

# Service Oriented Business Applications: Road towards Agile Enterprise

Date: 29/04/2009  
Tarmo Ploom

Final Version

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# Agenda

- Overview
  - Credit Suisse in brief
  - Credit Suisse international locations
- Complexity
  - Focus on complexity
  - Reduction of complexity
- Agility
  - Focus on agility
  - Means to increase agility in organisation
- DNA of organisations
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  - Existing definitions
  - Historical view
  - SOBA vision
  - SOBA conceptual view
  - SOBA service view
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  - SOBA refinement model
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  - SOA & MDA maturity models
  - BPM & BR maturity models
- Roadmap
  - Is it a fantasy?
  - SOBA as basis of agile enterprise
- Q&A

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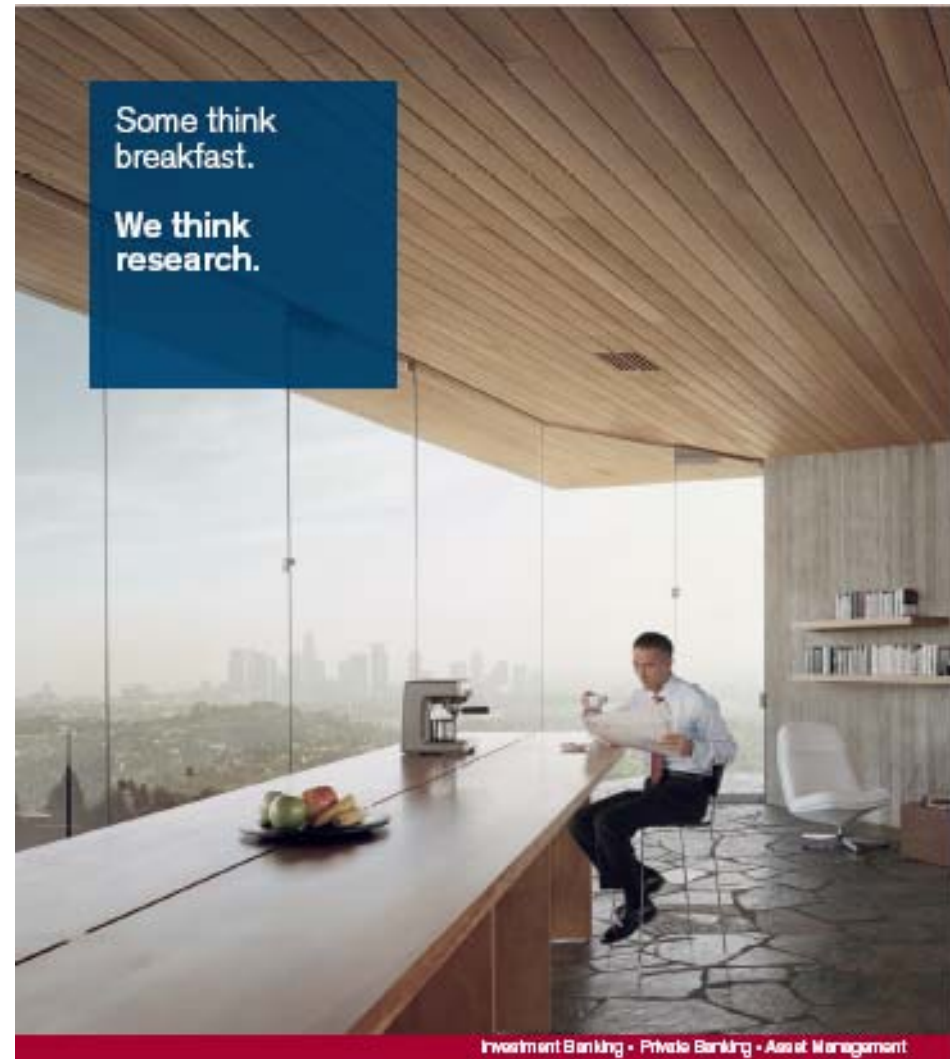
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# Credit Suisse in brief

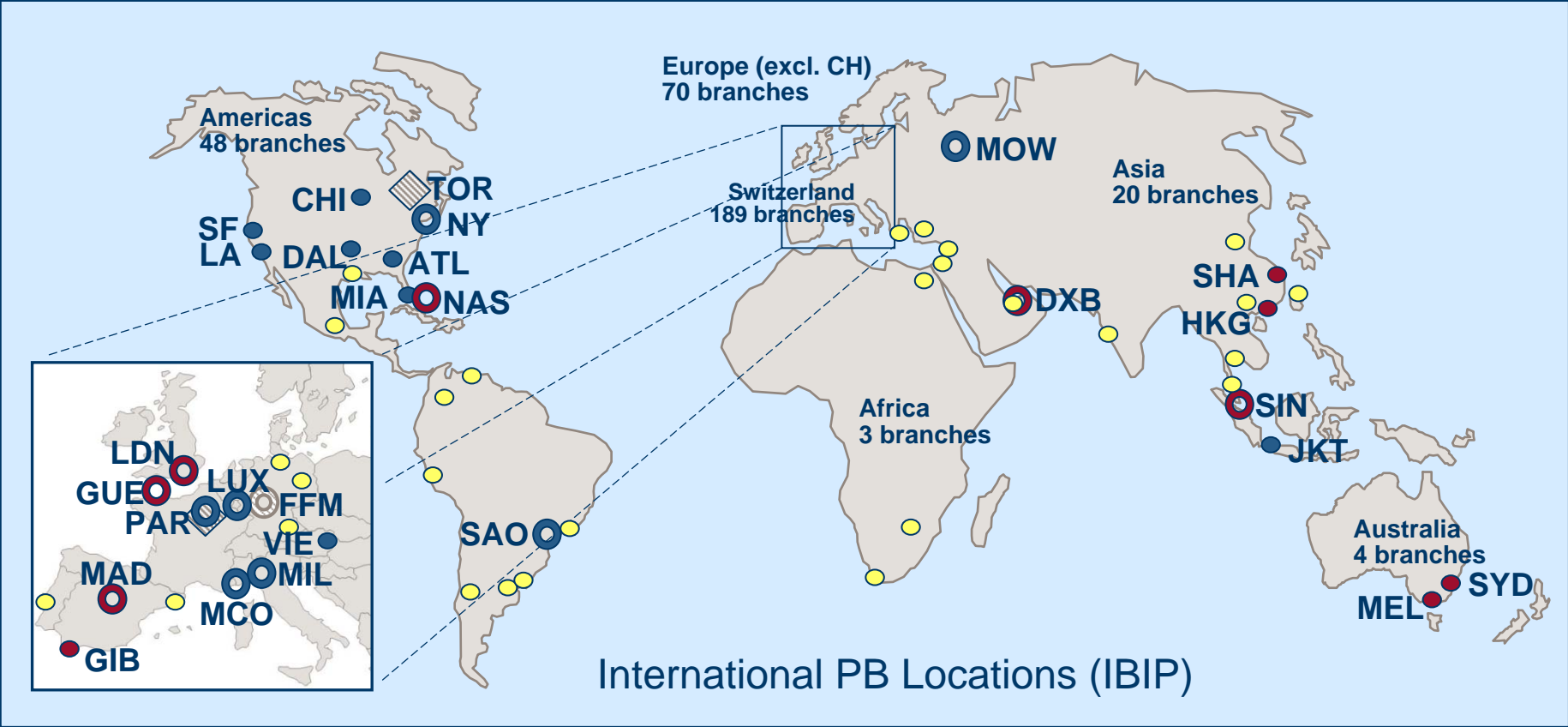
Credit Suisse is a leading global bank headquartered in Zurich.

It is focused on serving its clients in three business lines: investment banking, private banking and asset management.

Credit Suisse is renowned for providing expert advice, holistic solutions and innovative products to a wide range of corporate and institutional clients and high-net-worth individuals globally, as well as retail clients in Switzerland.



# Credit Suisse, international locations

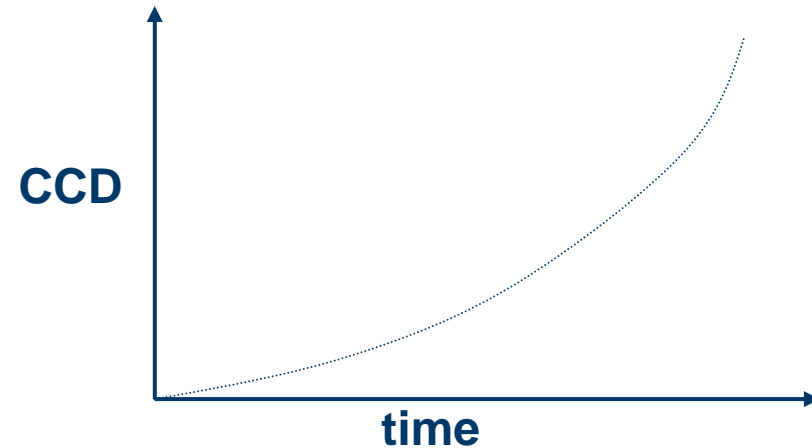


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# Complexity, focus on complexity

- **Credit Suisse IT landscape**
  - > 3000 applications
  - > 40 000 servers
  - > 100 000 000 SLOC code
- **Complexity**
  - > 30 definitions
  - Cumulative component dependency, CCD (*John Lakos*)
- **Second law of thermodynamics**
  - In an isolated system, the entropy cannot decrease
  - Entropy of an isolated system tends to increase or remain the same



$$S = -k \sum_i P_i \ln P_i$$

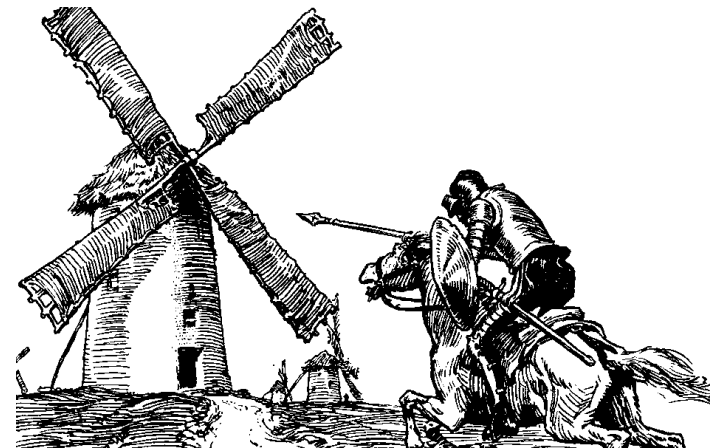
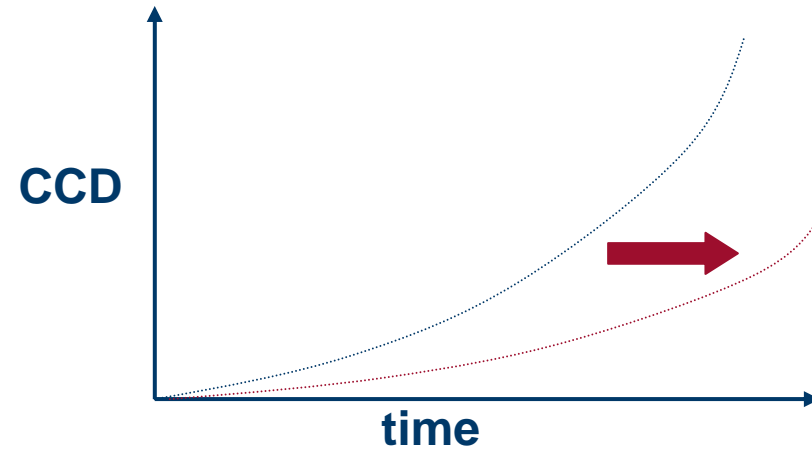
S: Entropy

i: Number of microstates

$P_i$ : Probability of microstate i

# Complexity, reduction of complexity

- **Reduce complexity by:**
  - EA management
  - SOA
  - Componentization
  - Reengineering
  - Change management processes
  - Deployment processes
  
- **Did we met the target?**
  - We managed to reduce complexity
  - But what happened to agility?



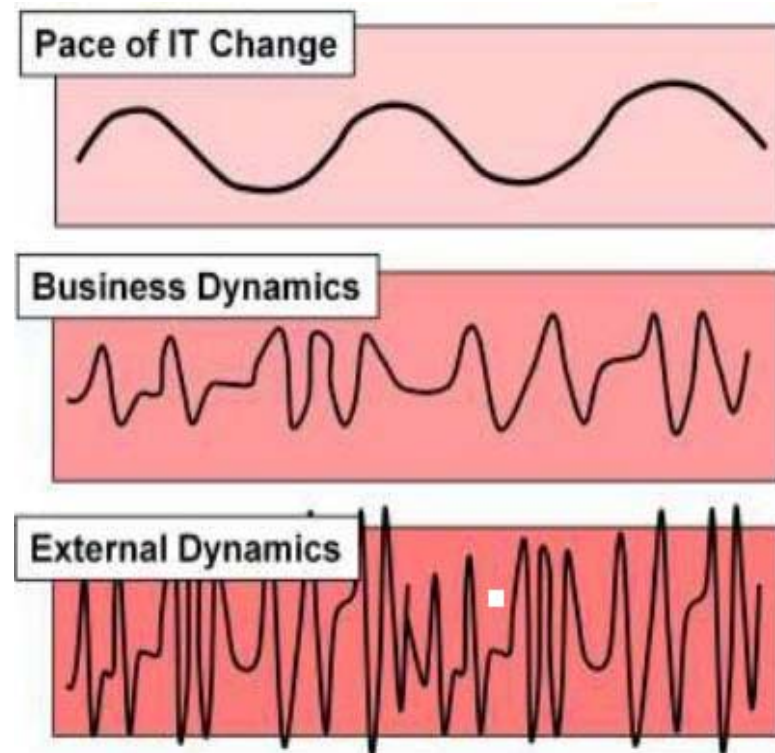


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# Agility, focus on agility

- **Everything changes ...**
  - New or changed competitors
  - New or changed products
  - New or changed customers
  - New or changed regulations
  - New or changed technologies
  - New or changed business processes
  - New or changed business rules
  - New ...
- **IT system as inhibitor of agility**
  - Rigid change management  
(as everything depends on everything)
  - rigid production installation  
(as number of components is large)



# Agility, means to increase agility

- **New technologies**
  - Video conferencing
  - Mobile communication
  - iPod
- **New software development process**
  - XP
  - DSDM
  - SCRUM
- **Organisational change processes**
  - freeze & defreeze, ...
  - Socio-economical change models
  
- **Constraint**
  - Organisational processes and procedures

**Cheop's pyramide**

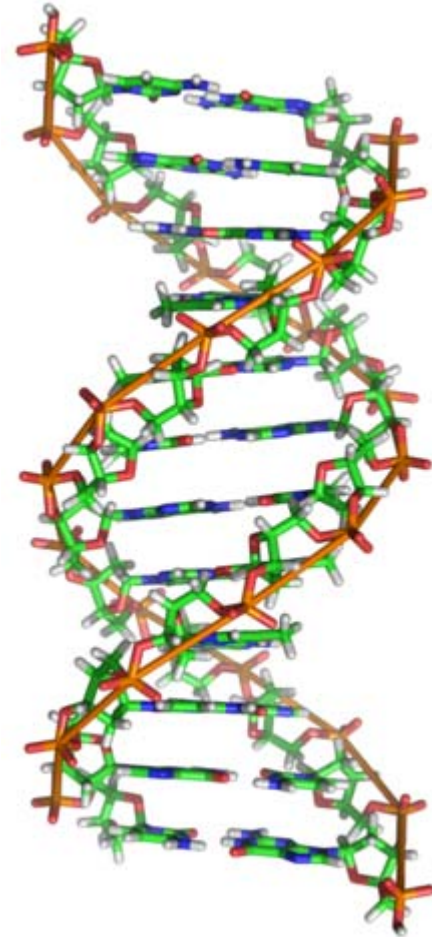


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# DNA of organizations, processes and procedures

- **DNA of organization**
  - Organizational processes and procedures of service organizations are embedded in the code
- **To change organization**
  - Organizational DNA has to be changed
- **IT - Mapping**
  - Business processes = organizational processes
  - Business rules = organizational procedures
- **Define architectural style which facilitates**
  - Fast change of business processes
  - Fast change of business rules
  - Control of complexity



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# Service Oriented Business Applications, existing definitions

- **Gartner calls them "SOBA"**
  - Service Oriented Business Applications (SOBAs) will enable enterprises to dynamically compose and decompose applications according to business needs
- **Forrester calls them "Dynamic Applications"**
  - Dynamic applications, software that adds more visibility and collaboration to today's business processes, while adapting more quickly and cost-effectively to their changes, represent IT's worthiest hope for enabling real business agility.
- **Aberdeen Group calls them "Composite Applications"**
  - Composite apps, logic and data collected from multiple IT sources, harnessed with web services standards, are rapidly becoming the development standard of choice in all IT organizations.

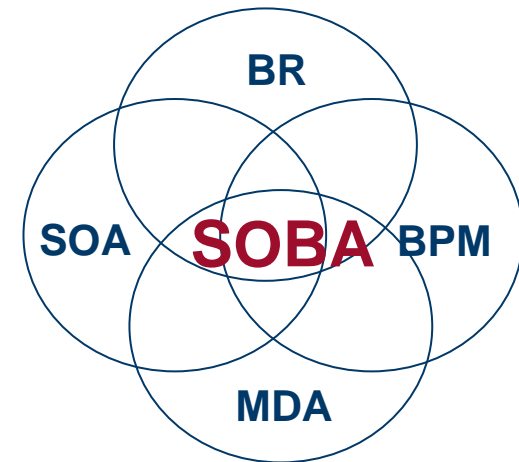
**Gartner.**



**Aberdeen Group**  
A Harte-Hanks Company

# Service Oriented Business Applications, historical view

- **Is there something new?**
  - 4GL (data & screens)
  - Frameworks (data, screens & rules)
  - BPMS (data, screens, rules, processes)
- **But what we don't have is combination of:**
  - MDA (Model Driven Architecture)
  - SOA (Service Oriented Architecture)
  - BPM (Business Process Management)
  - BR (Business Rules management)
- **SOBA facilitates**
  - Control of complexity -> MDA & SOA approach
  - Increased agility -> BPM & BR approach





# Service Oriented Business Applications, vision

- **Definition**

- Highly agile, highly flexible business applications with controlled complexity, which can be dynamically composed and changed by business specialists

- **Precondition**

- Library of existing software assets, which can dynamically composed into applications:
  - Services
  - Business processes
  - Business rules

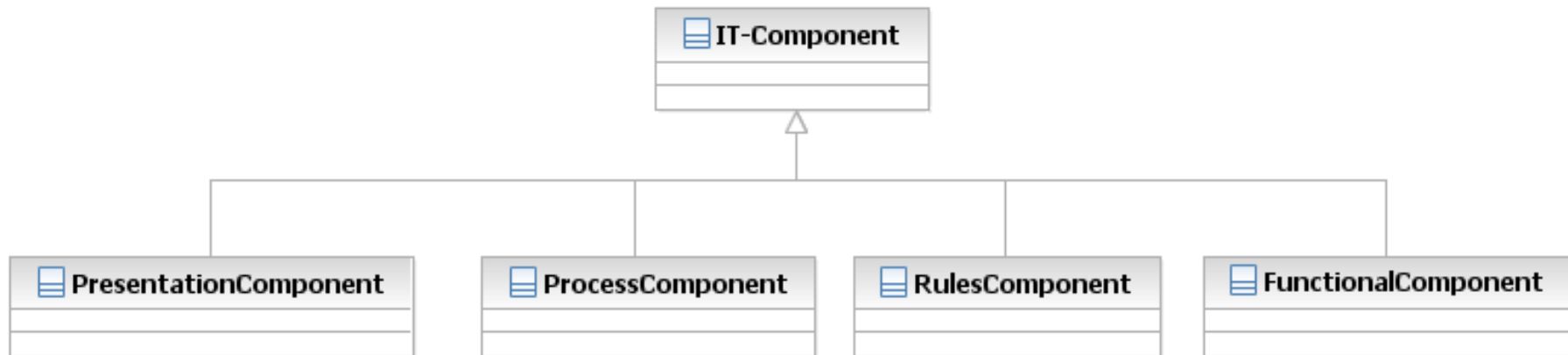
- **Impact**

- Programming on very high abstraction level
- Higher focus on business architecture
- Transformation of code centric development processes to model centric



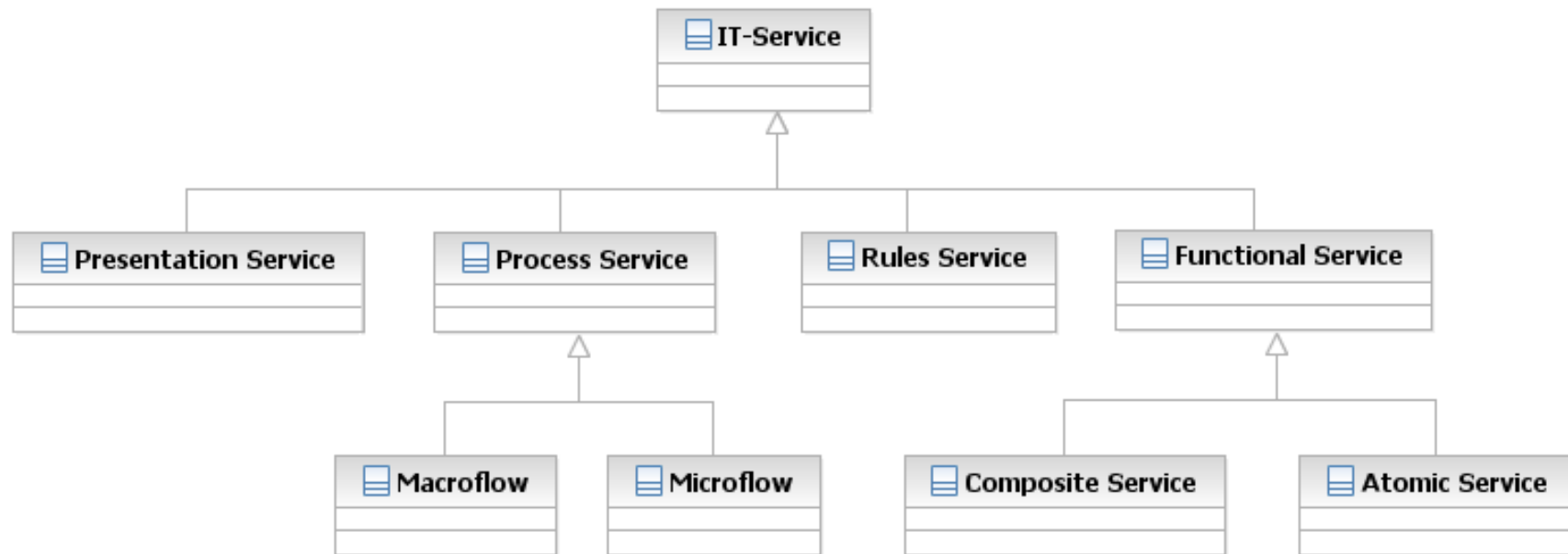
# Service Oriented Business Applications, conceptual view

- **Four component types**
  - presentation components
  - rules components
  - process components
  - functional components



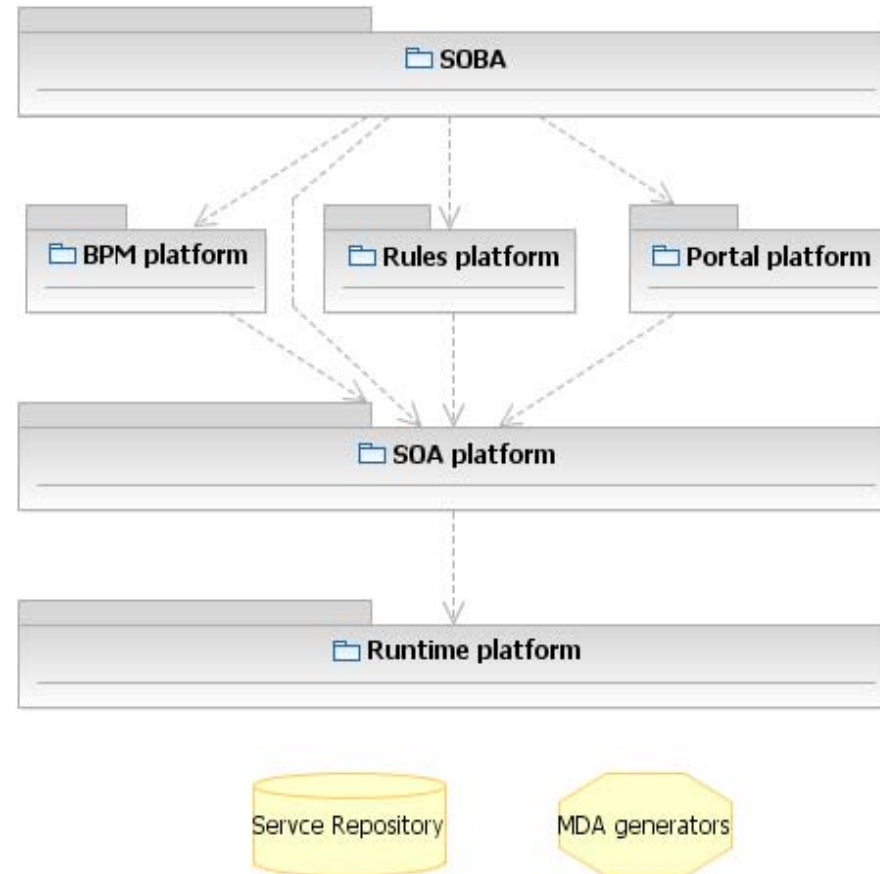
# Service Oriented Business Applications, service view

- **Macro flow:** Persistent flow, consists of many technical transactions
- **Micro flow:** Transient flow, is a single technical transaction
- **Composite service:** Sequence of services which are collectively idempotent and doesn't involve compensating activities
- **Atomic service:** Service which can't be decomposed into smaller services



# Service Oriented Business Applications, platform view

- **SOBA runtime platform**
  - BPM platform
  - Rules platform
  - SOA platform
  - Runtime platform
- **Reusable assets repository**
  - Services
  - Business processes
  - Rules
- **Tool-chain**
  - MDA generators



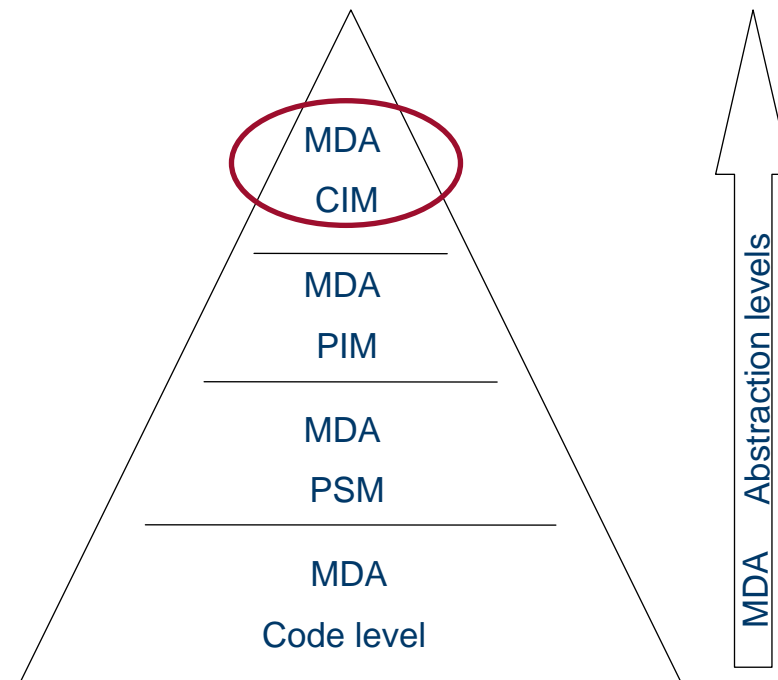
# Service Oriented Business Applications, development view

- **SOBA meets MDA**

- Conventional programming is on the Code level
- In MDA usually we dream about programming on the PIM level
- In SOBA we dream about programming on CIM level

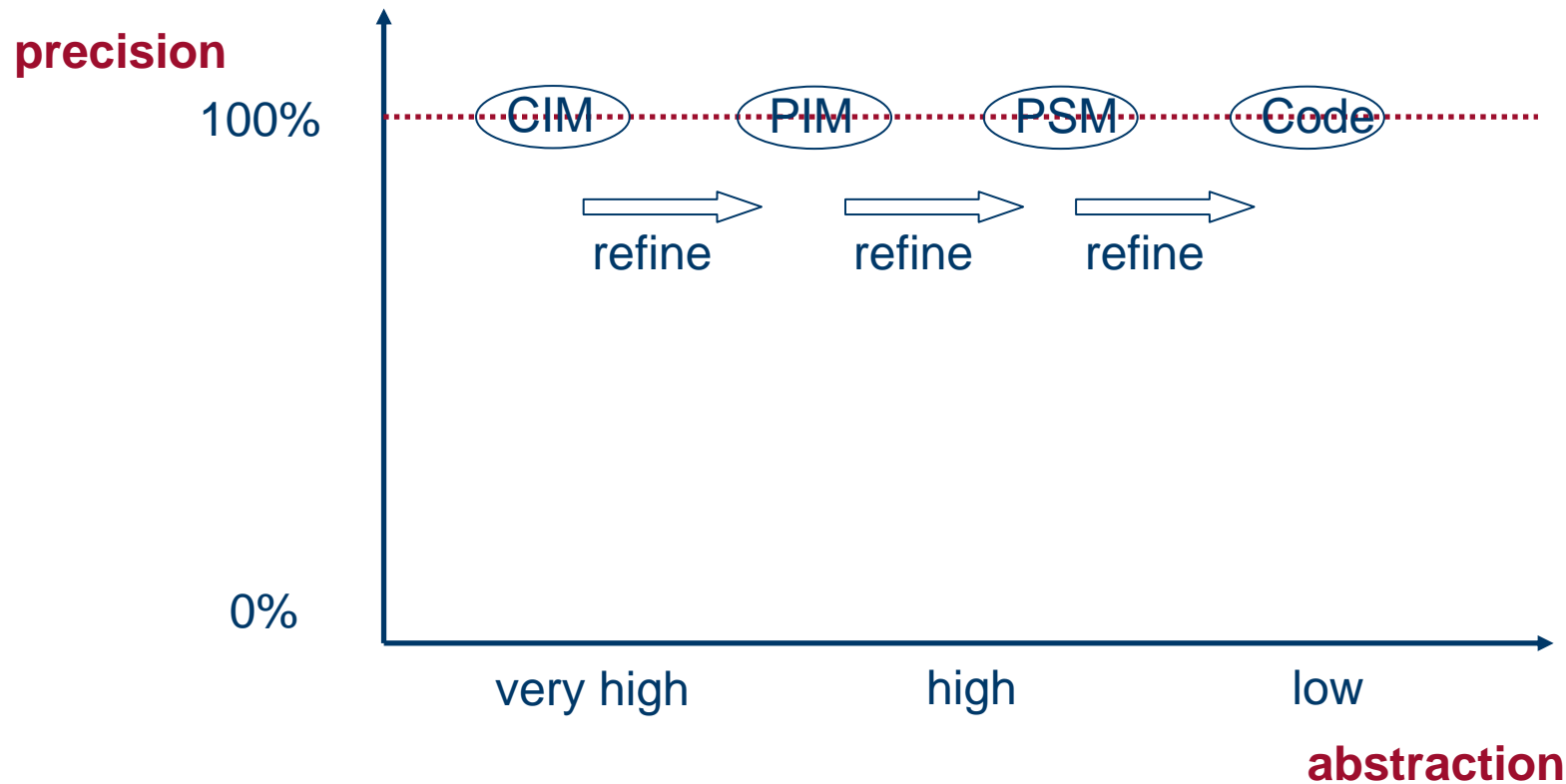
- **SOBA meets business**

- Dream that business customers can themselves compose executable business processes from library of business services and executable business processes



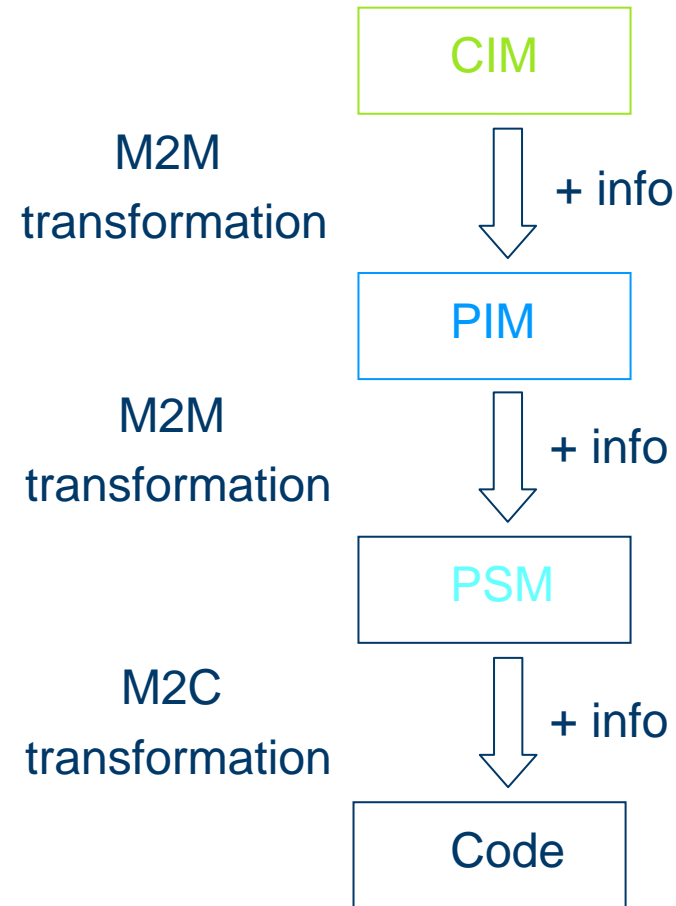
# Service Oriented Business Applications, refinement view

- Modeling (programming) is done on CIM level
- Subsequently information about PIM and PSM is added
- On each abstraction level models have to be 100% precise



# Service Oriented Business Applications, generators view

- **Structure generators**
  - Component generators
  - Service generators
  - Persistence generators
  - Deployment generators
  - Presentation generators
- **Behavior generators**
  - BPMN CIM process => BPEL/XPDL executable process
  - Rules CIM level => rules executable level



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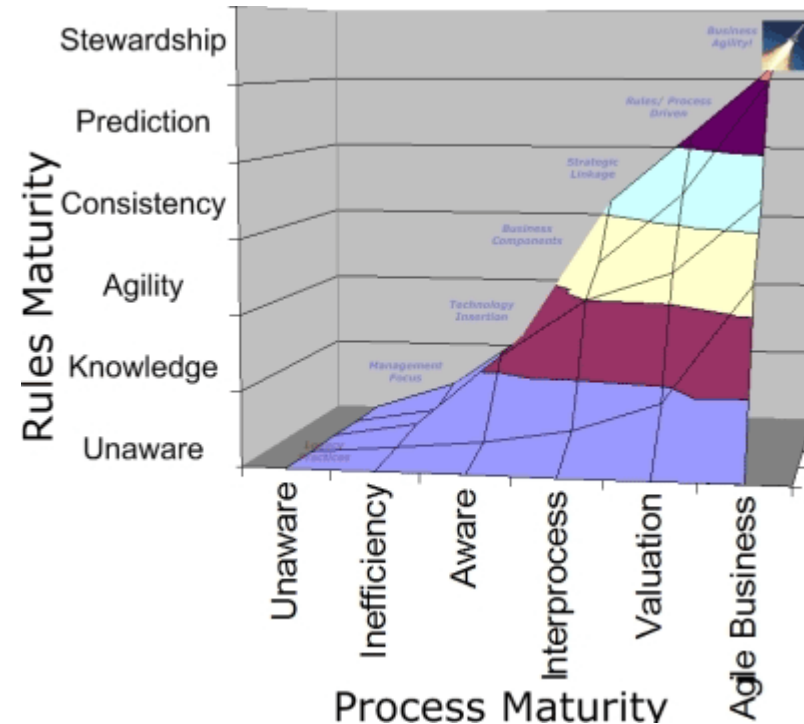
# Maturity models, BPM & BR maturity models

## ■ BPM maturity model

- unaware
- acknowledge operational inefficiency
- intra-process automation
- inter-process automation
- enterprise valuation control
- agile business

## ■ BR maturity model

- unaware
- knowledge
- agility
- consistency
- prediction
- stewardship



# Maturity models, SOA & MDD maturity models

- **SOA maturity model**
  - Initial services
  - Architected services
  - Business services
  - Measured business services
  - Optimized business services
- **MDD maturity model**
  - Ad-hoc modeling
  - Basic MDD
  - Initial MDD
  - Integrated MDD
  - Ultimate MDD

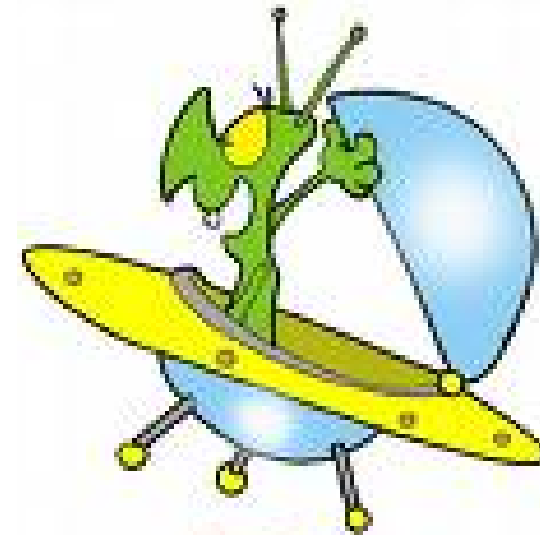


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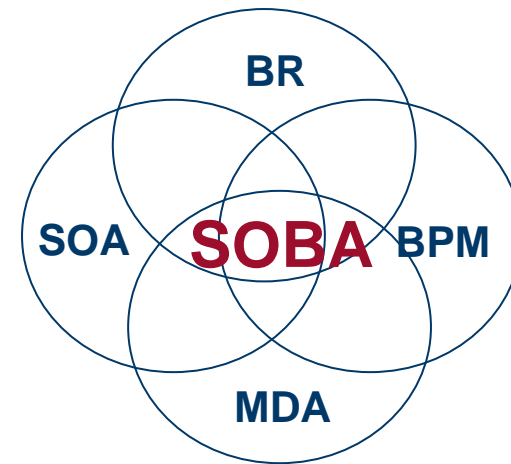
# SOBA roadmap, is it a fantasy?

- **Build platform**
  - SOA, BPM, BR, Portals
- **Build software asset repositories**
  - Service, process, rules
- **Build MDA generators**
- **Define and integrate metamodels**
  - CIM -> PIM -> PSM
  - SOA, MDD, BR, BPM
- **Increase maturity levels**
  - SOA, MDD, BR, BPM
- **Define processes**
  - MDA refinement process
  - Agile deployment process
  - Agile change process



# SOBA roadmap, SOBA as basis of agile enterprise

- **SOBA has some similarities with living systems:**
  - SOA (cell/organism borders)
  - MDA models (DNA)
  - MDA generators (DNA transcription)
  - BR (enzymes in cells)
- **But in contrast to natural live SOBA can:**
  - adopt its DNA online (not over generations)
- **SOBA as sustainable enterprise application**
  - in equilibrium with stable environment
  - accommodates to changed environment
  - controls its own complexity
  - avoids "death" by entropy
- **SOBA as basis of agile enterprise**



Q&A?



# Backup

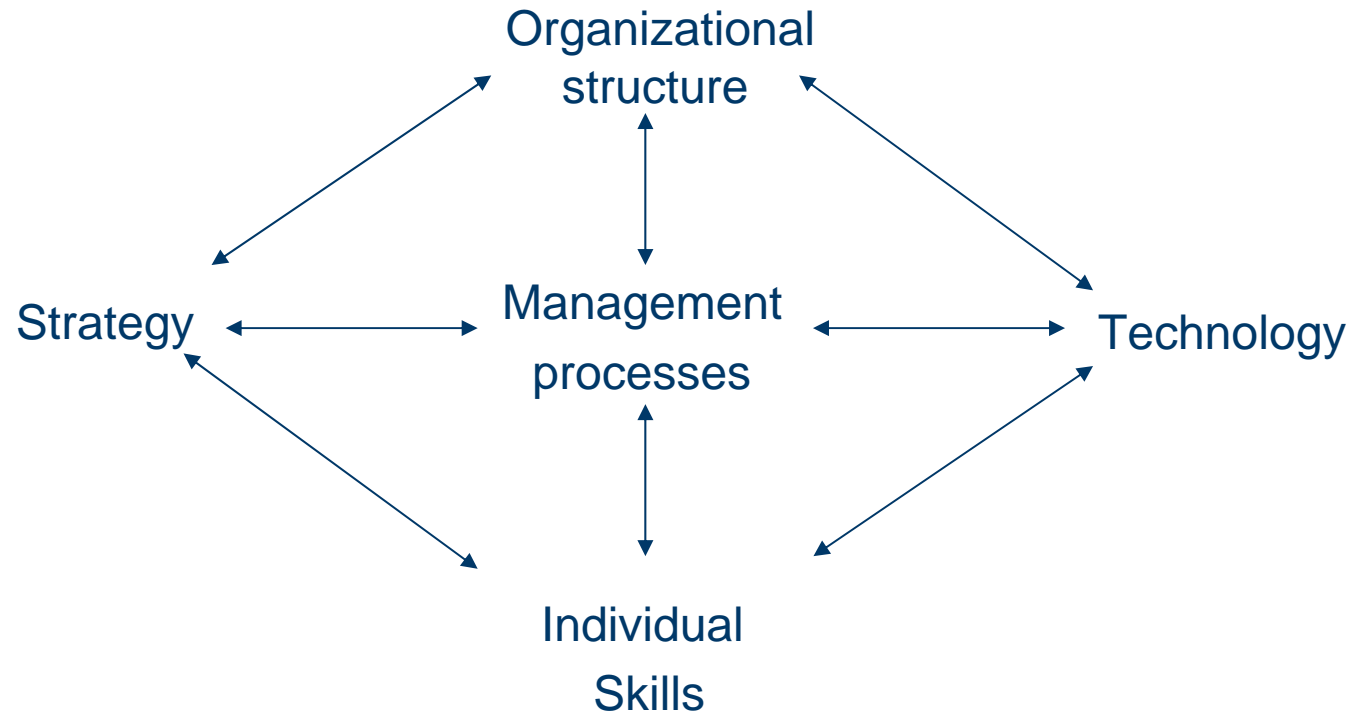
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4. *SONIC Software, A new service oriented architecture maturity model, 2006*
5. *Modelware, MDD Maturity model, 2006*
6. *Tom Debevoise ,Converging BPM and Business Rules Maturity Models, 2007*



# Platform based approach, management processes

- MIT 90 framework for technology driven change



*Scott Morton, 1991, The Corporation of the 1990s: Information Technology and Organizational Transformation*