



OBJECT MANAGEMENT GROUP

OMG BPM specifications

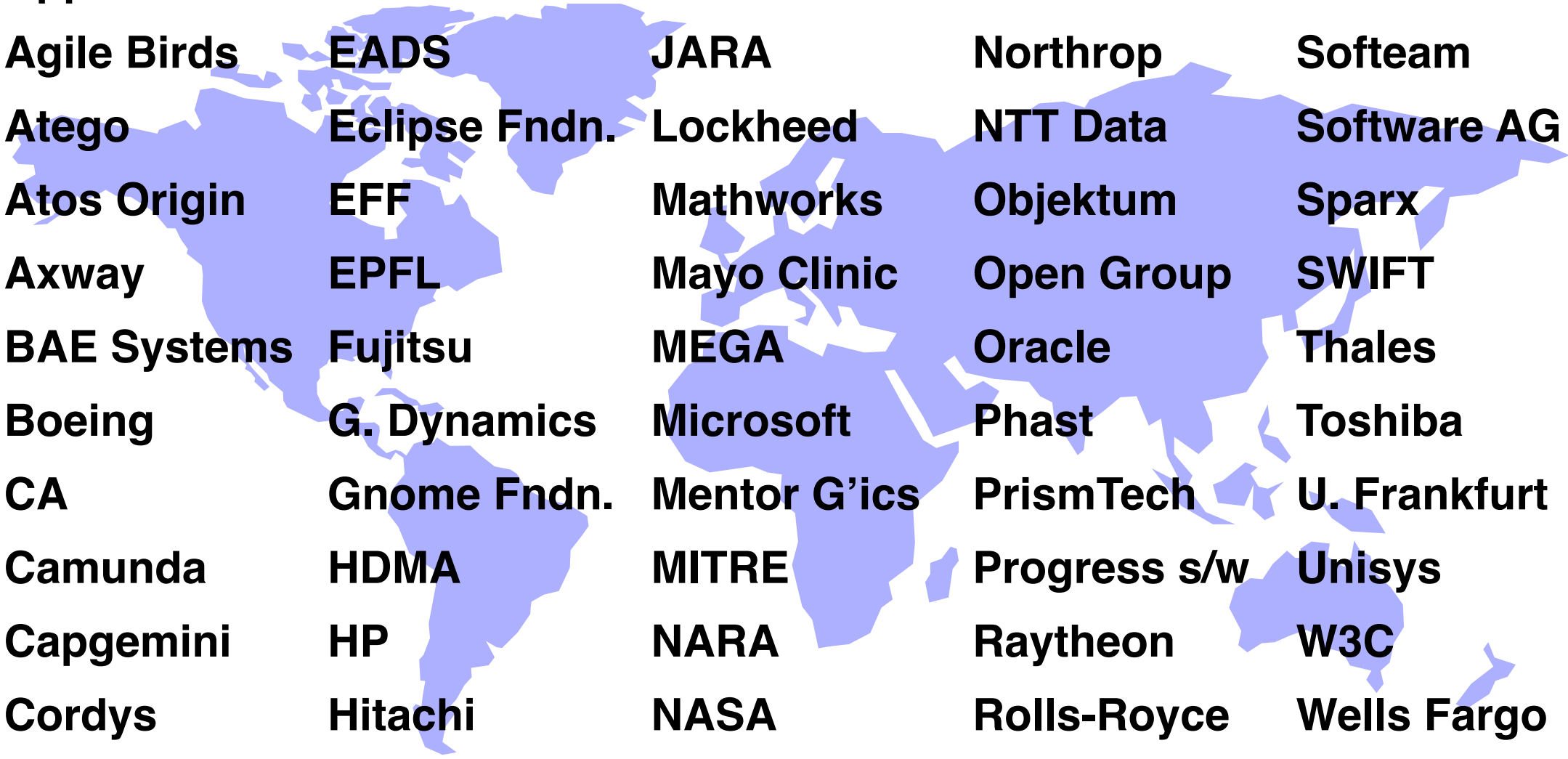
Andrew Watson
OMG Technical Director

Introducing OMG

- A successful forum for creating open integration standards in the computer industry
 - Platforms: BPMN, SBVR, UML, CORBA & related work
 - Domain: Finance, C4I, Healthcare, etc.
- An industrial consortium with vendor and user members
 - Implementation must be available from OMG member
- Interfaces freely available to all
 - Visit <http://www.omg.org>
- Decisions taken by members



Worldwide Membership



Adaptive	Darmstadt U.	INRIA	NIST	Saab Sys.
Appian	Deere & Co.	Intalio	Nokia	SAP
Agile Birds	EADS	JARA	Northrop	Softeam
Atego	Eclipse Fndn.	Lockheed	NTT Data	Software AG
Atos Origin	EFF	Mathworks	Objektum	Sparx
Axway	EPFL	Mayo Clinic	Open Group	SWIFT
BAE Systems	Fujitsu	MEGA	Oracle	Thales
Boeing	G. Dynamics	Microsoft	Phast	Toshiba
CA	Gnome Fndn.	Mentor G'ics	PrismTech	U. Frankfurt
Camunda	HDMA	MITRE	Progress s/w	Unisys
Capgemini	HP	NARA	Raytheon	W3C
Cordys	Hitachi	NASA	Rolls-Royce	Wells Fargo
CSC	IBM	NEC	RTI	(300+ more)

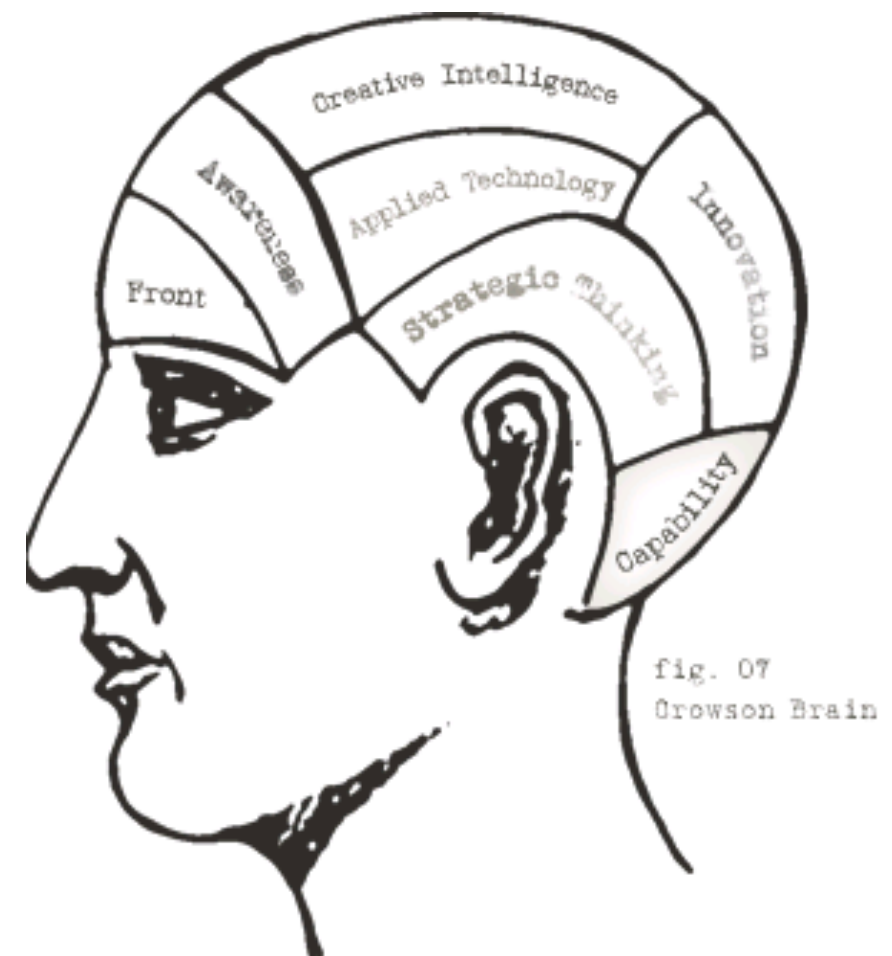
Who knows the Enterprise?

- **Nobody knows the whole company like the CIO**
 - **André Mendes, Special Olympics**



How do we know?

- Most divisions only know their own sales, development, operations
- Because IT automates processes throughout the enterprise, we know the enterprise
- Most importantly, we implement business processes that support business capabilities



Optimising the Enterprise

- We understand business process optimisation: streamlining processes, leaning processes, greening processes
 - **Precise descriptions of business processes are a prerequisite to understanding & optimising them**
- Successful 21st century organisations won't have "IT" departments
 - **"IT" must move from "partnership" & "alignment" to being integral to the business organisation**
- Our role: recognising, precisely defining, capturing, storing, reusing and optimising business processes

Some observations

- Colgate Palmolive doesn't have an Electric department
 - ... any more
 - ... but there is a caretaker to change the light bulbs
- Amazon doesn't have an Information Technology department
 - ... in the usual sense
- What is Information Technology's role in your organisation?
 - “Cloud Technology” is a new business model where businesses outsource IT provision
 - Are you just changing light bulbs?



New rôles for IT experts

- In a world of utility IT provided via “The Cloud”, in-house IT experts must increasingly speak the language of the business & focus on business capabilities
 - Be the process improvement expert in the business
 - Look for opportunities to optimise, not just automate
 - Leverage & participate in the definition of standards for your company, your market, your vertical, and across the industry
 - Share experiences (good and bad) with your peers in your vertical and elsewhere

Business Process Management

- The key component of a new approach to IT
- Business Process: a sequence of activities performed by people and software systems in order to achieve one of an organisation's goals or sub-goals
- Business Process Management (BPM): a systematic approach to discovering, documenting and continuously improving an organisation's business processes
 - BPM activities seek to make business processes more effective, more efficient, and more capable of adapting to an ever-changing environment

BPM: a growing market

- **Business Process Management Suite (BPMS) revenues totalled \$1.9 billion in 2009 (Gartner)**
- **BPMS segment grew 15% in 2009, 9% in 2010 (Gartner)**
- **BPM software market expected to grow at 13% p.a. from 2008 through 2013 (IDC forecast, 2009)**



BPM vs. Workflow Management

- **“Workflow” usually used to describe operation automation, often within one IT application or small group of applications**
- **BPM seeks to define, plan, execute, measure and manage business processes holistically, independently of any one application**
- **BPM usually seen as a superset of workflow management, including feedback on how effectively the process ran**
 - **Provides the opportunity to revise the process and execute it more effectively the next time**

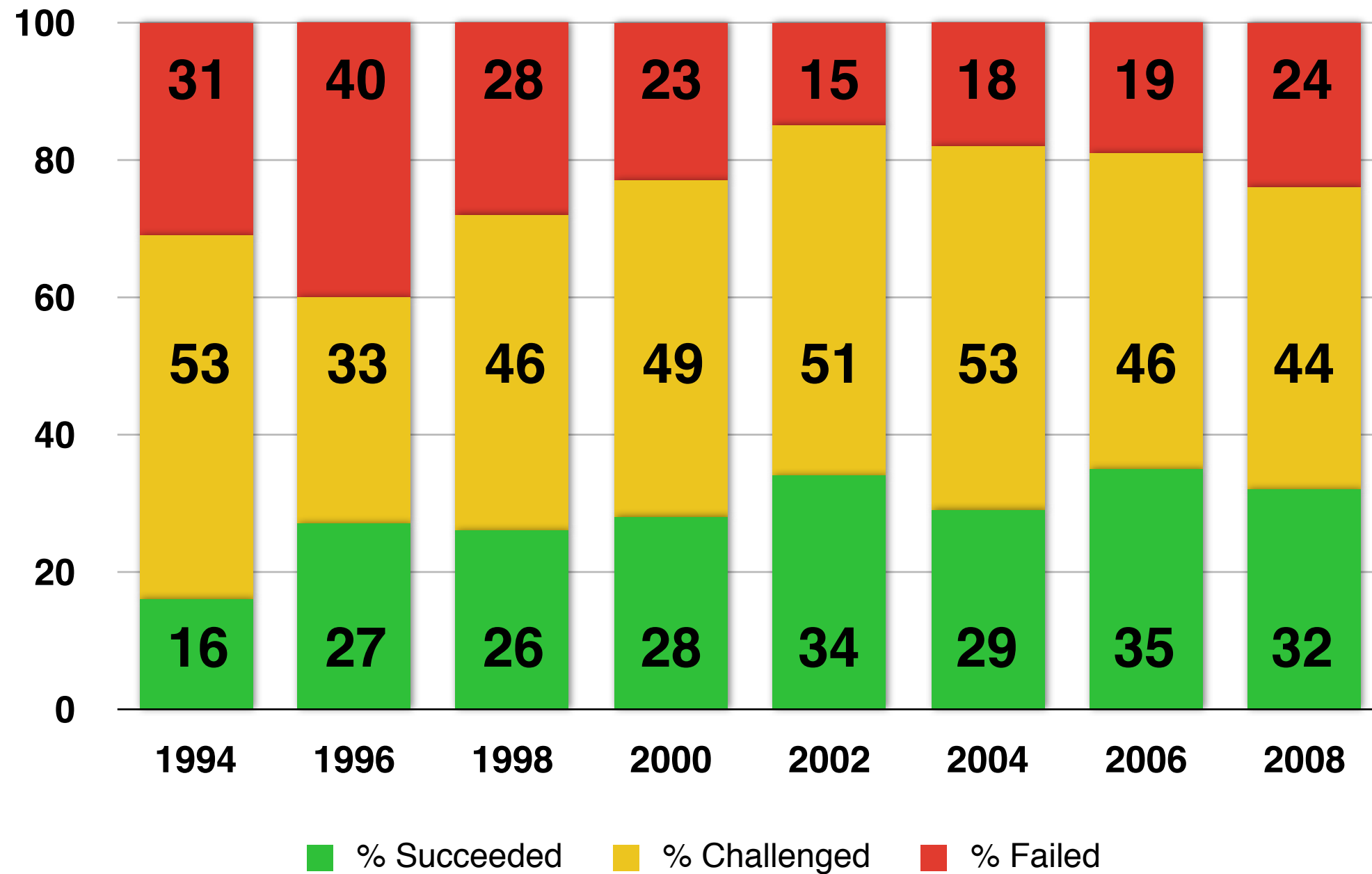
BPM vs. Enterprise Application Integration

- **EAI relates to technology layer, addresses IT issues**
 - **Programming tools to reduce amount of custom integration software that would otherwise need to be written**
- **By contrast, BPM is oriented around business**
 - **Defines processes at business strategy level**
 - **Automates processes to execute that strategy**
 - **Provides business managers with means to monitor, analyse and improve processes' operation**
 - **Helps resolve business problems as they occur**
- **Nevertheless, 2008 customer survey showed 65% of BPM deployments integrate three or more systems (Source: BEA)**

BPM, SOA and “The Cloud”

- **SOA: building business systems from independent services**
 - A key design technology for the Cloud
 - Service can perform specific, individual business function
 - “Orchestrated” in different ways to implement processes
 - But ... how orchestration code designed sometimes vague
- **Identifying processes is harder than SOA implementation**
 - Delaware Electric Coop: 55% project effort identifying & modelling processes, 20% coding, 25% testing & deploying
- **BPM helps analyse business needs, design SOA solutions**
 - “BPM is SOA's killer application, SOA is BPM's enabling infrastructure” – Ismael Ghalimi

CHAOS Chronicles: IT project success rates



Source: Standish Group

Business Process Maturity Model (BPMM)

- Some spectacular “IT catastrophes” actually stem from the state of the organisation
 - There are no stable, consistent requirements to be gathered
 - Target organisation’s business processes are inconsistent, ad-hoc, not repeatable or deliver hard-to-predict results
- BPMM - business analogue of CMU Capability Maturity Model (CMM) used by organisations that create software
- Aims to measure and help improve organisational readiness for technology deployment
- BPMM 1.0 an OMG standard

BPMM levels

- 1 **Initial:** processes performed in inconsistent, sometimes ad- hoc ways, with results that are difficult to predict
- 2 **Managed:** work within local workgroups performed in a repeatable way (but groups may use different procedures)
- 3 **Standardised:** common, standard processes created from organisation's best practices used across organisation
- 4 **Predictable:** process performance measured to control variation; outcomes predictable from intermediate states
- 5 **Innovating:** organisations identify gaps between current capability & objective, implement changes to address them

Business Motivation Model (BMM)

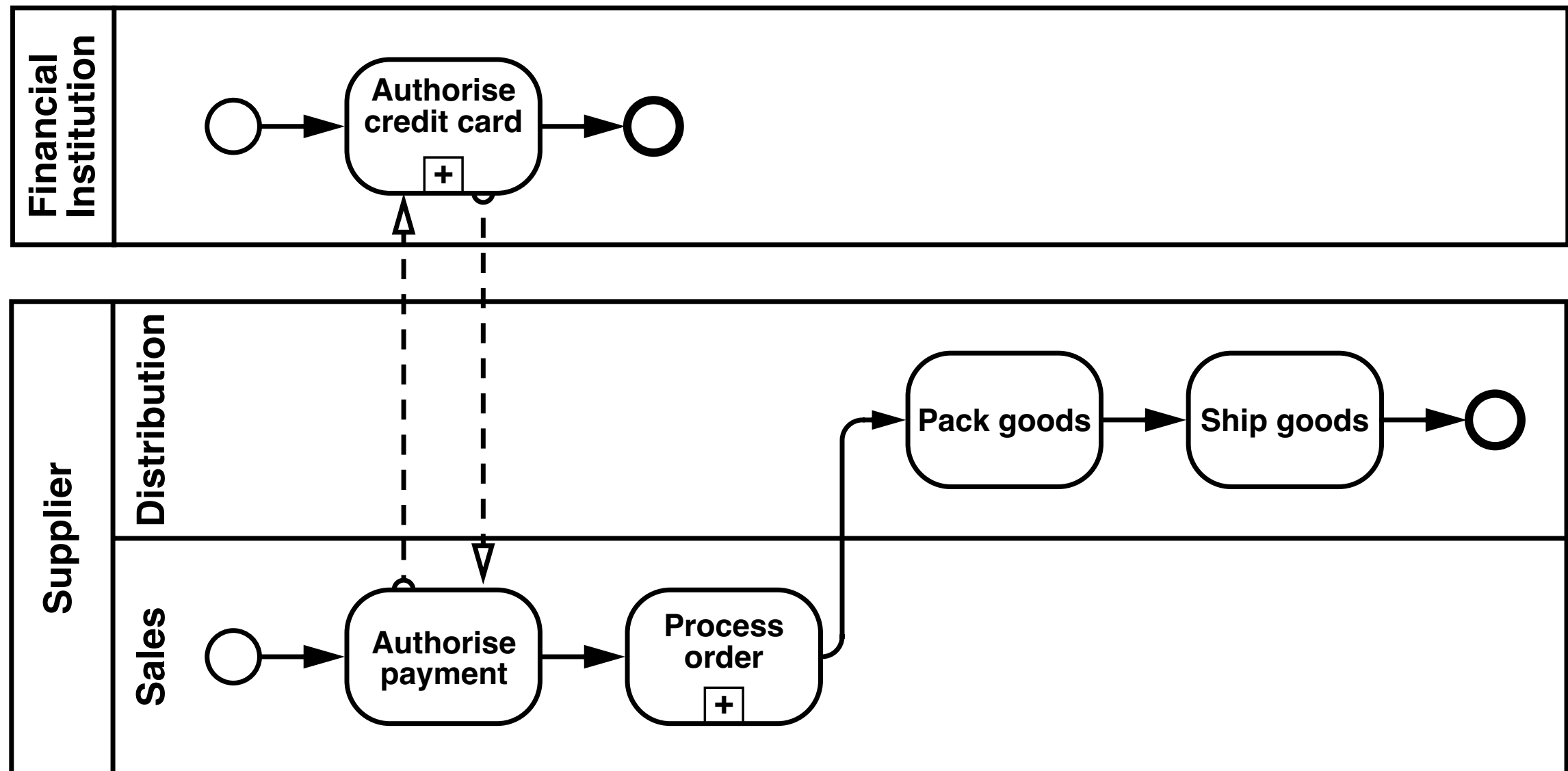
- **Contains and organises business plan elements**
 - **Ends: What enterprise wishes to achieve**
 - **Means: How enterprise will achieve Ends (strategies, tactics, policies, rules)**
 - **Influencers, and assessments of their impact (strengths, weaknesses, opportunities, threats)**
- **Framework for modelling business plan before system design**
 - **Refers to external process, rule, vocabulary & organisation models defined using other standards (e.g. SBVR, BPMN)**

Business Process Modelling Notation

- **Easy-to-understand syntax for capturing business processes**
 - **Standardised, flowchart-like**
- **Readable by all stake-holders**
 - **Business analysts who create processes, developers who implement software, managers who monitor processes**
 - **Common language to bridge the communication gap**
 - **... but also precise**
- **Aims to unify & grow Business Process Modelling market the way UML unified software modelling market**
 - **Single syntax used by multiple vendors' tools**



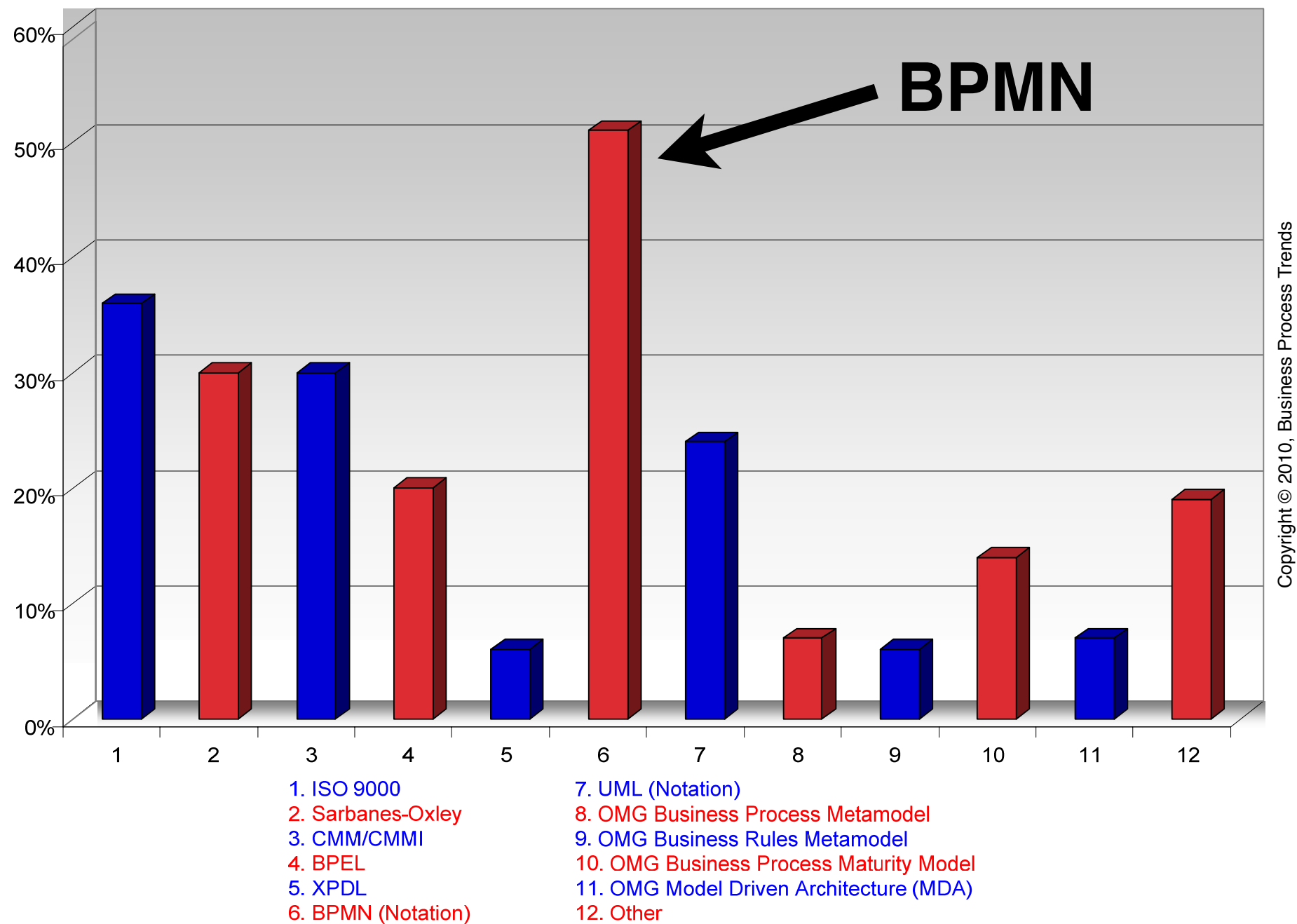
Business Process Modelling Notation



BPMN history

- **BPMN 1.0 published by BPMI in early 2005**
 - **Exports BPEL to drive process automation engines**
- **BPMI merged with OMG in June 2005**
 - **First OMG revision (BPMN 1.1) published January 2008**
 - **BPMN 1.2 revision published January 2009**
- **BPMN 2.0 submission process completed in June 2009**
 - **Formally published January 2011**
 - **Preserves BPMN syntax, introduces formal metamodel**
 - **Includes extensions for Choreography**
- **Ongoing maintenance via OMG Revision Task Force**
 - **Please report any bugs you find (URL at end)**

Most widely-used process standard

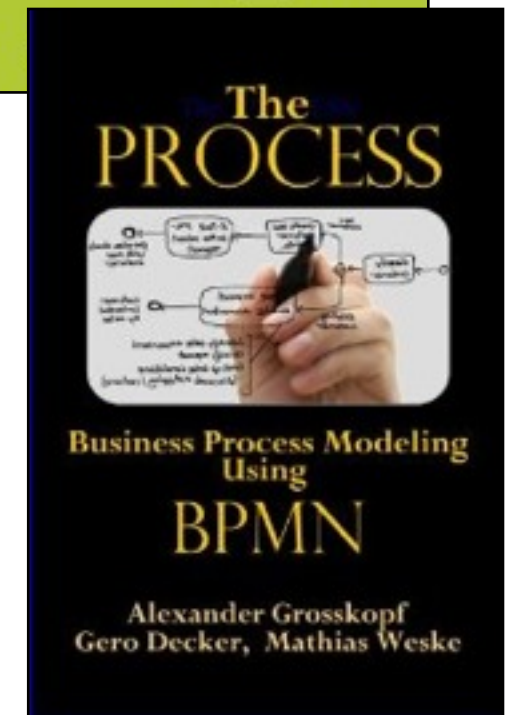
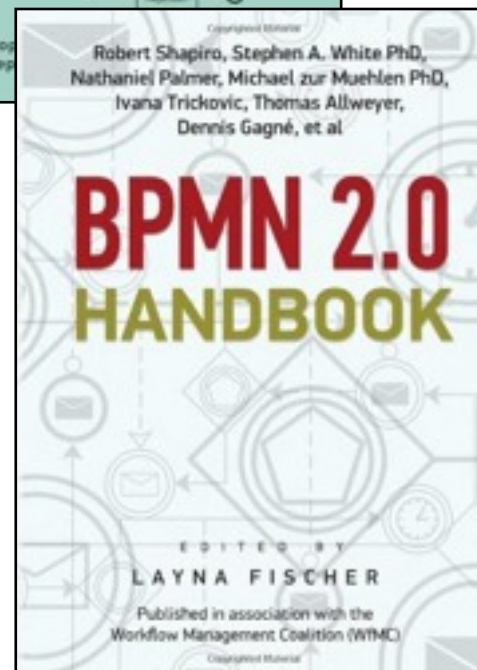
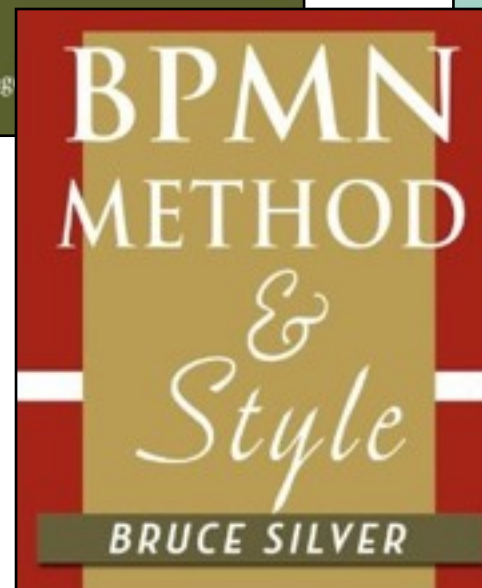
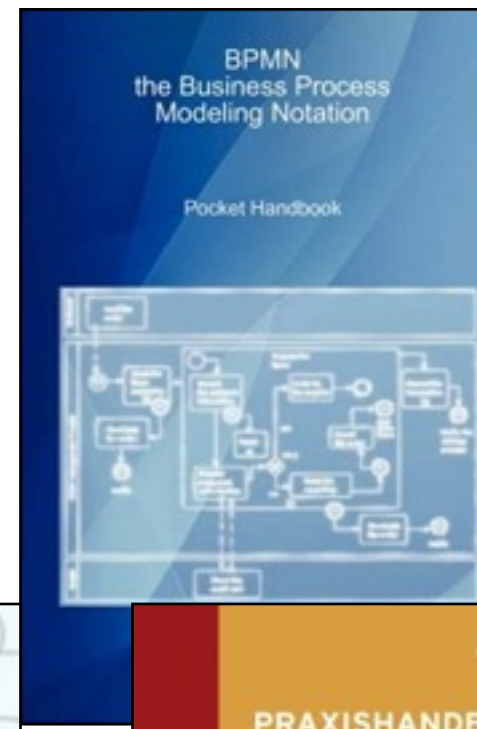
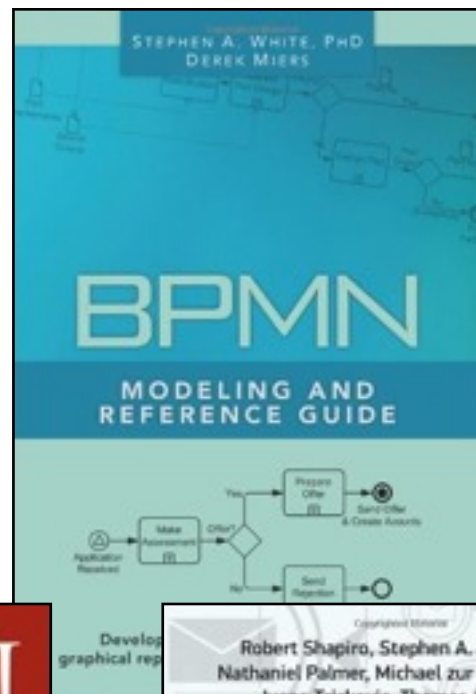
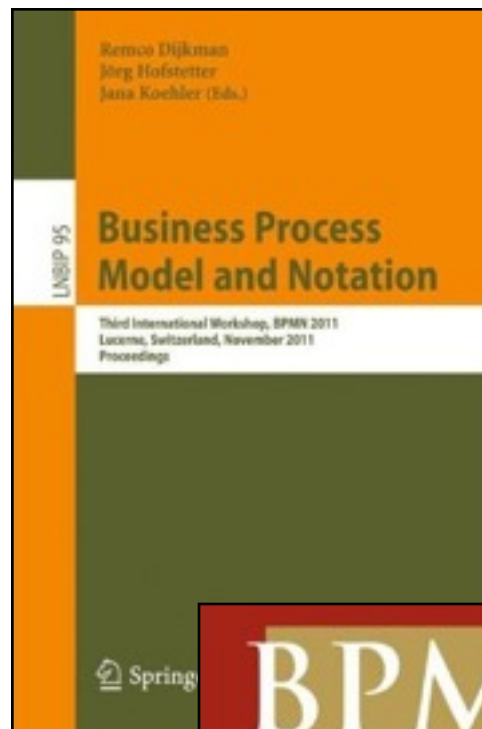


Source: www.bptrends.com

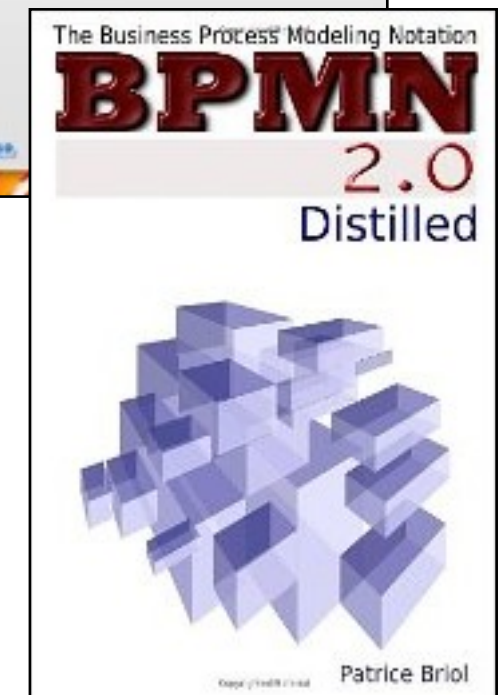
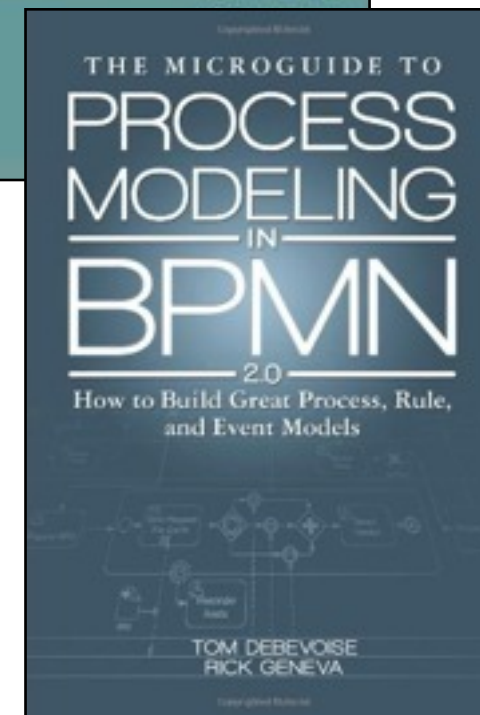
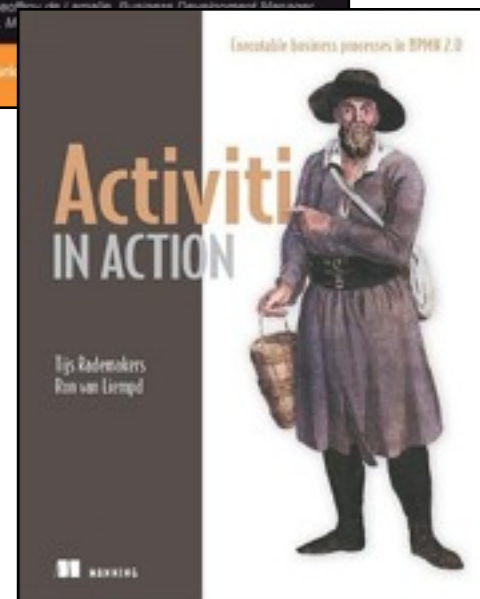
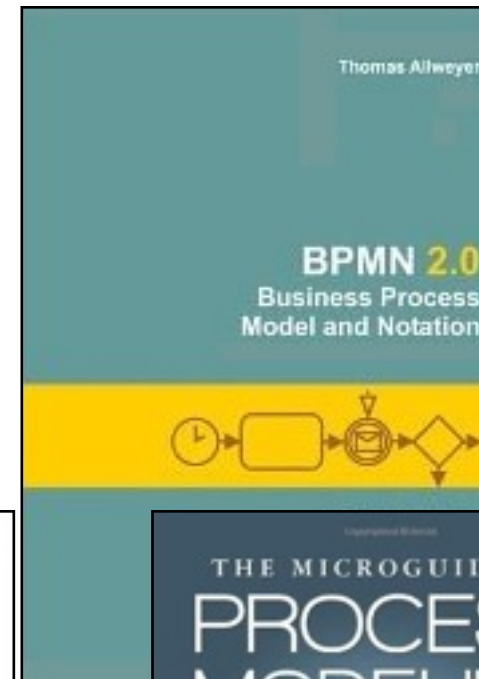
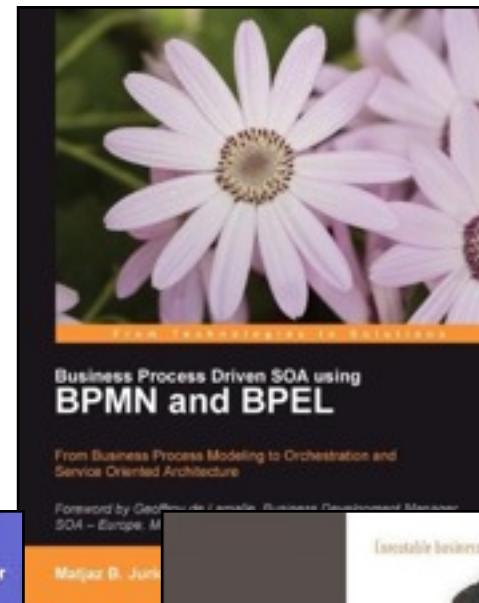
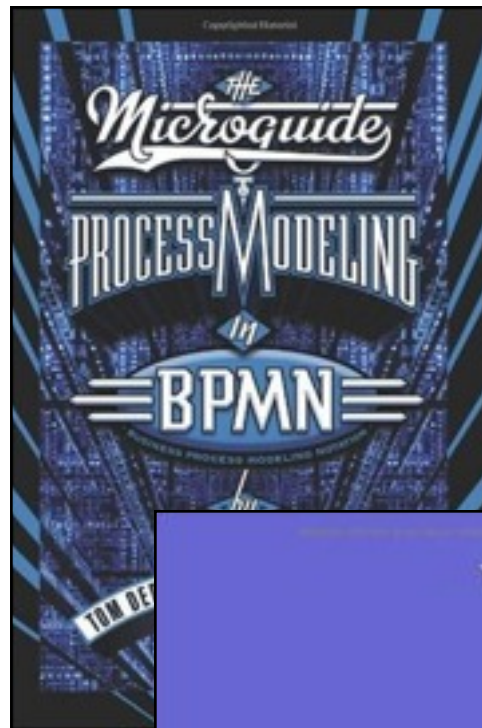
BPMN ecosystem

- **Complete ecosystem is a symptom of, and a driver for, success:**
 - **Specification: freely available, mainly for implementers**
 - **Implementations: available from many vendors (& OSS)**
 - **Books: “how to” guides aimed at users, not implementers**
 - **Training: available from several established providers**
 - **Certification: “OMG Certified Expert in BPM”**
 - **Conferences**
 - **Discussion fora, etc, etc**
- **72 BPMN implementations that I know of, 4 more planned**
 - **There may be more!**
 - **See: <http://www.bpmn.org/>**

BPMN books



... and more books

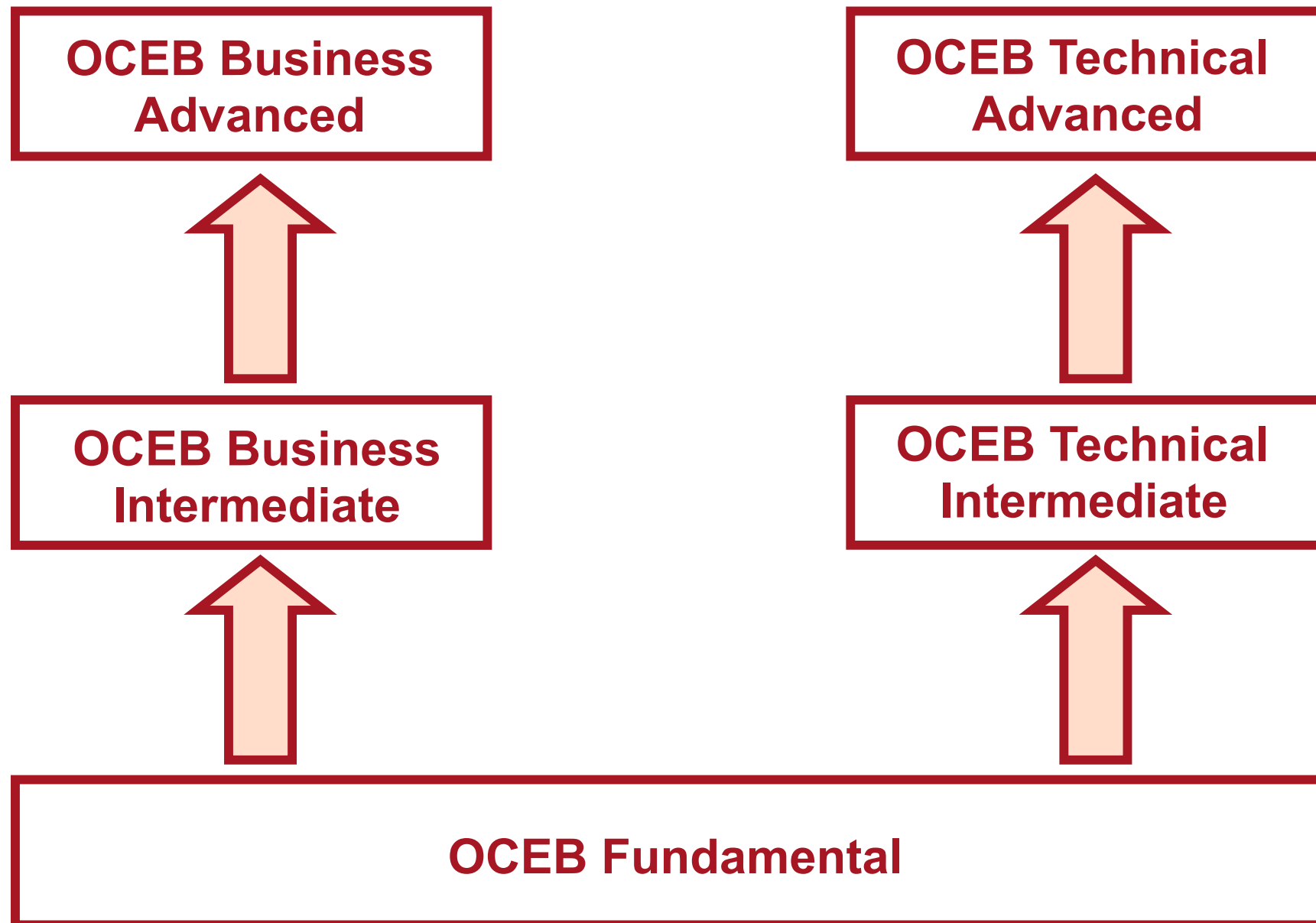


OCEB - OMG Certified Expert in BPM

- Five vendor-neutral exams & Certifications
- Jointly developed with UML Technology Institute in Japan, available internationally
- Exams written by 25 BPM experts
- Testing provided by Pearson Vue
- OMG publishes directory of certified professionals



Dual certification tracks, little overlap




























Building a certification programme

- Requires these three things:
 - A team of domain experts to determine the topical coverage, and write and review the test items
 - A “psychometrician” – testing expert who teaches the domain experts how to write good items, and to perform quality tests
 - A test delivery company to make the tests available around the world, always in a secure environment



OCEB Authors - many thanks

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Semantics of Business Vocabulary & Rules

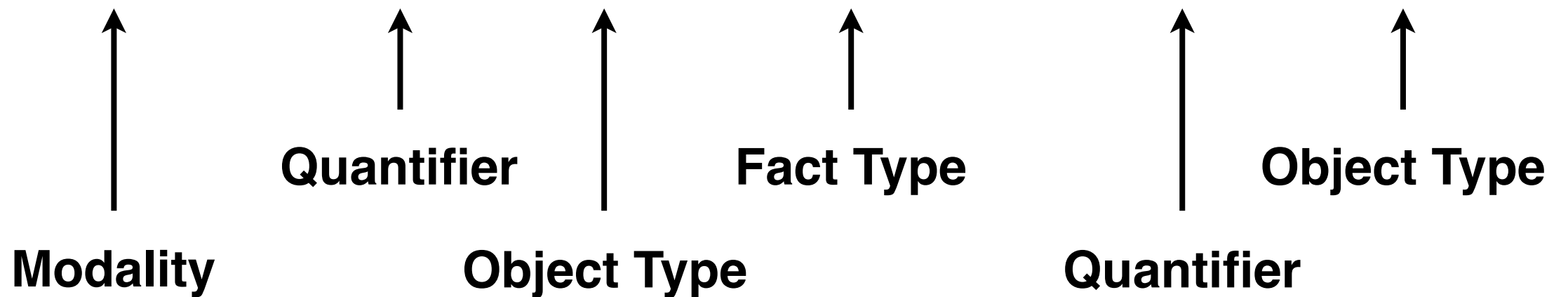
- **MOF metamodel for vocabularies & rules describing business**
 - **Formal, precise, unambiguous but easy-to-understand**
 - **Based on first-order predicate logic, with limited extensions**
- **Two precise, non-normative human-readable text syntaxes**
 - **“Structured English”**
 - **RuleSpeak - Business Rule Solutions’ established notation**
- **Good representation of policies & other requirements**

Structural & Operative Rules

- **Structural rules are definitions of the vocabulary of non-primitive terms**
 - “A Car Hire Customer has at least one of the following:
A Reservation
An in-progress car hire
A car hire completed within the last 5 years”
- **Operative Rules are requirements governing the conduct of business activities**
 - ... and therefore can be violated by the people involved
 - “A customer who appears drunk must not be given possession of a hire car”

Example Structured English operative rules

It is obligatory that each rental car is owned by exactly one branch.



It is obligatory that at the actual return date/time of each in-country rental and each international inward rental the local area of the return branch of the rental owns the rented car of the rental.

OMG Vertical industry standards

- Majority of OMG standards involve capturing & standardising processes & vocabulary for industry verticals:
 - Finance
 - C4I
 - Regulatory Compliance
 - Healthcare
 - Crisis Management
 - Space
 - Robotics
 - Government
 - Manufacturing
 - (& more)
- Starting work in Automotive and Energy verticals
- Want to know more? Ask me afterwards!

OMG BPM: Future developments (1)

- **Case Management Process Modeling (CMPM) RFP**
 - Possible BPMN 2 extensions to model case management
 - Maintains case file documents & rules to guide, constrain & support human decision-maker for (e.g.) insurance claim
- **Date-Time Foundation Vocabulary RFP**
 - SBVR & ODM vocabulary for very broad time terminology
- **Decision Model and Notation RFP**
 - To standardise models of how businesses make decisions, usually as a part of a business process model

OMG BPM: Future developments (2)

- **Management of Regulation and Compliance (MRC) RFP**
 - To model government regulation & its impact on enterprise
- **UML Profile for BPMN Processes RFP**
 - Requests UML profile for BPMN 2 semantics, partly to support DoDAF and MODAF users
- **Value Delivery Metamodel (VDM) RFP**
 - Solicits metamodel for customer value delivery, based on the concept of a value chain
 - A value chain “disaggregates a firm into its strategically relevant activities in order to understand the behaviour of costs & the existing & potential sources of differentiation”

Summary

- **Many 21st century companies will have no “IT department”**
 - **Raw storage & CPU cycles will likely be rented from “Cloud providers” like Amazon, Rackspace**
- **IT functions will become embedded in “the business”**
 - **Recognising, capturing & optimising business processes**
- **BPM, based on OMG standards, provides the tools**
 - **BMM: Defining organisation’s goals**
 - **BPMM: Measuring process maturity**
 - **BPMN: Capturing or designing processes**
 - **SBVR: Defining vocabulary & rules**
- **Knowledge ecosystem supports BPM specifications**

The alternative

- **How long do you want to keep changing light bulbs?**



For more information

OMG: <http://www.omg.org>

Certification: <http://www.omg.org/oceb>

Bug reports: <http://www.omg.org/technology/agreement.htm>

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Thank You!