



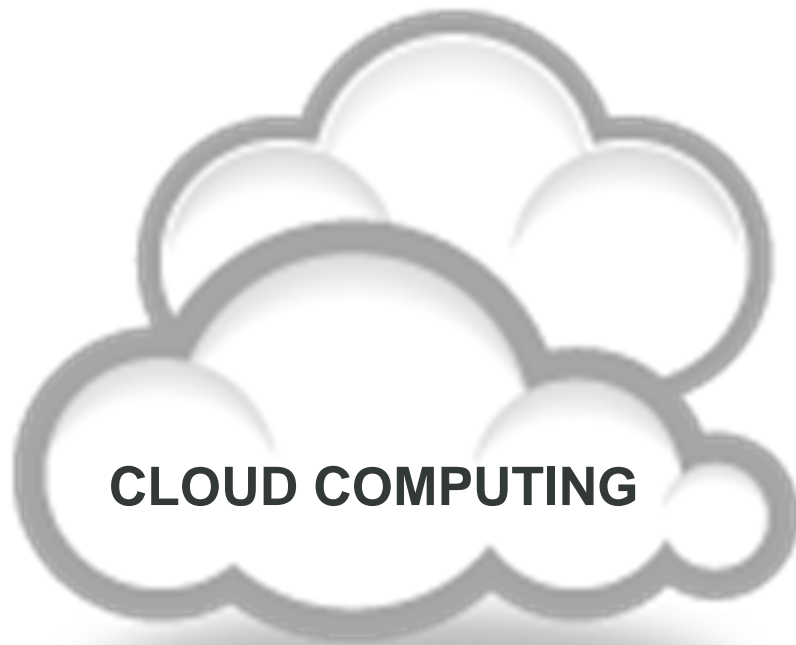
Using Technology to
Empower Users:

Towards Next Generation
Middleware for Model
Driven Development

ORACLE[®]

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Copenhagen IT University & UDI-ECO



CLOUD COMPUTING

- **SW as a Service (SaaS)**
- **On-Demand SW**

- **Business Process Management (BPM)**
- **Service Oriented Architecture (SOA)**

Agenda...

- 1 What pains are we trying to ease with technology (BPM & SOA)?
- 2 Oracle's BPM & SOA solution – *“today”*
- 3 A look into the near future – *“tomorrow now”*
- 4 A peek into an already enabled future – *“next generation”*

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Issues BPM/SOA are expected to solve according to IT users: Business Agility

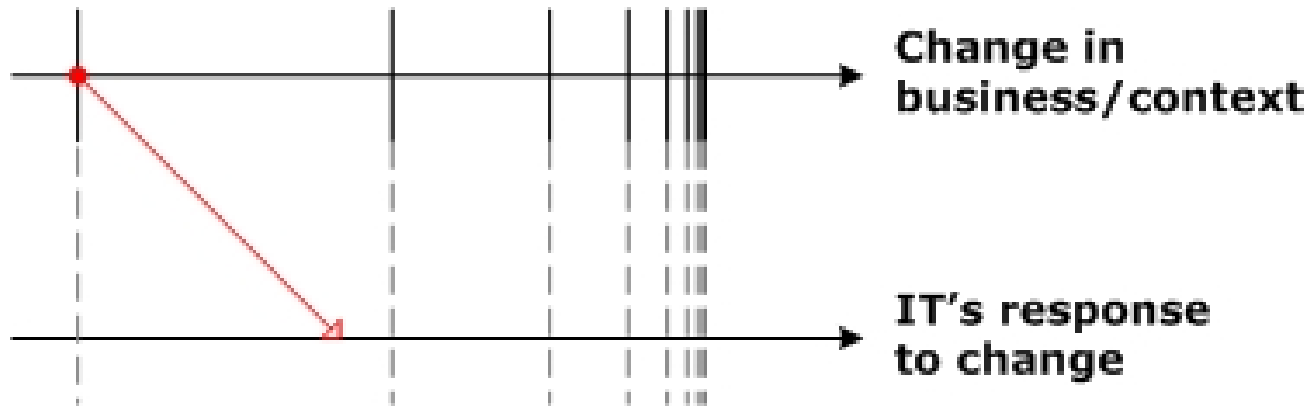
| Due to a need to... | We must become... | Through... |
|--|---|--|
| <p>CHANGE frequently and rapidly in an IT intensive enterprise</p> <p>CONSOLIDATE costly infrastructure, skills and practices</p> <p>COMPLY with many local and global regulations</p> <p>COOPERATE locally and globally</p> | <p>RESPONSIVE (in IT and as a business) to changes in business, its context, in technology and other business enablers</p> <p>EFFECTIVE in terms of time & costs</p> <p>STANDARDIZED with respect to both technology and business/branch standards</p> | <p>BUSINESS PROCESS MANAGEMENT (BPM)</p> <p>&</p> <p>SERVICE ORIENTED ARCHITECTURE (SOA)</p> |

Ref.: Dr. M. N. Akkøk 2000-2007, Studies/surveys at the University of Oslo & NR

Adaptability, Agility , Sustainability :

Need to change & respond is a requirement we need to understand well

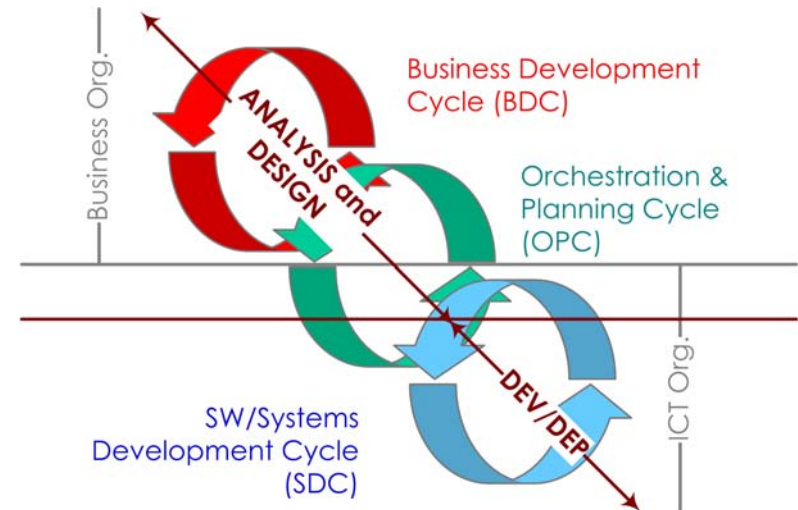
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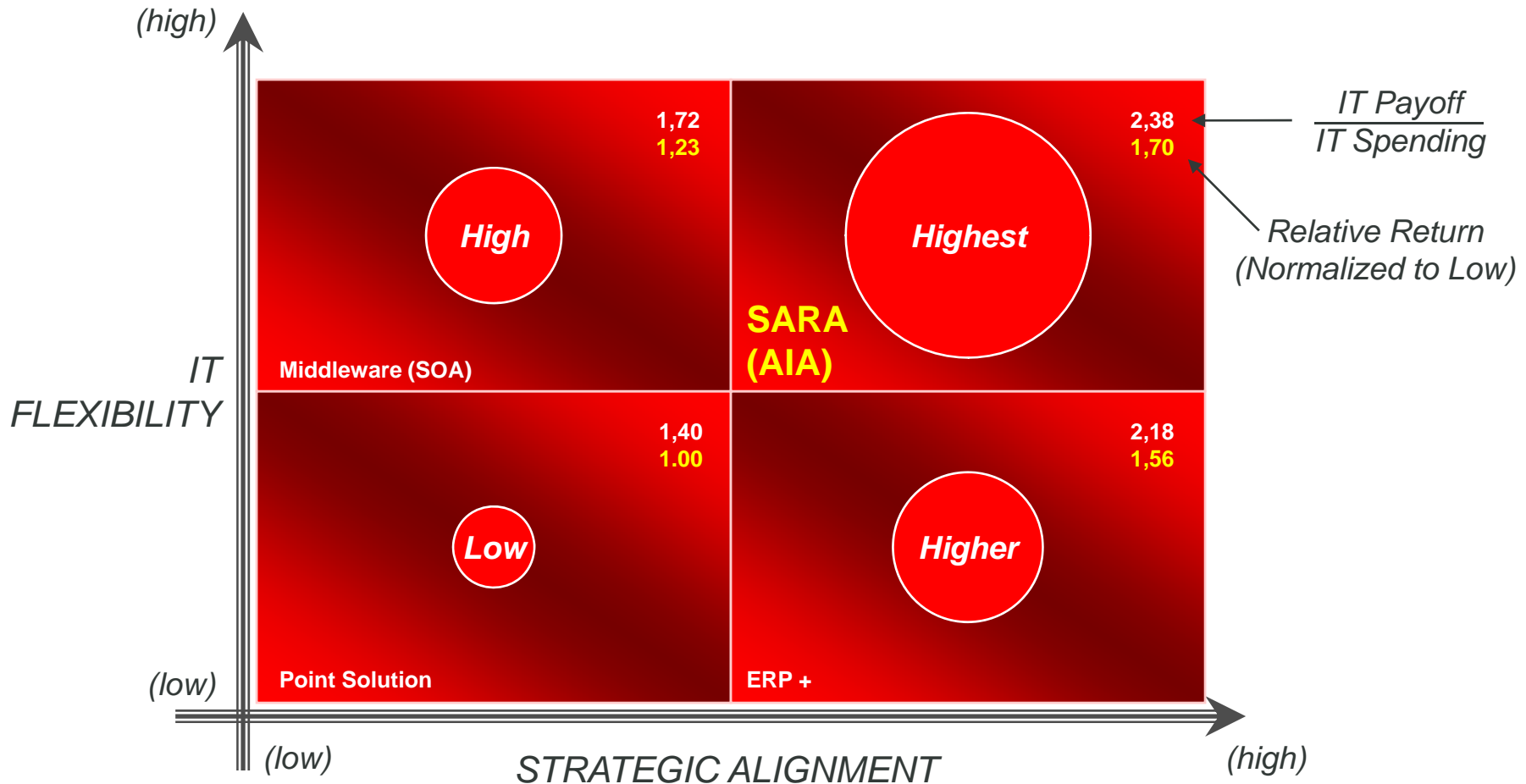
■ Insufficient time for requirements engineering, specifications

■ Instead, we need

- ▶ Live requirements, immediate specifications!
- ▶ Not only support for separate business & IT development cycles, but support for a single aligned/integrated Enterprise Development (ED) Cycle!



What improves IT pay-off refally? IT agility or adaptability & sustainability?



Ref.: IT Pay-Off according to Talon and Cramer, University of California at Irvine

Agenda...

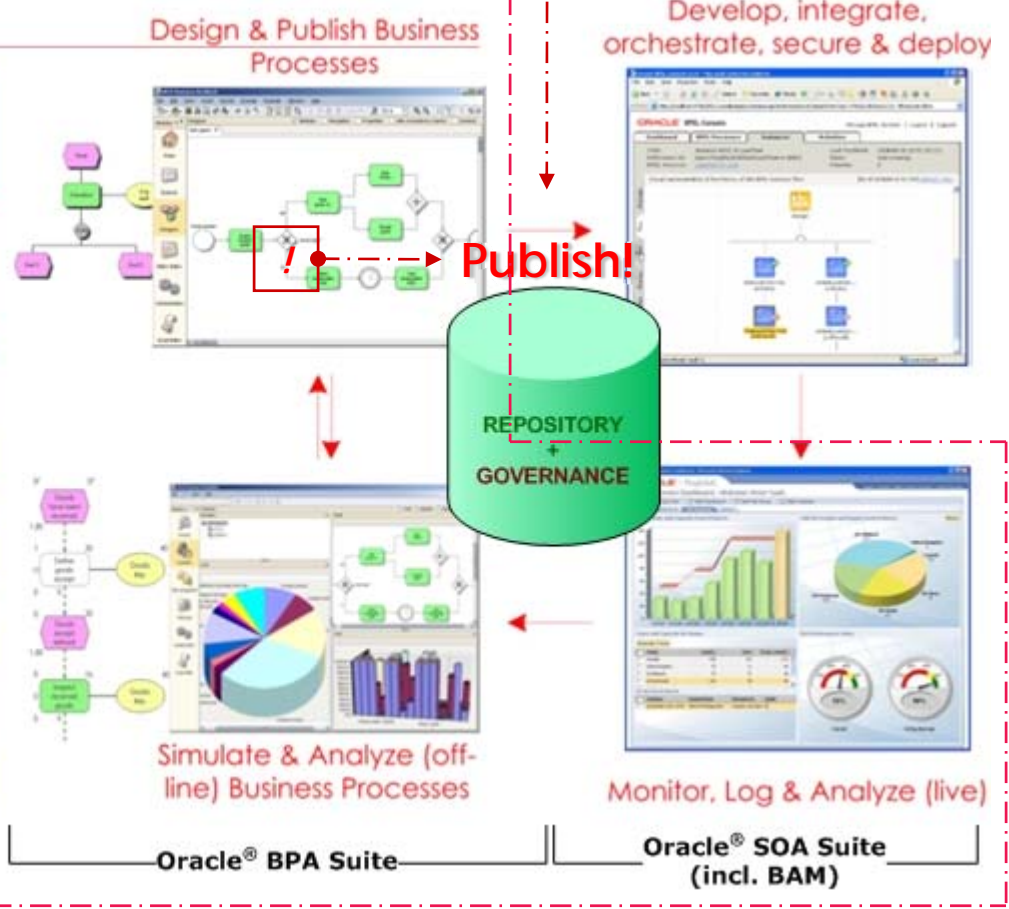
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Enterprise Development Life-Cycle for Agile/Aligned Business

Transform/Execute (lossless)!

Business Design = BPM, SOA, EA++

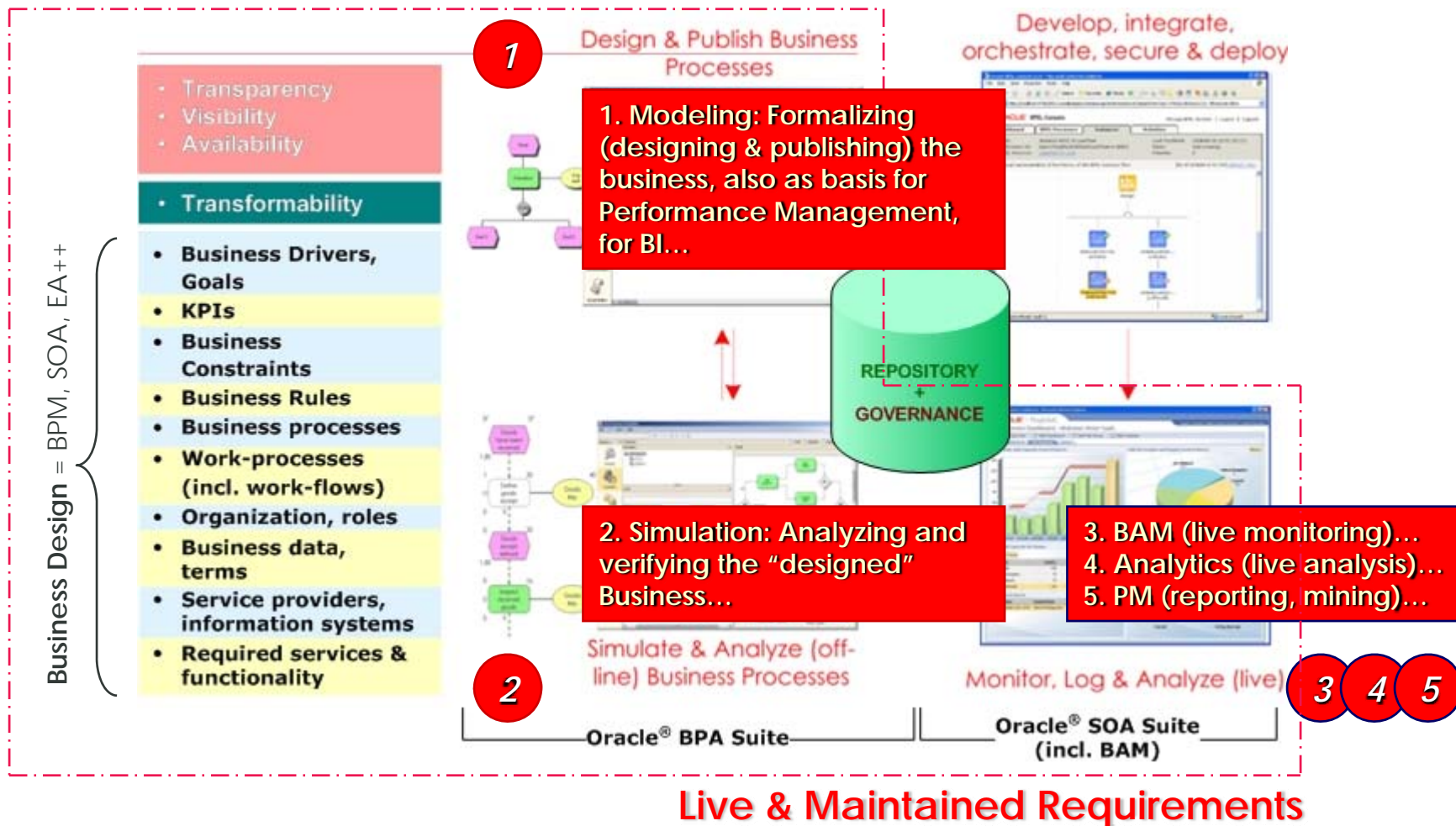
- Transparency
- Visibility
- Availability
- Transformability
- Business Drivers, Goals
- KPIs
- Business Constraints
- Business Rules
- Business processes
- Work-processes (incl. work-flows)
- Organization, roles
- Business data, terms
- Service providers, information systems
- Required services & functionality



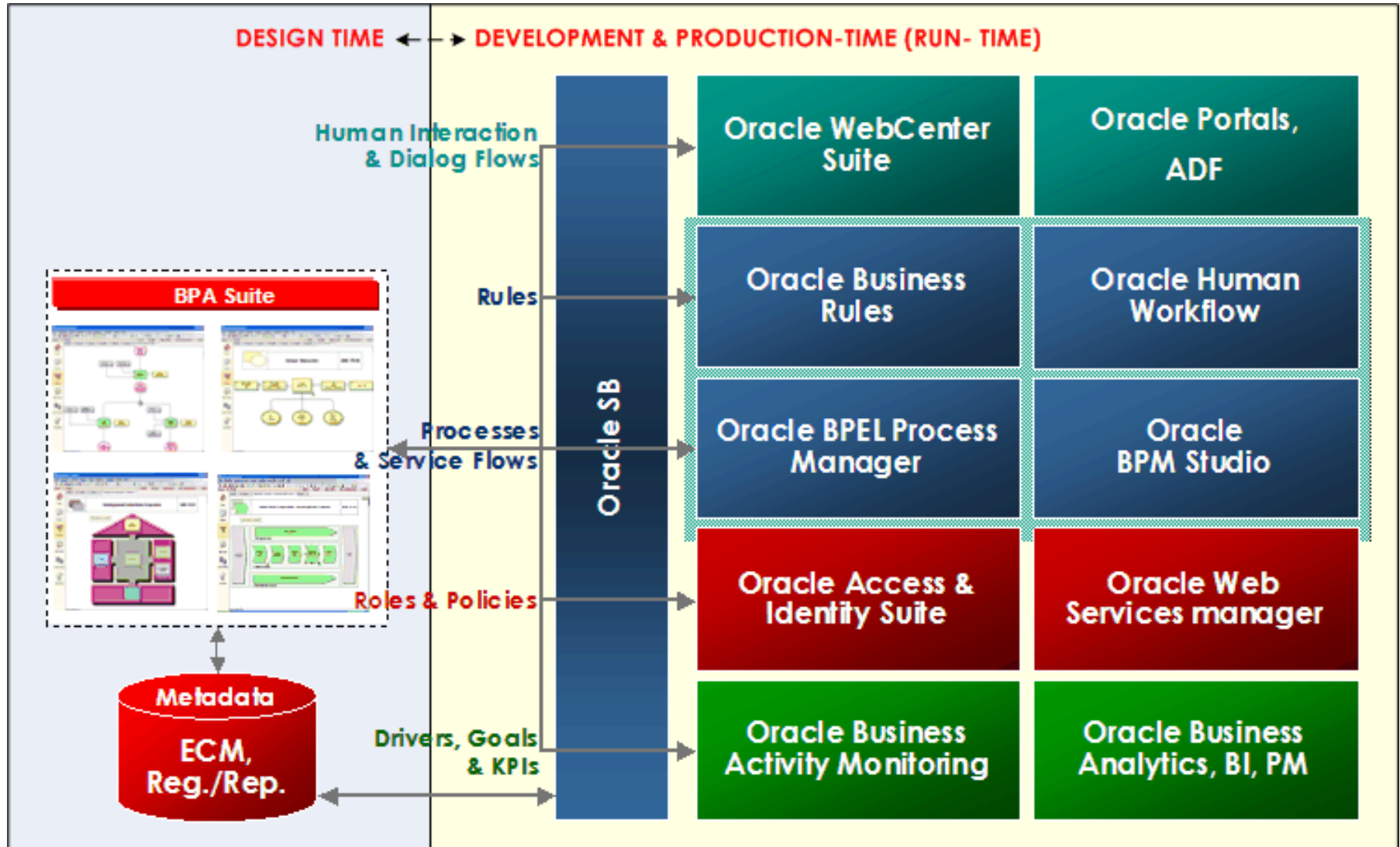
Modeling enterprise/business context

Live & Maintained Requirements

Enterprise Development Life-Cycle for Business Intelligence



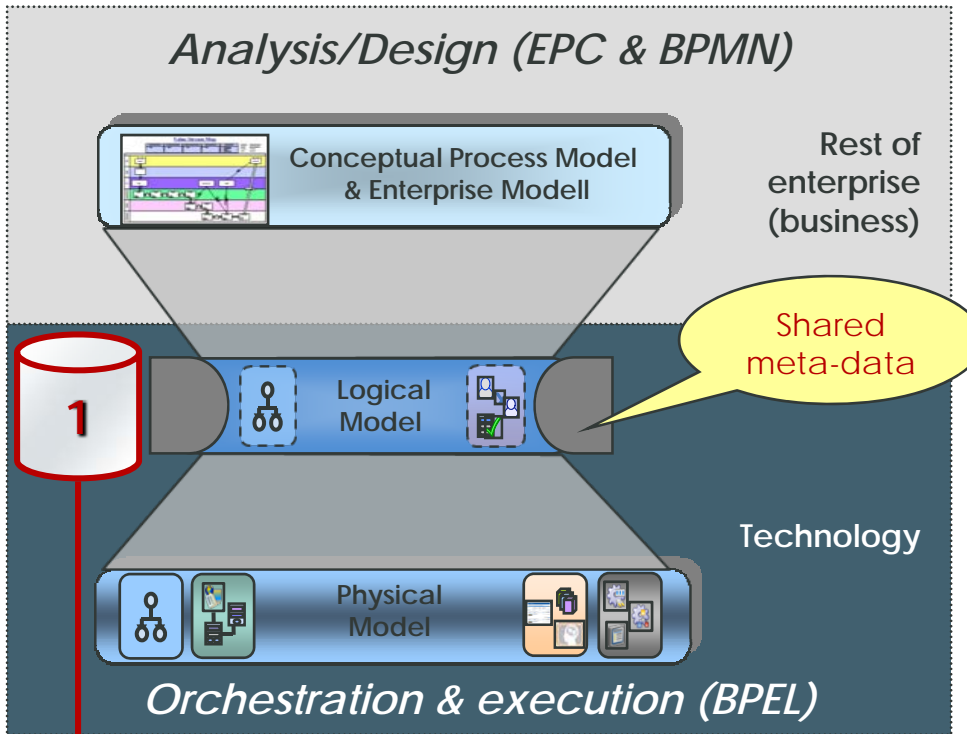
Implied IT eco-system



ONE common design/development-time (meta)model in ONE common repository!

ONE common run-time (meta)model in ONE common repository!

Required technology (just a bit of it)



NOTE!

ONE single model (*blueprint*)
in common "repository"!

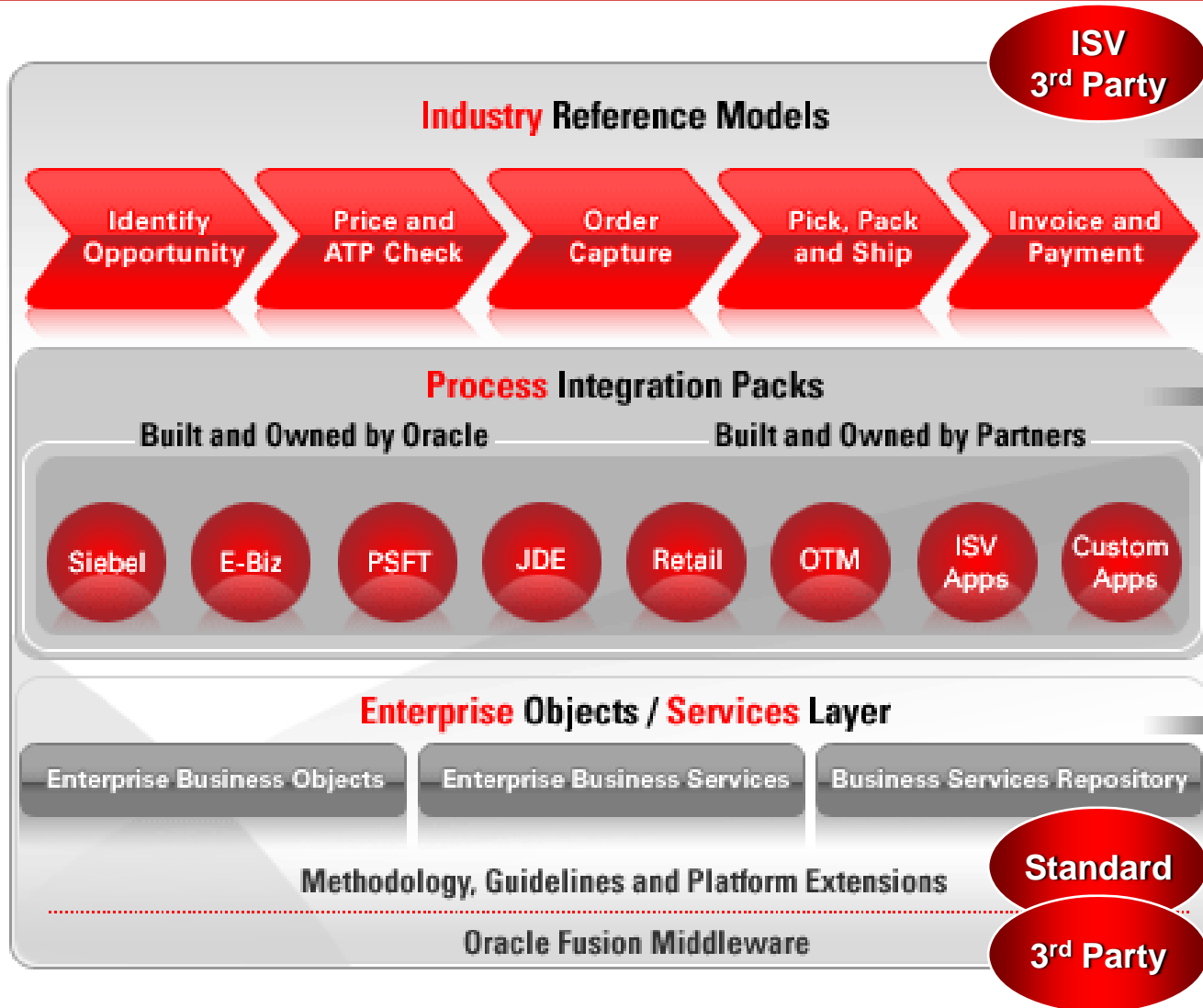
- ✓ Innovation
 - ▶ Introduces **shared meta-data** to facilitate "round-trip"
- ✓ Standards based
 - ▶ BPMN, BPEL, WS* etc.
- ✓ "Closed Loop BPM"
 - ▶ From process design, simulation, through implementation to process monitoring in real-time
- ✓ Cooperative design
 - ▶ Both process-centric & SOA application design

Aligning Business & IT is Aligning Analysis-Design,
Development-Deployment and Production-Maintenance

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SOA Compliant Application Reference Architecture (SARA) Example: Oracle® Application Integration Architecture (AIA)



- **Industry best practice processes** to optimize the business
- **Sustainable integration** to connect current and new applications
- **Pre-built SOA** to provide a framework for continuous innovation
- **3rd Party enabled**

- **STANDARDIZATION:** Active participation or initiation, also for change & upgrade support standardization
- **Std. Reference Models & Foundation Packs:** Telco (eTOM++), Bank, Finance, Insurance, ...

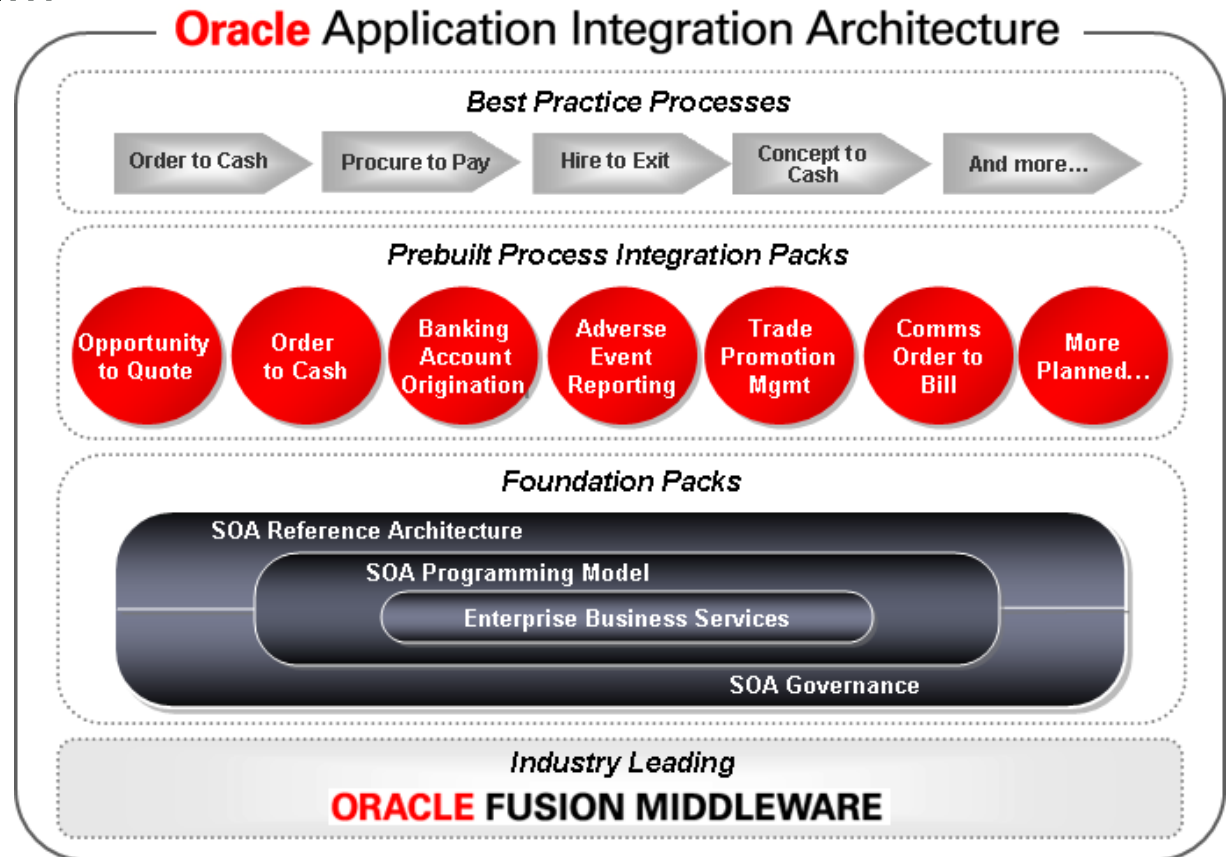
Modeling the whole enterprise is essential but very difficult...

What if someone gave you...

- A toolset for designing, developing & maintaining end-to-end processes (Process Integration Packs) with relevant
 - ▶ Development (programming) model...
 - ▶ Governance model...
 - ▶ Process model...
 - ▶ Service model...
 - ▶ Object model...

- **Aligned** across the enterprise?

**AIA
Foundation Pack**



Seriously reduced costs, complexity, time⁽¹⁾ : 20% in implementation, 55% in upgrading, 50% in maintenance⁽²⁾

If R is the number of **distinct roles** (and not persons) in the organizational unit that do business-relevant work, the time to document the work-process is approximately

$$T_{WP} = \pi \times \sum_{i=1}^{R-1} i = \pi \times \left(\frac{(R-1) \times R}{2} \right)$$

person-days. Note that this is a measure of the effort required.

Thus, assuming an organizational unit with 10 distinct business-relevant roles, documenting the work-processes of the organizational unit will take about 28.3 person-weeks (appr. 7 person months pr. business unit).

If O is the number of **business-value adding organizational units** in the enterprise (i.e, organizational units that contribute to business directly), the time to document only the high level business processes is approximately

$$T_{BP} = \pi \times \sum_{i=1}^{O-1} i = \pi \times \left(\frac{(O-1) \times O}{2} \right)$$

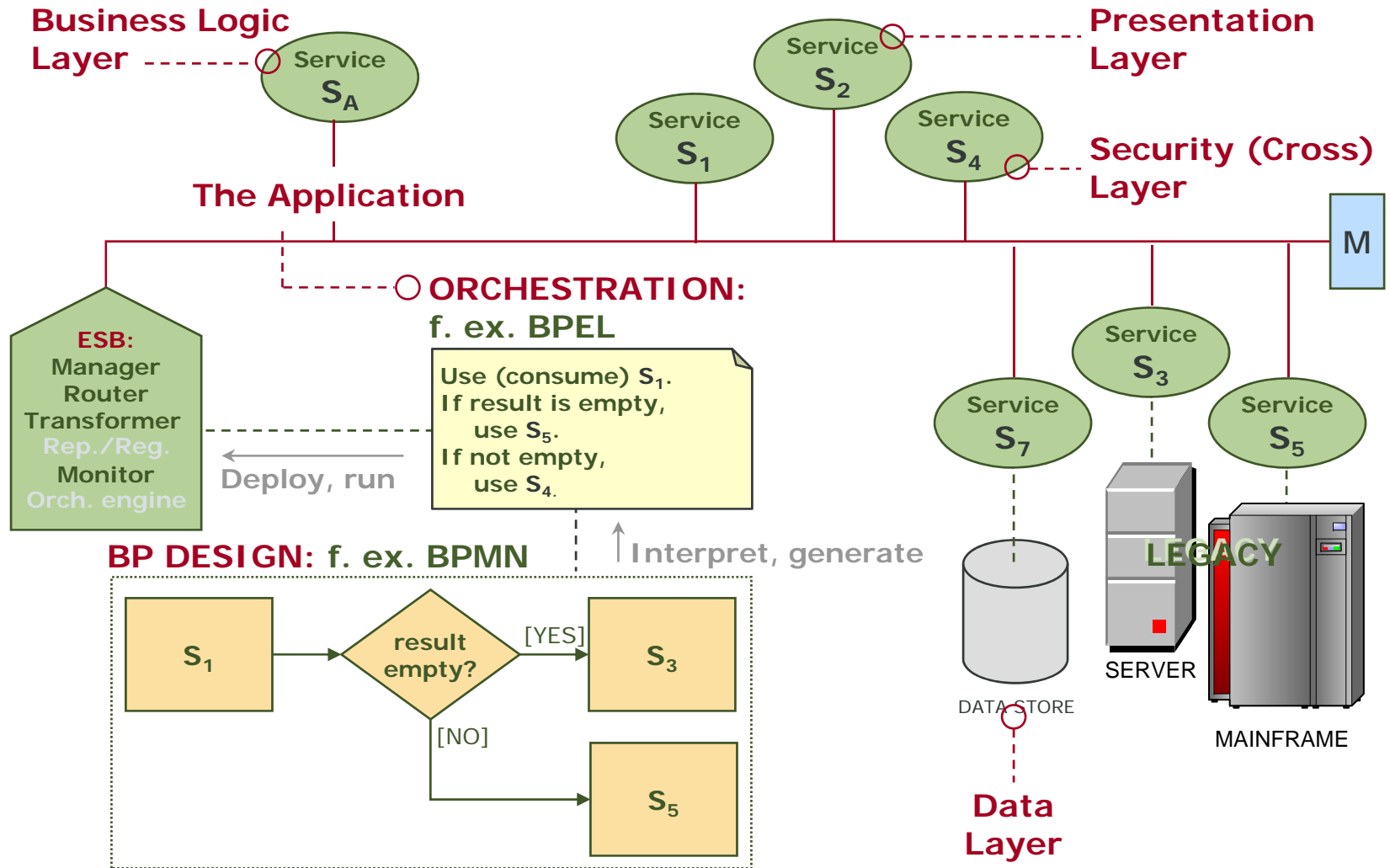
person-days.

For an organization with approximately **3000 employees** and an average organizational unit size of about 100 employees, the effort required to document **all processes** would then be **minimum 21,57 person-years** of effort.

(1) Source: Dr. M. N. Akkøk 2000-2007, studies/surveys at the University of Oslo & NR

(2) Source: 5 year TCO Study, Oracle Study on Composite SOA for Telecoms 2008

Implied Infrastructure



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Implications of the AIA FP: Next Generation Application Servers?

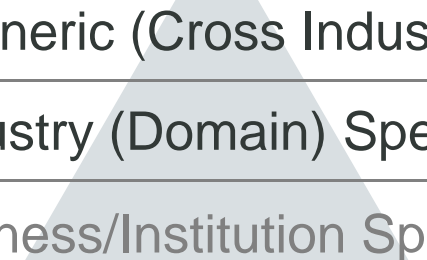
- In AIA FP, we have effectively raised the level of abstraction that we're dealing with in building applications: From “beans”, “server pages” etc. to
 - ▶ Business Processes
 - ▶ Enterprise Business Objects
 - ▶ Enterprise Business Services
- Could this be the way to next generation Application Servers (Business Servers?) for designing, developing, deploying and maintaining next generation BPM/SOA compliant applications that support full Enterprise Development life cycle?

Generic and Industry Specific AIA Foundation Packs

- Two kinds of AIA Foundation Packs:
 - ▶ **Cross Industry** (generic, for building all kinds of applications)
 - ▶ **Industry Specific**
 - ▶▶ Telecommunications (for building telco-specific applications)
 - ▶▶ Insurance (for building insurance-specific applications)
 - ▶▶ Banking (for building banking-specific applications)
 - ▶▶ Utilities/Energy (for building utilities/energy-specific applications)
 - ▶▶ Healthcare, Public ...

■ Q: How did NCR take the whole bank market initially?

■ A: Industry (banking) specific development tools



Generic (Cross Industry)

Industry (Domain) Specific

Business/Institution Specific

**SARA or
AIA++ = An open spec
to replace current JEE spec?**

Oracle BPM/SOA Roadmap (Envisioned)

"Today"

Already best, and
with an unprecedented
potential

- Best-of-breed portfolio
- Supports existing best practices
- Customers leveraging today

"Tomorrow Now"

- AIA (BPM/SAO ref. app. arch.)
- AIA Foundation Pack (tool-box for developing AIA-compliant apps & systems)
- Standardized first-cut Business Objects & Business Services
- Model-driven
- Business-centric

"Next Generation"

Open...

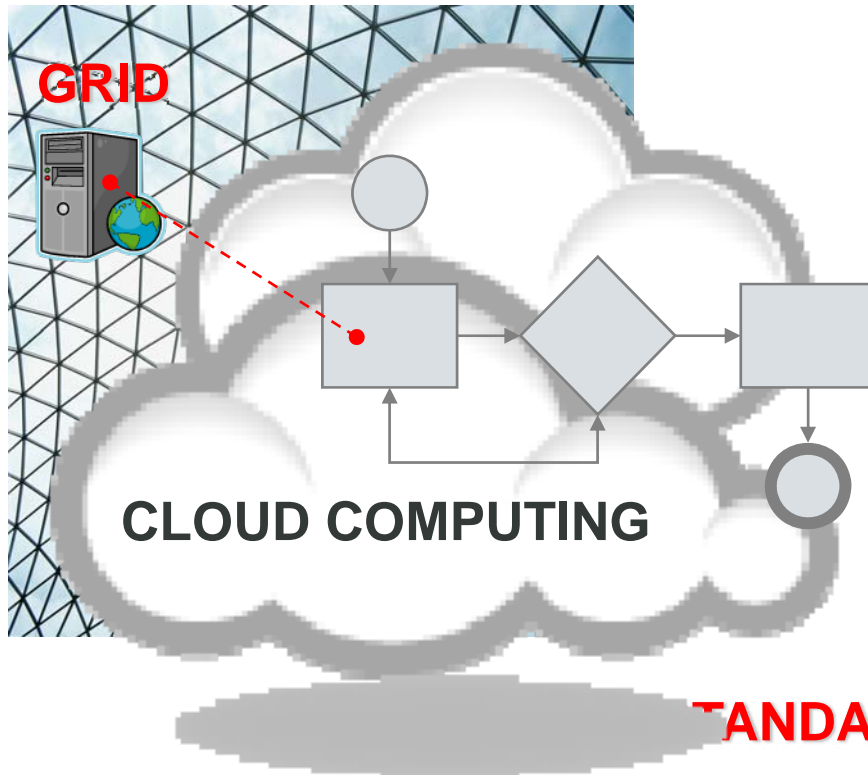
- All ref. models of AIA FP are standardized
- AIA FP spec is opened as the spec for next generation app. servers (or business servers)

Complete...

- All AIA FP service definitions are implementable by all service vendors

Integrated!

Back to SW technologies we are talking about...



**They all
relate!**

**New application
(business) servers
& technologies**

- SW as a Service (SaaS)
- On-Demand SW
- Business Process Management (BPM)
- Service Oriented Architecture (SOA)

Q & A

QUESTIONS
ANSWERS



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