - for communication
  - for governance
  - for innovation
  - for design

But, not everybody agrees on this...
Context enterprise architecture

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Enterprise Architecture: Holistic view
Role of Enterprise Architecture

- Vision
- Mission
- Strategy
- Goals: as is, to be
- Operations: products, processes
- Actions: enterprise architecture, domain/aspect architectures
- Culture: leadership, people

Model of Venkatraman: IT induced transformation

- **Evolutionary Levels**
  - One: Localized exploitation
  - Two: Internal Integration
  - Three: Business Process Redesign
  - Four: Business Network Redesign
  - Five: Business Scope Redefinition

- **Revolutionary Levels**

Range of Potential Benefits

High

Low
Service Orientation

Service
- Unit of externally available functionality
- Offered via clear interfaces
- Relevant for the environment

Web services as a prominent technological example
Services are key

Service-innovation value chain

Hansen & Birkinshaw, HBR
The problem in service innovation

- Fast changing customer demands. Staying in control is difficult, at the expense of enormous effort
- Service innovation requires a deep understanding of the current situation, but also the ability to challenge
- Few organisations have the ability to innovate next to operational excellence
- An ambidextrous organisation (O’Reilly) is crucial for survival in the long term – the need for service engineers
“It is not the strongest of the species that survive, nor the most intelligent, but the one that is most responsive to change.”
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| Percentage MTH's | 25% | 53% | 44% | 34% | 25% |

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Core model based engineering

"Informalise"  Enhance

Formalise

Key Activities  Value Proposition  Customer Relationships

Key Partners  Customers

Costs  Key Resources  Channels  Revenue

drawings by JAM
STOF Business model framework

MARKET DYNAMICS
- e.g. changing customer demands, krediet crisis

BUSINESS MODEL

SERVICE DOMAIN
- Value proposition
- target group

TECHNOLOGY DOMAIN
- Functionality required

FINANCIAL DOMAIN
- Cost structure
- Profit potential

ORGANIZATION DOMAIN
- Structure of value network

TECHNOLOGICAL ADVANCEMENTS
- e.g. Ambient awareness

NETWORK VALUE
- e.g. Revenues

CUSTOMER VALUE
- e.g. Ease of use, costs, experience

CHANGES IN LEGISLATION
- e.g. Antitrust and privacy legislation

Business Model Stress Testing

Business model design

Business model testing

Business model roadmap
A networked enterprise model

Building upon ArchiMate, STOF, Business Model Generation, TOGAF, ArchiValue, GigaPort
A networked enterprise model

Service network

Service System
- Product
- Role
- Business Actor
- Stakeholder
- Value proposition
- Goal

Service System Relationship
- Channel
- Flow
- Key Partner
- Customer Relations

Service User
- Customer Segments

Program

Plateau

Information Model
Service engineers: manager, engineer, consultant

- ... have the responsibility to make, scale up or improve service systems, or parts thereof

- ... use methods, techniques and tools to design, analyse and build for change

- ... to add value by aligning viewpoints, design interests and possibly conflicting demands in the system
The T-shaped professional

Consequences for service engineers

- Create the ability to have an overall view, without losing contact with details
  - Enterprise architecture creates stable basis for flexibility
  - "Internet beyond OSI"
- Design systems, not components
  - Do not copy system engineering / software development
  - Not only manage, but design and construct
- Multidisciplinarity as a way of thinking as well as a way of working
  - T-shaped professionals
  - Link tools, models and methods
  - Design & culture in contact with technology
Service engineers – Disciplined collaborators with service system viewpoint

Novay – networked innovation

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