CREDIT SUISSE

Service Oriented Business Applications: Road towards Agile Enterprise

Date: 19/11/2009

Tarmo Ploom

Final Version

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
  - DNA of organisations
- Service Oriented Business Applications
  - Existing definitions
  - Historical view
  - SOBA vision
  - SOBA conceptual view
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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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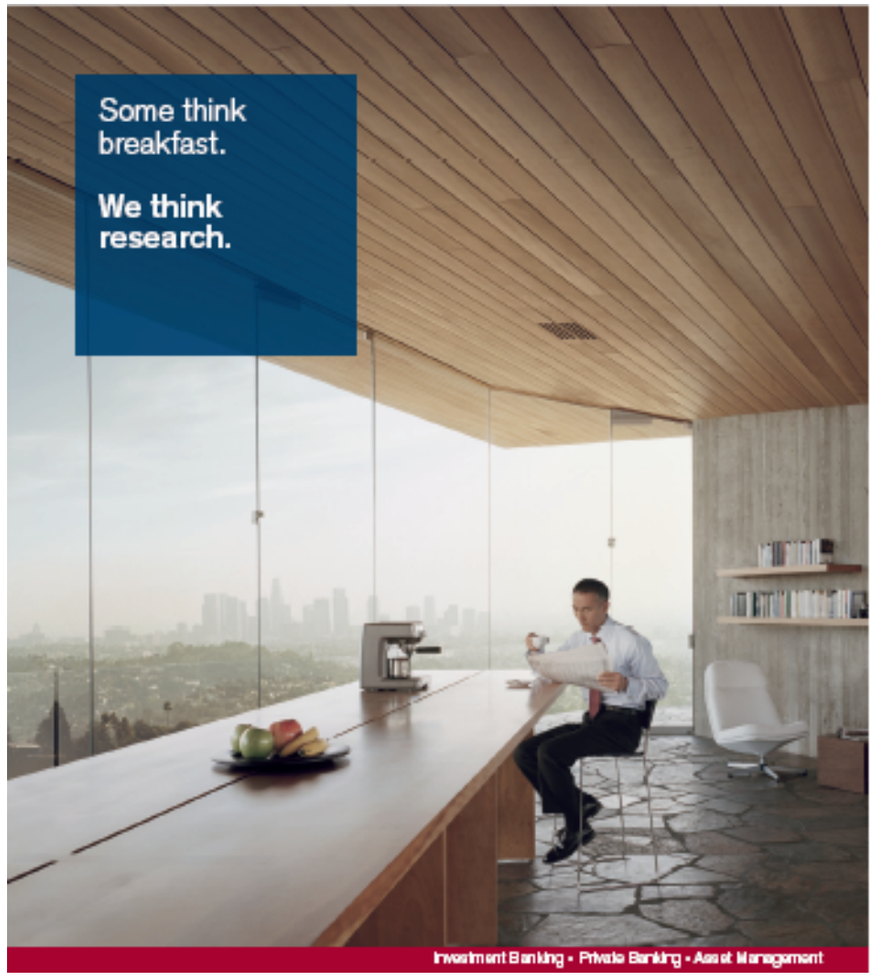
Credit Suisse in brief

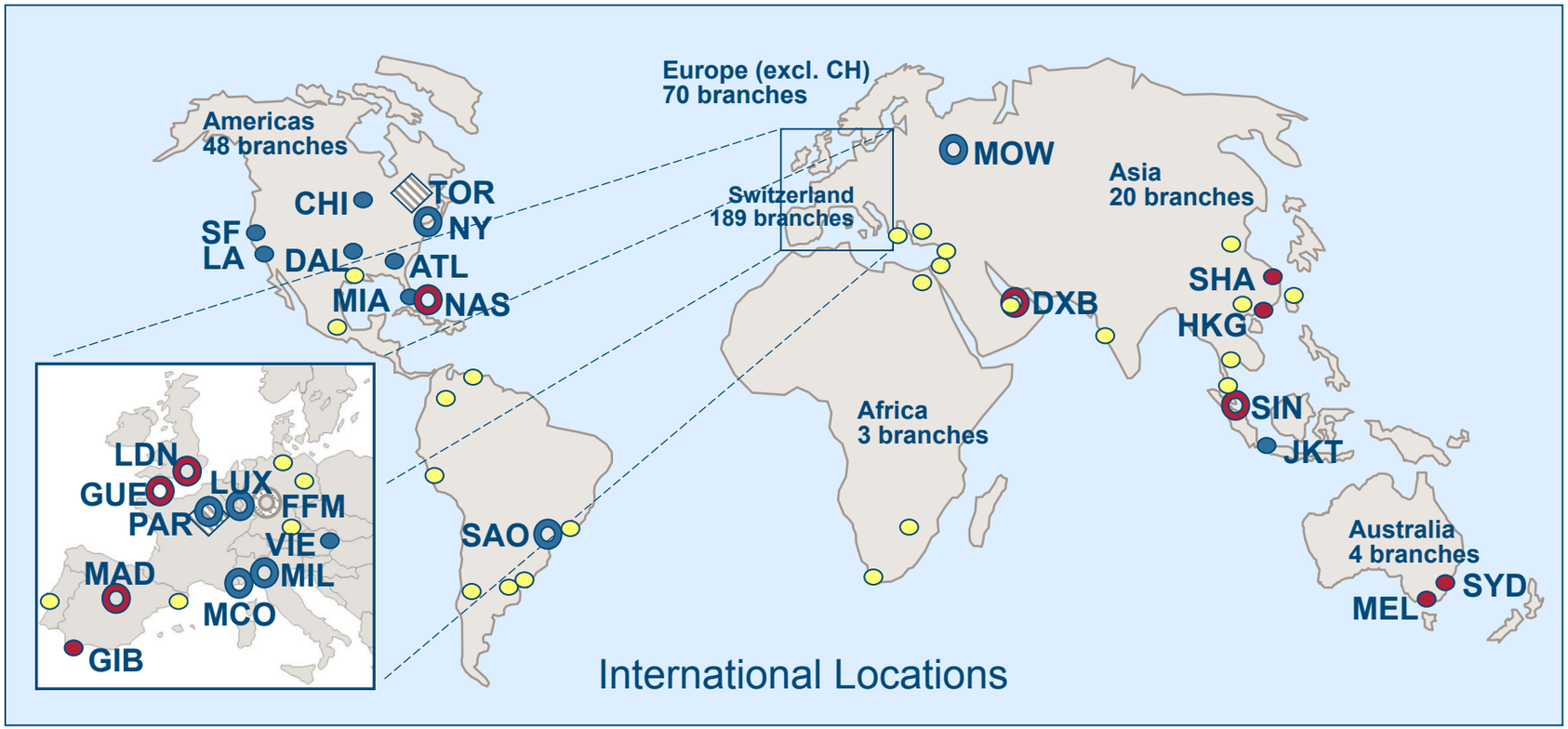
Credit Suisse is a leading global bank headquartered in Zurich.

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

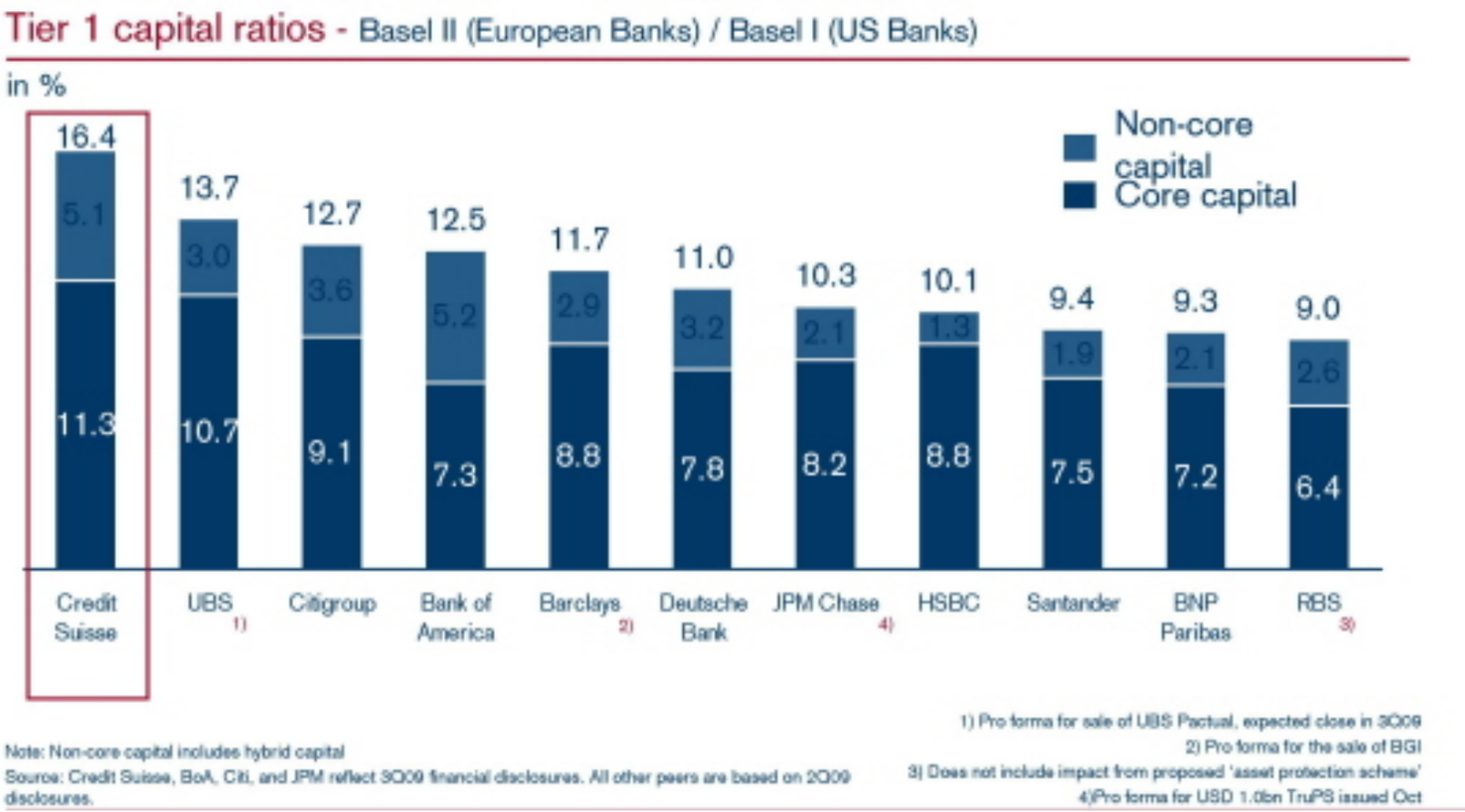
Credit Suisse is renowned for providing expert advice, holistic solutions and innovative products to a wide range of corporate and institutional clients and high-net-worth individuals globally, as well as retail clients in Switzerland.



Credit Suisse, international locations



Credit Suisse, tier I ratio



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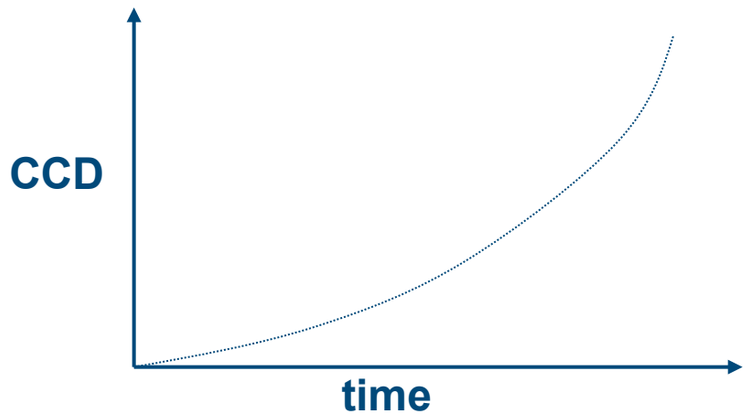
Complexity, focus on complexity

- **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



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

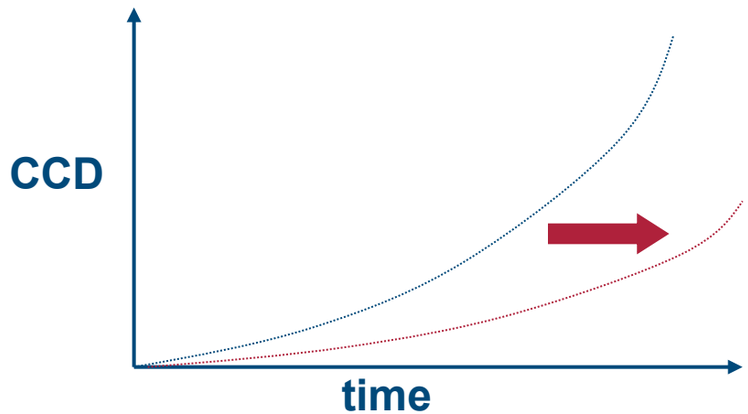
S: Entropy

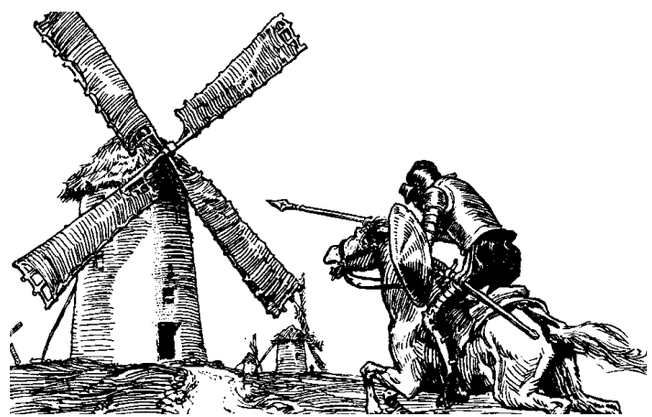
i: Number of microstates

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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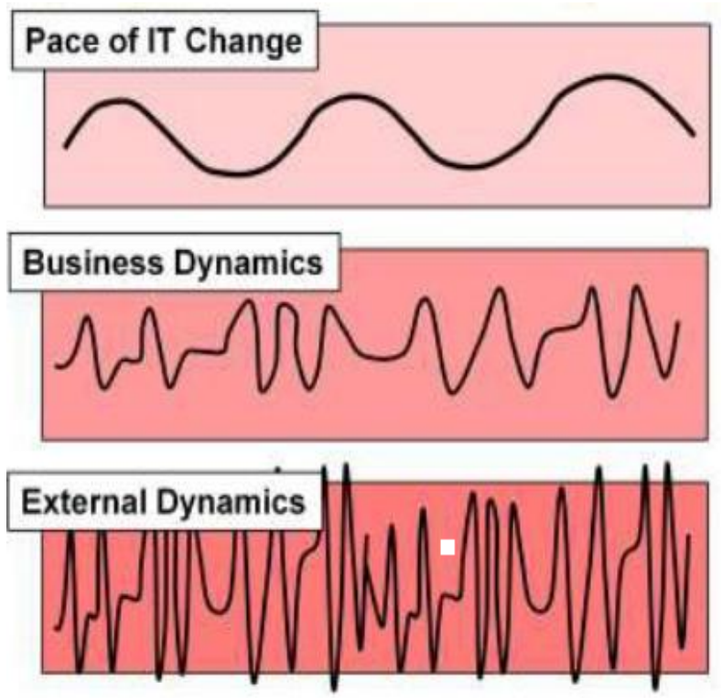
Agility, focus on agility

- **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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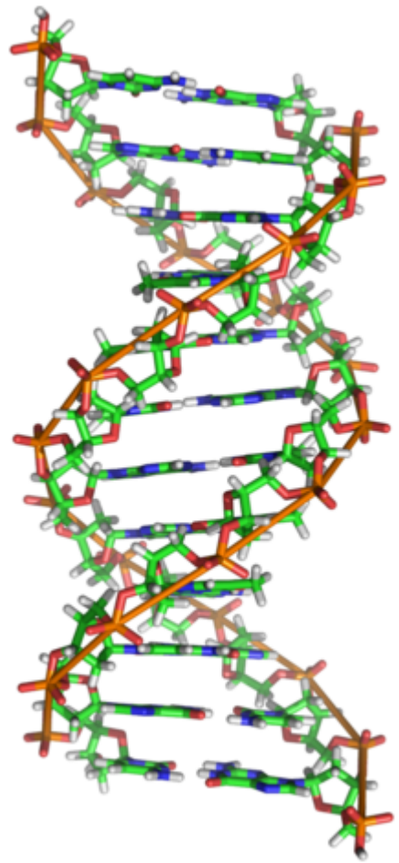
DNA of organizations, processes and procedures

- **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

FORRESTER

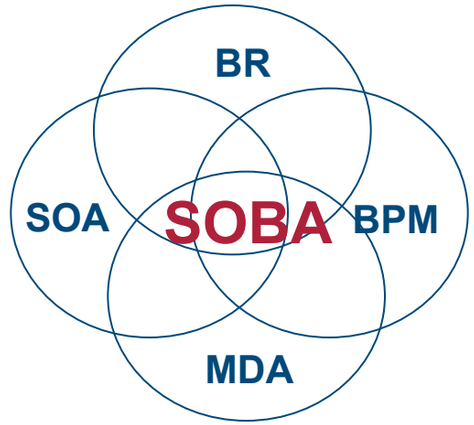
Aberdeen Group
A Harte-Hanks Company

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

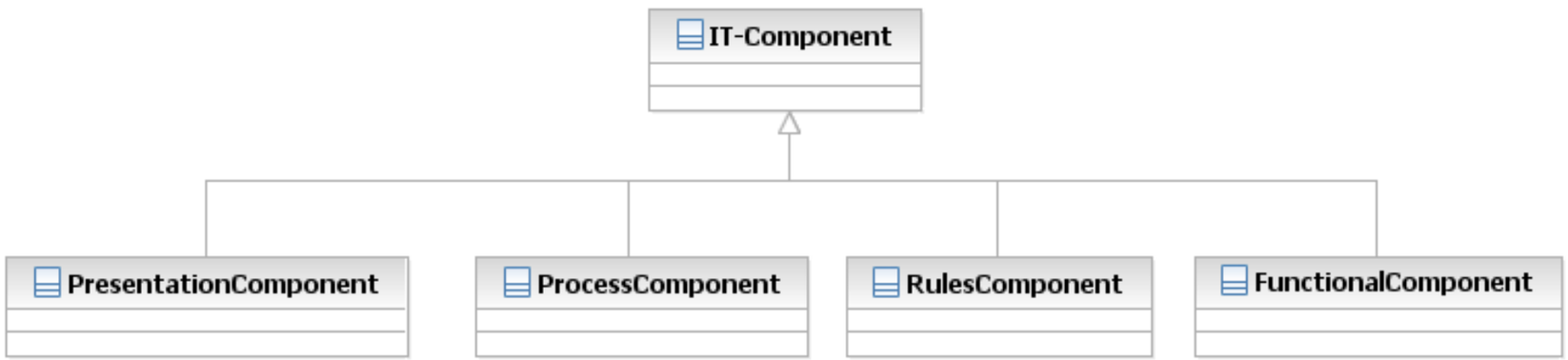
- **Definition**
  - Highly agile, highly flexible business applications with controlled comlexity, which can be dynamically composed and changed by business specialists

- **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

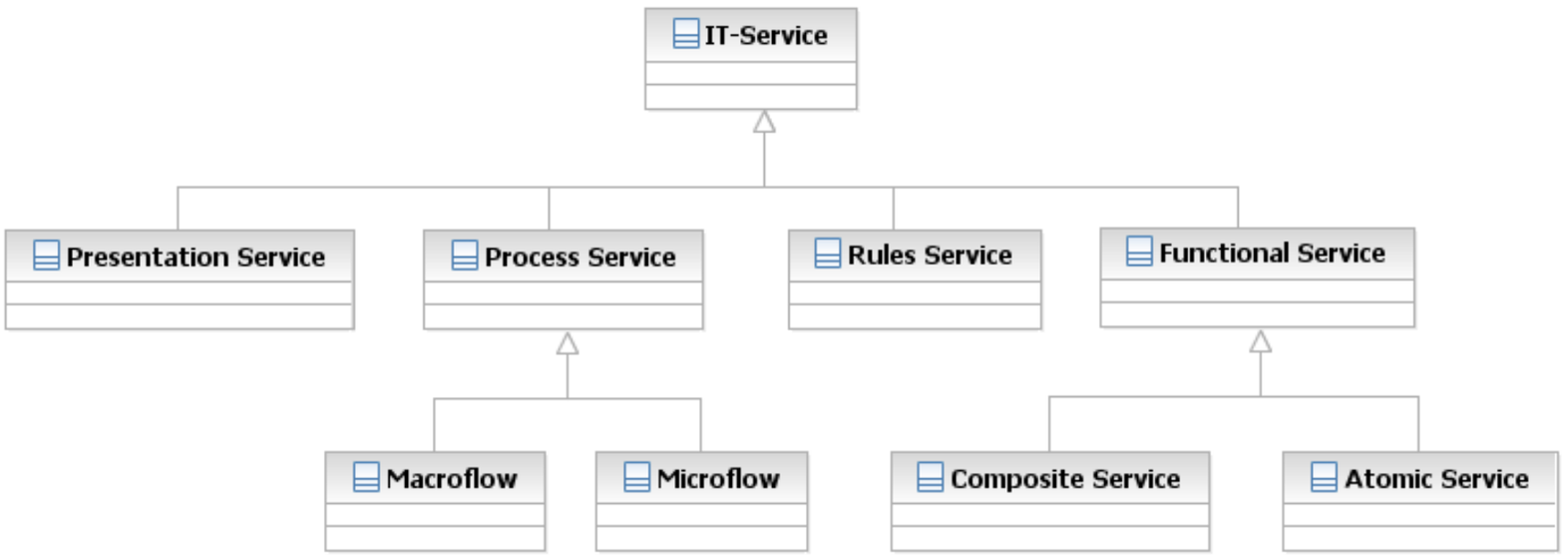
Service Oriented Business Applications, conceptual view

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



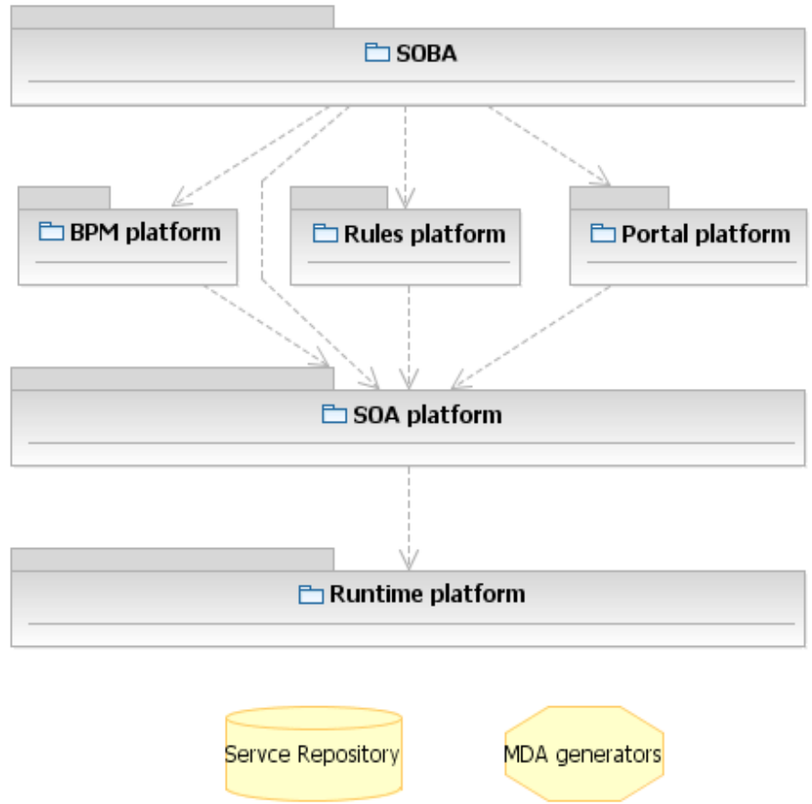
Service Oriented Business Applications, service view

- **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



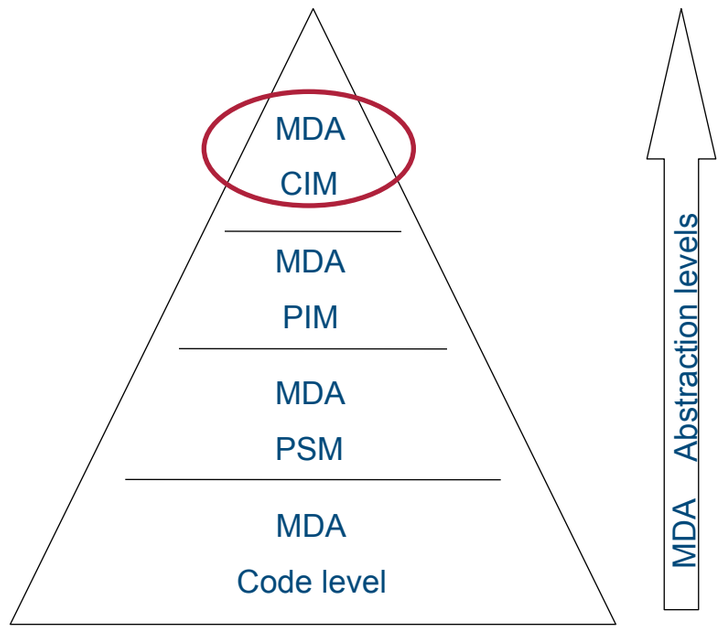
Service Oriented Business Applications, platform view

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



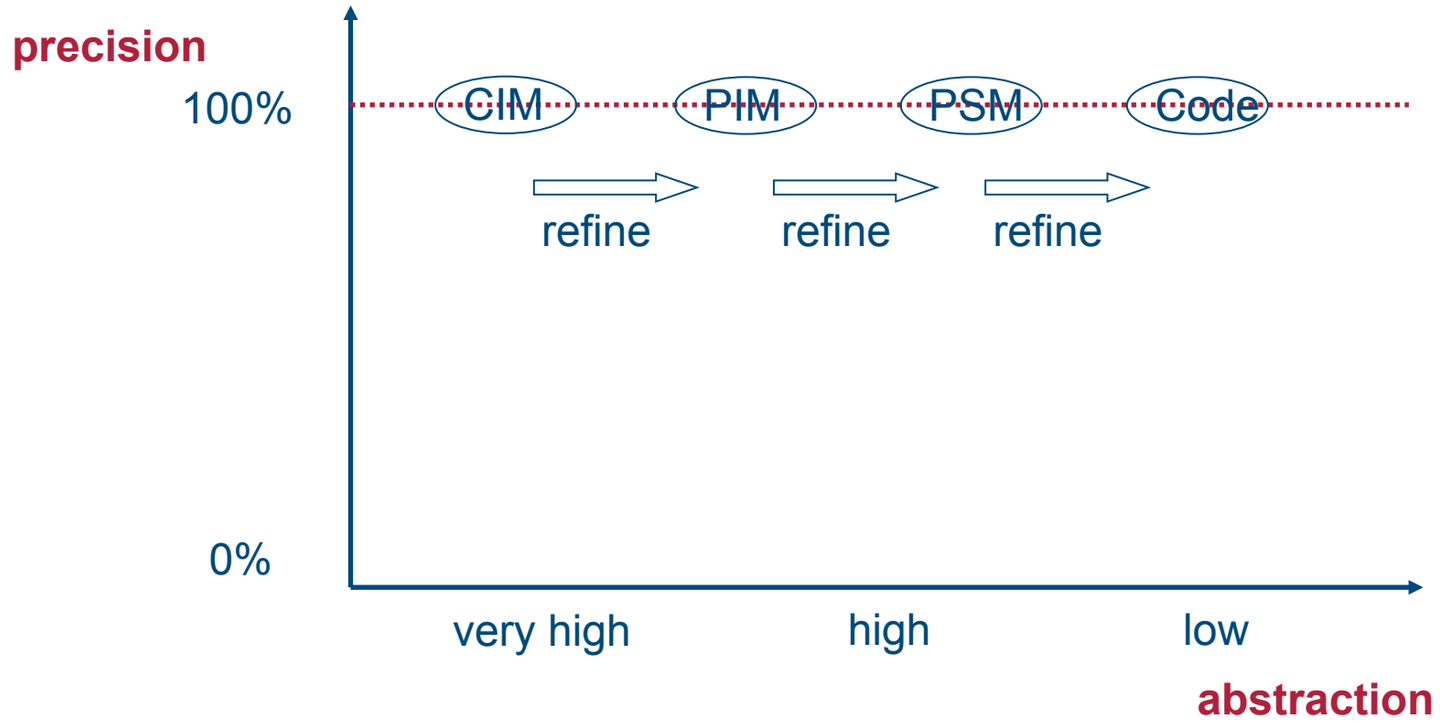
Service Oriented Business Applications, development view

- **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



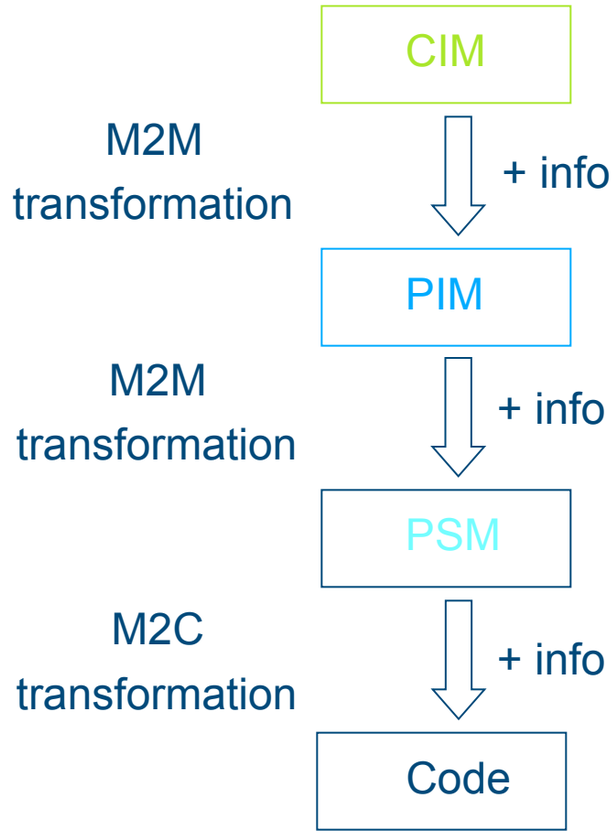
Service Oriented Business Applications, refinement view

- **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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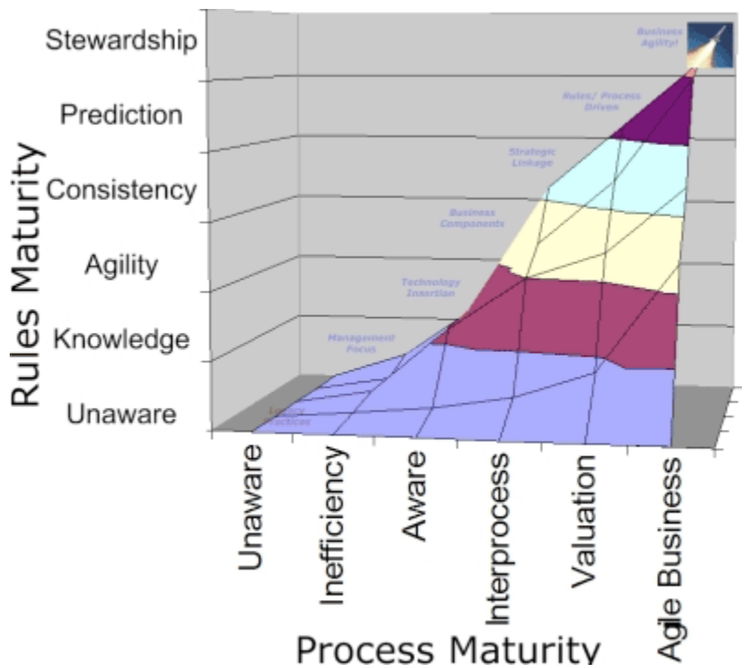
Maturity models, BPM & BR maturity models

- **BPM maturity model**
  - unaware
  - acknowledge operational inefficiency
  - intra-process automation
  - inter-process automation
  - enterprise valuation control
  - agile business

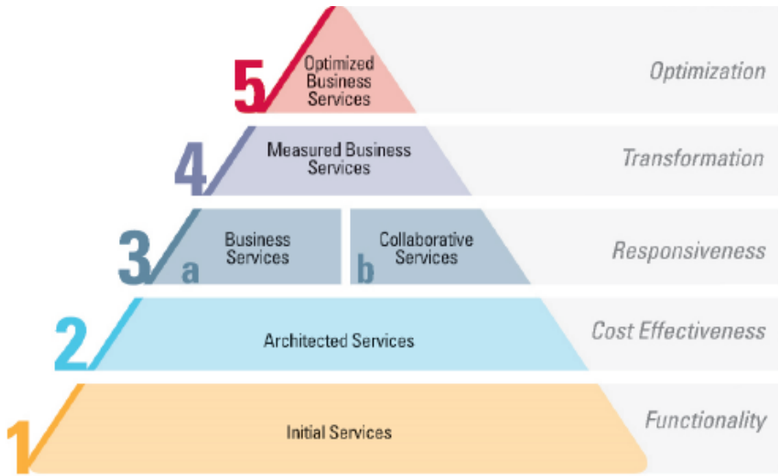
- **BR maturity model**
  - unaware
  - knowledge
  - agility
  - consistency
  - prediction
  - stewardship



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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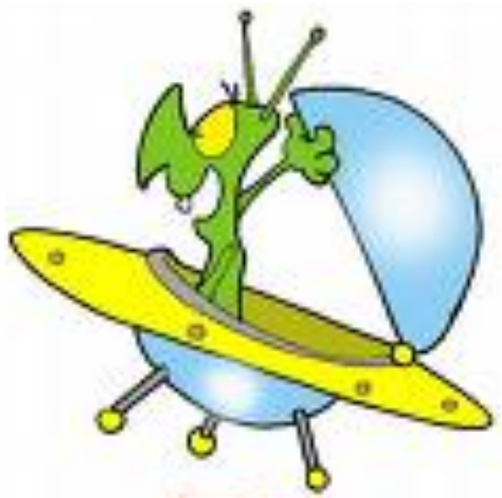
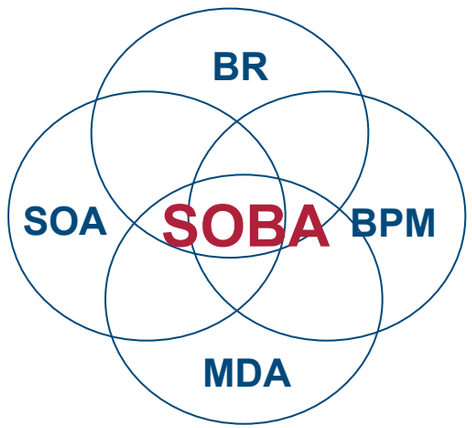
SOBA roadmap, is it a fantasy?

- **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?

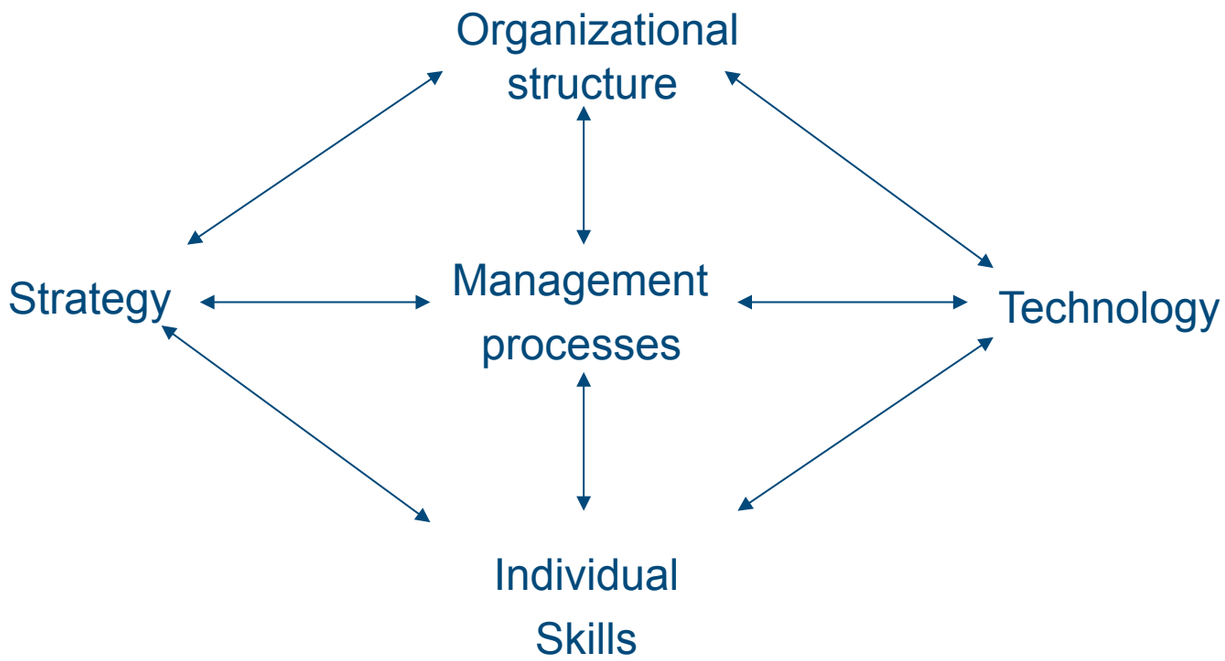
Backup

References

1. *John Lakos, Large Scale C++ Software Design, 1996*
2. *Daryl Plummer, Dynamic BPM versus agility: the competitive differentiator, Gartner BPM Summit 2009, London*
3. *Michael James Melnowsky and Jim Sinur, Gartner, 2006, BPM Maturity Model identifies Six Phases for Successful BPM Adoption*
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