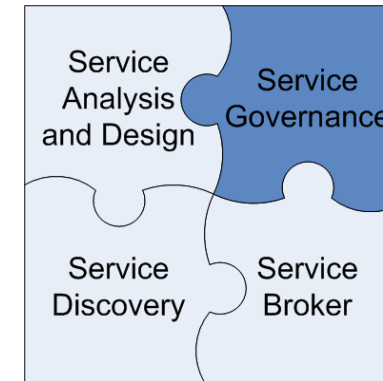


Measurement Framework for SOA Governance

Stefan Winkens

BPM seminar, 7 February 2008

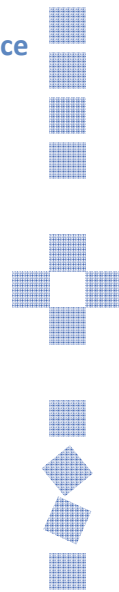
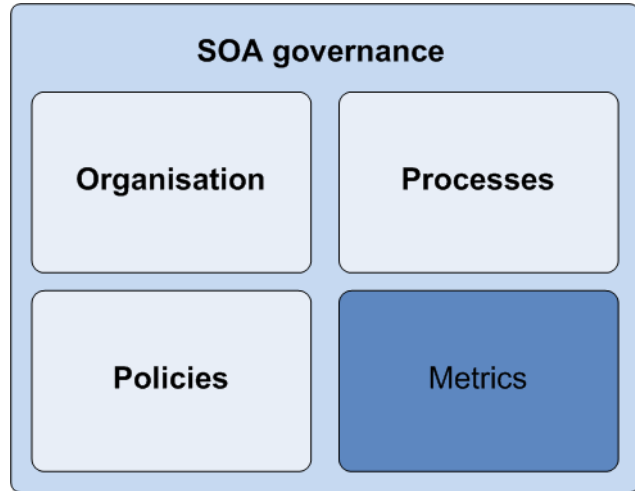


Agenda

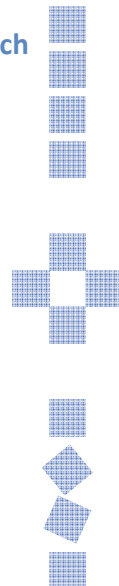
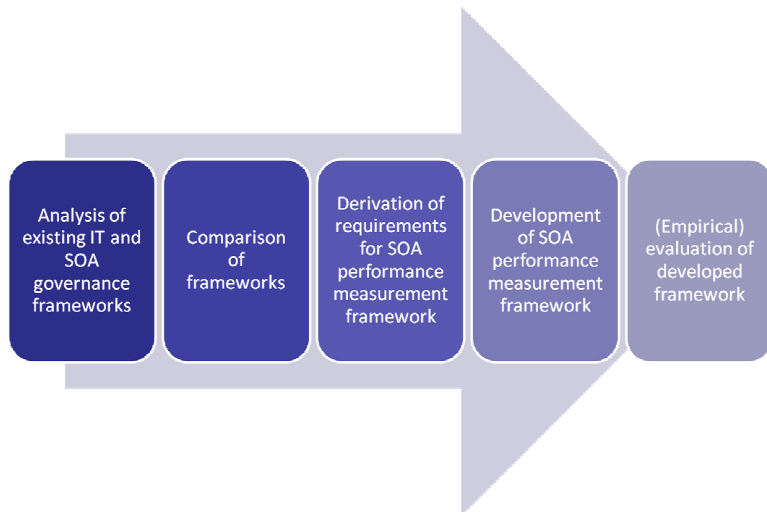
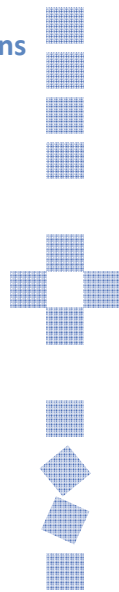
1. Research questions and motivation
2. Evaluation of IT and SOA governance frameworks
3. SOA performance measurement framework
4. Conclusion and outlook

SOA and SOA Governance

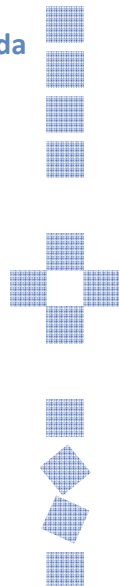
- SOA is often defined on a technical level, e.g. as a „multi-layer, distributed information system architecture which encapsulates parts of the application logic as services.“
Legner, Vogel (2007)
- But SOA is more than the technical implementation
- „SOA Governance refers to the organisation, processes, policies, and metrics required to manage an SOA successfully.“
Marks, Bell(2006)
- SOA governance has many aspects, e.g. definition of SLAs, access rights, service ownership, compliance, the way services are defined, designed, executed, maintained...
Malinverno (2006)



- Are existing IT and SOA governance frameworks appropriate for an SOA performance measurement framework?
- What are their strengths and weaknesses regarding an SOA performance measurement framework?
- How should an appropriate SOA performance measurement framework look like?



1. Research questions and motivation
2. **Evaluation of IT and SOA governance frameworks**
3. SOA performance measurement framework
4. Conclusion and outlook



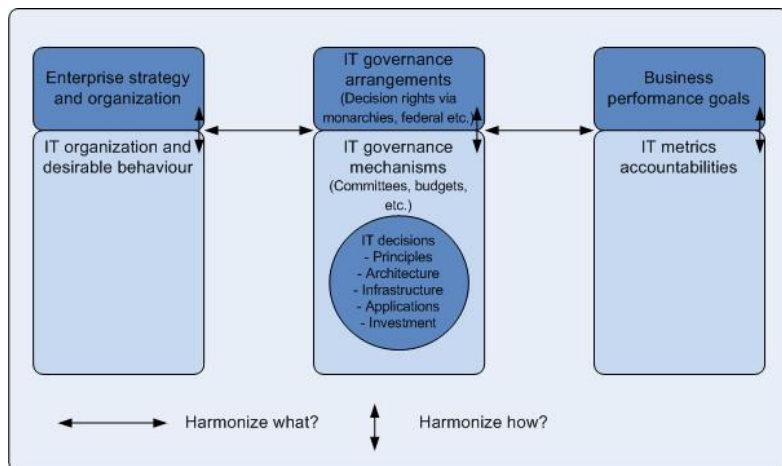
Performance measurement of SOA

- It is the task of SOA governance to define metrics
Shah et al. (2006), Schelp, Stutz (2007), Malinverno (2006)
- „You can't control what you can't measure“
de Marco (1982)
- But there is no widely-accepted approach on how to implement a measurement framework for SOA and how it should like

Existing Frameworks

- IT Governance Design framework by Weill and Ross
- IT Governance Balanced Scorecard
- CoBIT 4.1
- SOA Governance framework by Marks and Bell
- SOA Governance framework by Oracle
- IBM SOA Governance framework
- SOA Governance framework by Schelp and Stutz

IT Governance Design Framework by Weill and Ross

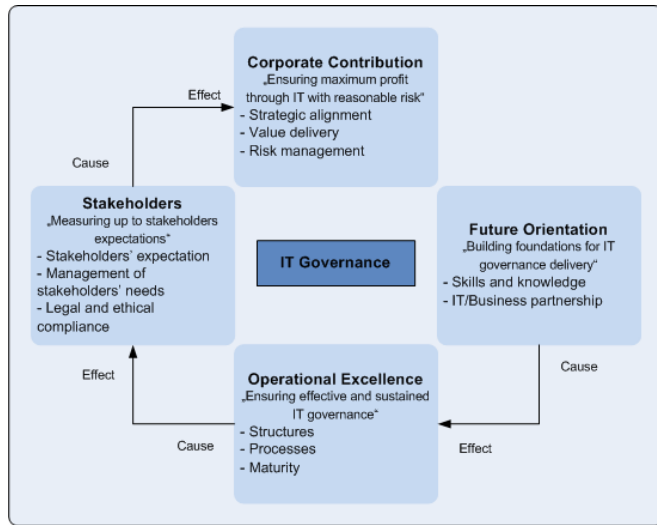


Source: Weill, Ross (2004), p. 149

IT Governance Design Framework by Weill and Ross

- IT desirable behaviors are reflected in the IT metrics and accountabilities
- Critical to any good governance design
- Articulating who is responsible for what and how they will be evaluated provides clarity, ownership and tools to assess governance performance.
- Business and IT alignment through metrics
- But no consideration of SOA characteristics

IT Governance Balanced Scorecard

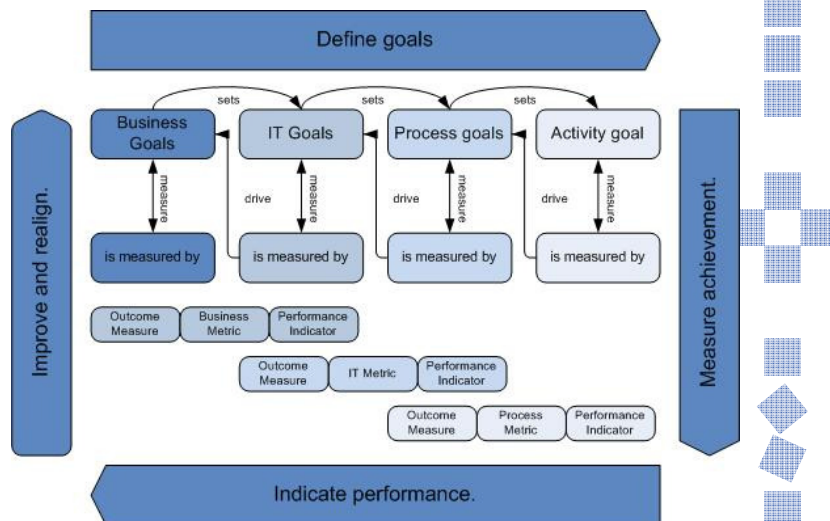


Source: van Grembergen, de Haes (2005)

IT Governance Balanced Scorecard

- Different perspectives
- Business and IT alignment
- Standardized approach for corporate management
- Cascading derivation of metrics
- But it does not consider SOA characteristics

CoBIT Framework



Source: CoBIT 4.1

CoBIT Framework

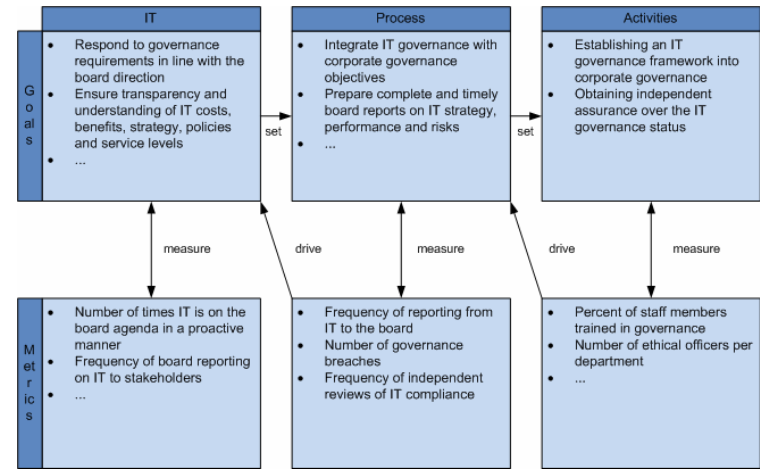
- 34 processes for IT governance
- Standard for IT governance
- Metrics for every process
- Business and IT alignment
- Cascade derivation of metrics
- Maturity model and roles-activity-assignment for every process

ME4 Provide IT Governance

- ME4.1 Establishment of an IT Governance Framework
- ME4.2 Strategic Alignment
- ME4.3 Value Delivery
- ME4.4 Resource Management
- ME4.5 Risk Management
- ME4.6 Performance Measurement
- ME4.7 Independent Assurance

Maturity Model for each process

- 0 – non-existent
- 5 - optimised

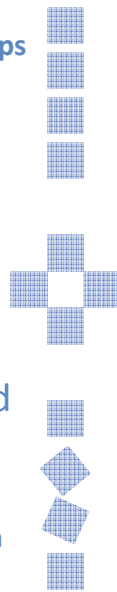


- SOA metrics should be aligned with business
- Different perspectives for governance measurement framework
- Metrics influence behavior of individuals
- Metrics definition should be integrated in SOA implementation process
- Metrics should be in accordance with standards, policies, processes etc.
- Cascading derivation of SOA governance metrics

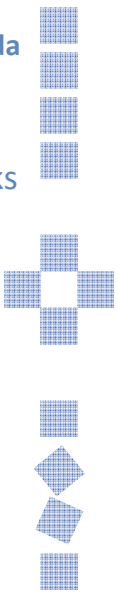
	Weill/Ross	IT Governance BSC	Cobit	Markus/Bell	Oracle	IBM	Schelp/Stutz
Focus							
IT Governance	x	x	x	-	-	-	-
SOA Governance	?	?	?	x	x	x	x
Origin							
Research	x	x	x	?	-	-	x
Industry	-	-	-	?	x	x	-
Characteristics of approaches							
Business-IT Alignment	x	x	x	x	x	x	-
Different perspectives	?	x	?	?	?	?	?
Consideration of SOA characteristics	?	?	?	x	x	x	x
Accepted standard in its domain	?	?	x	-	-	-	-
Consideration of roles	?	?	x	?	-	-	-
Metrics influence behavior	x	-	-	x	-	-	-
Cascade derivation of metrics	-	x	x	-	-	-	-
Existence of concrete measures	-	x	x	-	-	-	-
Existence of maturity model	-	x	x	-	x	-	-

x - criterion fulfilled
 - criterion not fulfilled
 ? - criterion fulfilled indirectly, further evaluation is needed

- Process-oriented SOA framework
- Stakeholder-focused SOA framework
- Development of an SOA Balanced Scorecard
 - Well-known tool for performance measurement
 - Already applied to other IT domains
 - Fulfills many claimed characteristics, but an adaptation for SOA is necessary



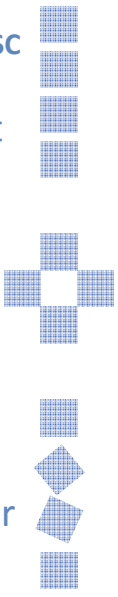
1. Research questions and motivation
2. Evaluation of IT and SOA governance frameworks
- 3. SOA performance measurement framework**
 1. Requirements for and characteristics of SOA-BSC
 2. Presentation of SOA-BSC
4. Conclusion and outlook



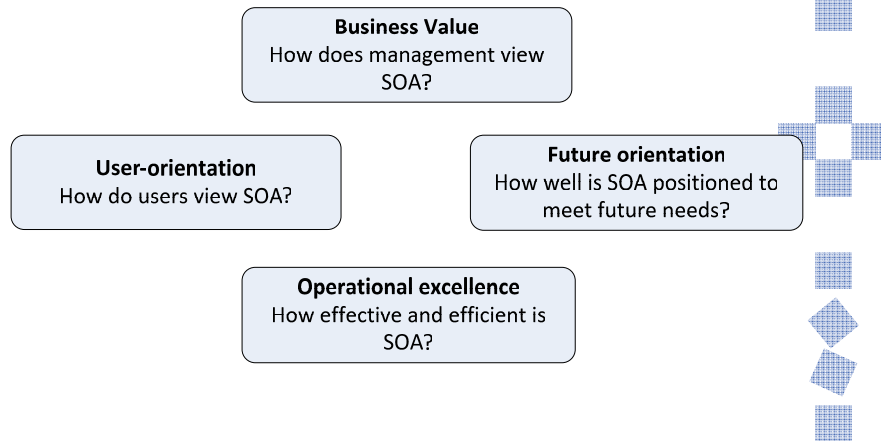
Requirement derived from existing frameworks	Requirements for SOA - BSC
Business-IT alignment	
Consideration of different perspectives	
Accepted standard in its domain	
Consideration of roles	
Metrics influence behavior	
Cascading derivation of measures	
Existence of concrete measures	
Existence of maturity model	
Consideration of SOA characteristics	
- Evaluation of appropriateness of SOA governance	
- Support potential of SOA for increased agility	
- Support potential of SOA to reduce costs	
- Consideration of differences between service consumer and supplier	



- Focus on SOA operation, SOA development and SOA strategy
- SOA-BSC is enabler for IT BSC
- Target group of SOA-BSC: responsible for SOA, e.g. head of SOA leadership team or head of SOA integration competence center



Perspectives of the SOA-BSC



Business value perspective

Perspective:	Business value
Mission:	<i>Obtain a reasonable business contribution of investments in SOA</i>
Objectives:	Controll of current expenses for SOA and services Measures: - Percentage over/under overall budget
	Current revenues from provided services Measures: - Revenues from sold services
	(Business) Value of new projects Measures: - Financial evaluation (ROI, NPV, IRR, PB) - Business evaluation (Information Economics)
	(Business) Value of SOA Measures: Long-term ROI, realised cost savings, comparing project costs, integration costs, quality tests, maintenance costs; network effects

User-orientation perspective

Perspective:	User orientation
Mission:	<i>Satisfy existing and potentially new users</i>
Objectives:	User satisfaction Measures: - Index of user satisfaction
	Service level performance (intern&extern) Measures: - Percentage of services meeting SLA
	Relationship with user community Measures: - Index of user involvement in generating new services
	Acquisition of new users Measures: - # of external users compared to previous period

Operational excellence perspective

Perspective:	Operational excellence
Mission:	<i>Ensuring efficiently working SOA</i>
Objectives:	Development of new services Measures: Similar to general software development; percent of projects in time and budget; service reuse measures
	Operation and maintenance of current SOA Measures: - Hours of unexpected downtime - Percent of scheduled work not completed on time
	Ensuring efficient SOA governance Measures: - Compliance metrics - Standards conformance

Future-orientation perspective

Perspective	Future orientation
Mission:	<i>Deliver continuous improvement and prepare for future challenges</i>
Objectives:	Training and education of personal in terms of SOA Measures: Education budget, # education days
	Expertise of SOA personal Measures: # of years of SOA experience, age pyramid of stuff, meeting competency profile, certified personal
	Research into emerging SOA topics and technologies Measures: % of budget spent on SOA research, satisfaction of top management about emerging technologies reports
	Ensuring effective SOA governance Measures: Number/frequency of SOA governance meetings, last update of goals, policies, processes, organisation, metrics....
	Maturity of SOA Measures: Level of maturity, last update of action plan
	Future readiness of SOA Measures: Agility of SOA, reuse potential, correct incentives

Agenda

1. Research questions and motivation
2. Evaluation of IT and SOA governance frameworks
3. SOA performance measurement framework
4. **Conclusion and outlook**

Conclusion

- SOA Governance is important for SOAs
- Task of SOA Governance to define measures for performance measurement
- There is no appropriate SOA performance measurement framework
- This presentation showed an SOA-Balanced Scorecard
 - Based on requirements from existing frameworks and SOA characteristics
 - SOA-BSC contains four perspectives which include adapted objectives and measures

Outlook

- Further research for appropriate measures
- Integration of maturity model
- Description of implementation process
- Empirical validation through a case study