



Institute of Information Management

University of St. Gallen

European  Business School
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Towards Higher Levels of Business Interoperability – from the User Perspective

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since February 2008:
Chair of Enterprise Systems
and Electronic Business

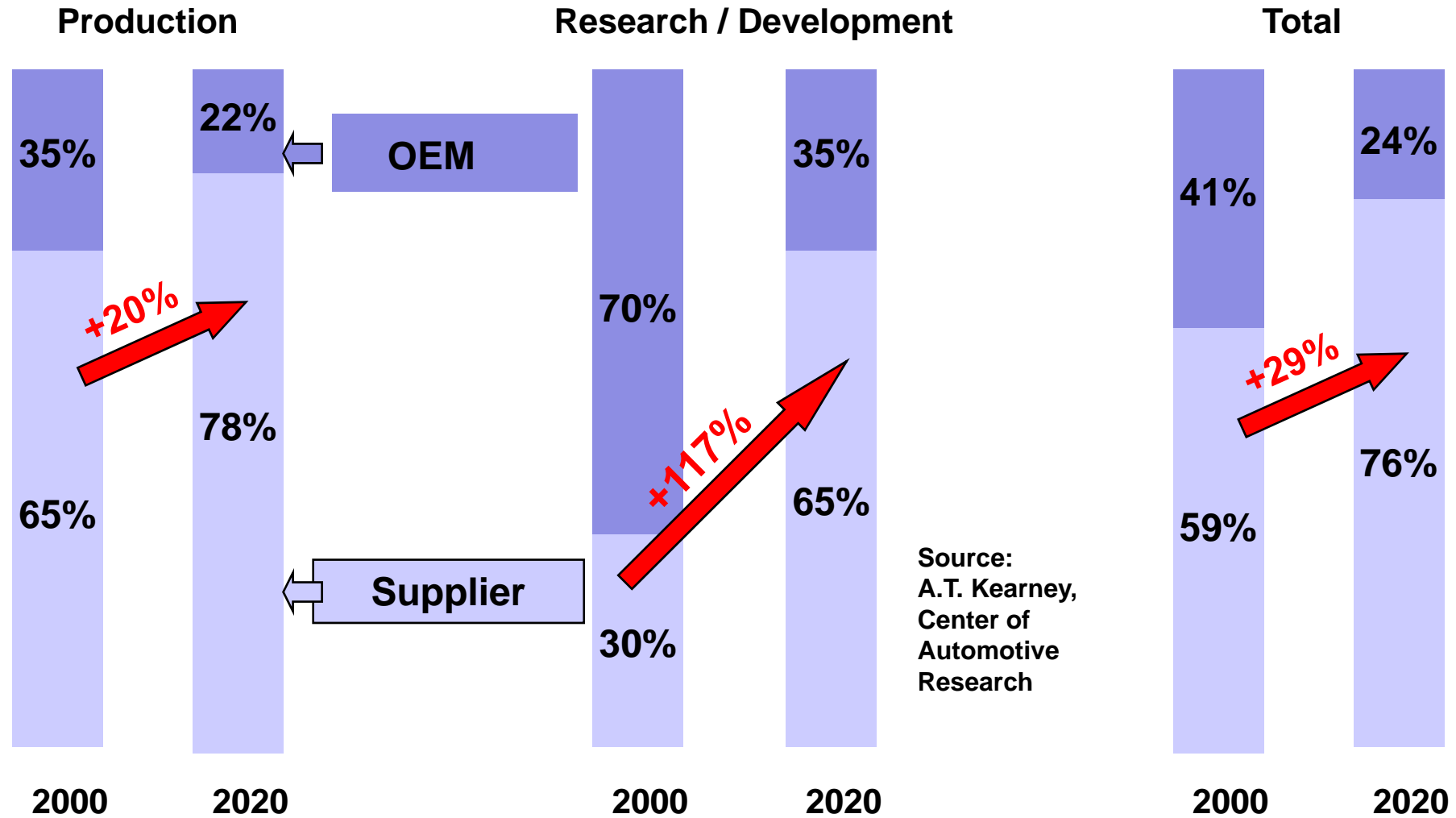
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Agenda

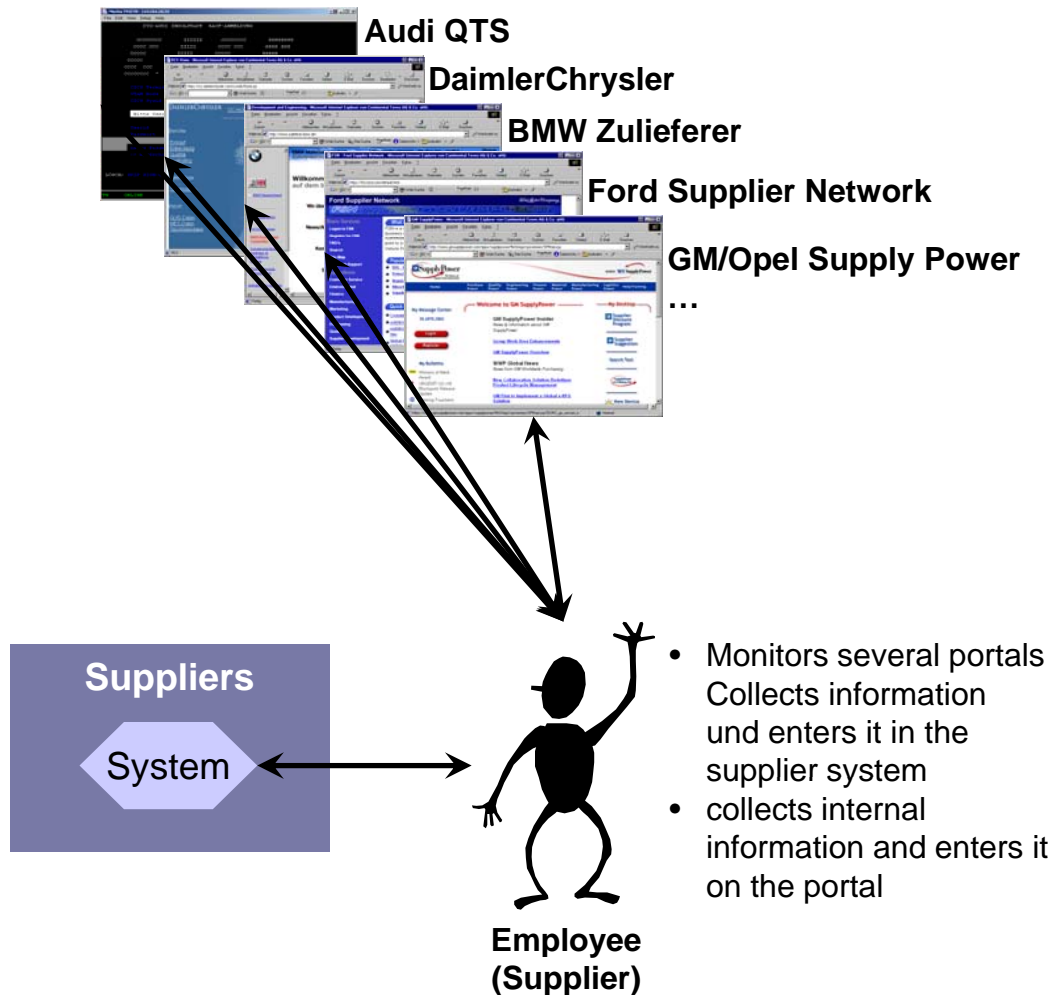
- Motivation and Background: Automotive Industry
- Myths and Reality in B2B Interoperability
 - Myths: The Business Case for Standards
 - Reality: The Global Standards Eco-System
- Interoperability Profiles
- Global Testbed Initiative
- Summary

By 2015, suppliers will have taken over large parts of R&D and production from the automotive OEMS



Source:
A.T. Kearney,
Center of
Automotive
Research

Besides EDI, OEM portals dominate B2B collaboration in the automotive industry



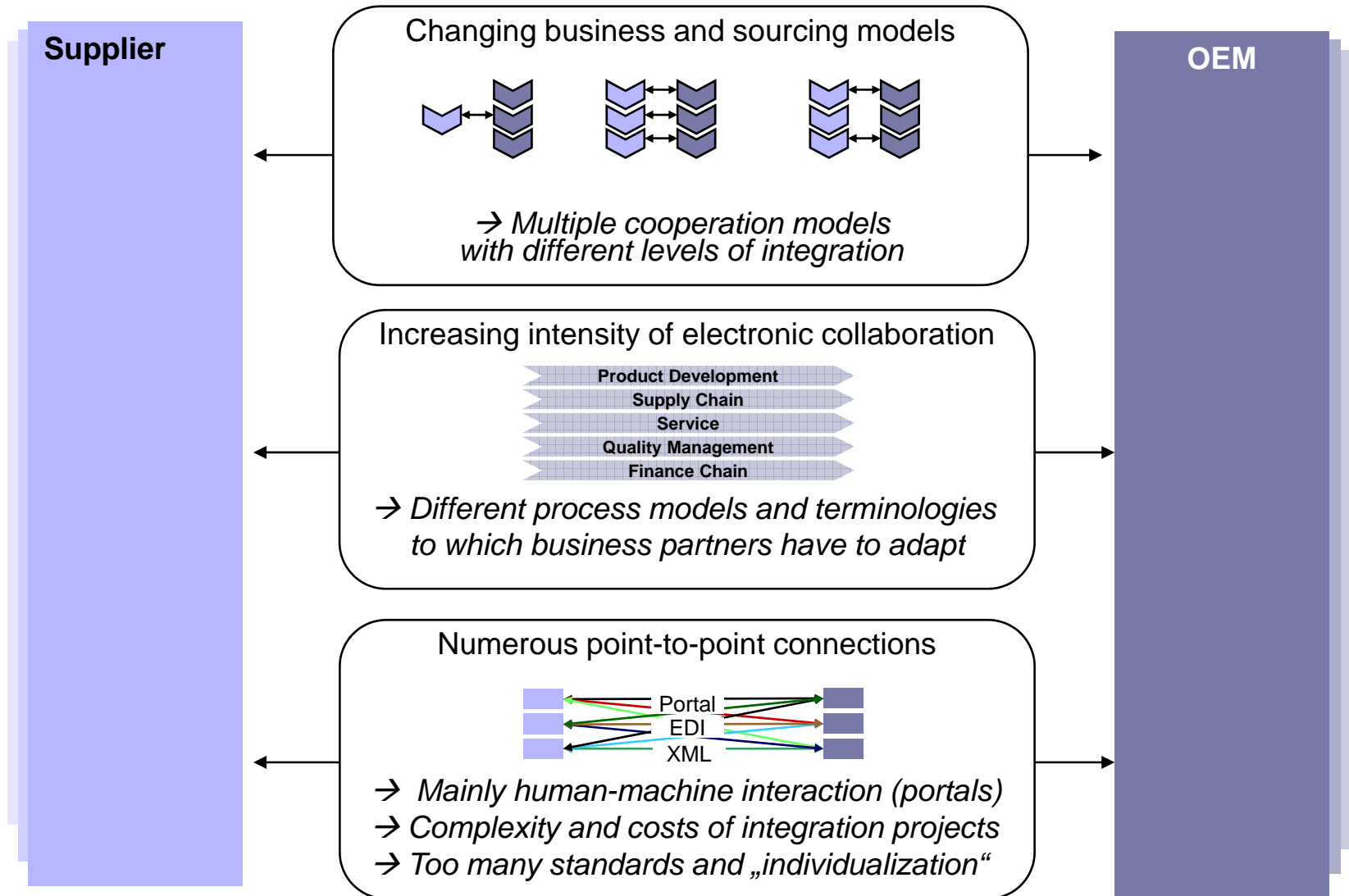
OEMs intensify electronic collaboration using supplier portals:

- OEM X: 116 applications
- OEM Y: 130.000 external users (suppliers only)

Suppliers are forced to use OEM portals:

- Supplier A
 - 29 portals with 250-320 applications
 - 440 users, 5 administrators
- Supplier B
 - 34 portals
 - 550 h/year for monitoring 6 portals in sales & logistics

The Interoperability Challenge



Project Background – SOA for Automotive



Advancing Business Networking



Supported by:



Increase interoperability (m:n instead of 1:1)

- Leverage SOA concepts and Web Services for implementing industry standards
- Pilot scenario “engineering change management”

Participants / Sponsors:

- Automotive OEMs
- Automotive suppliers
- (Technology providers)

Project Management:

- University of St. Gallen,
- Competence Center “Business Networking”

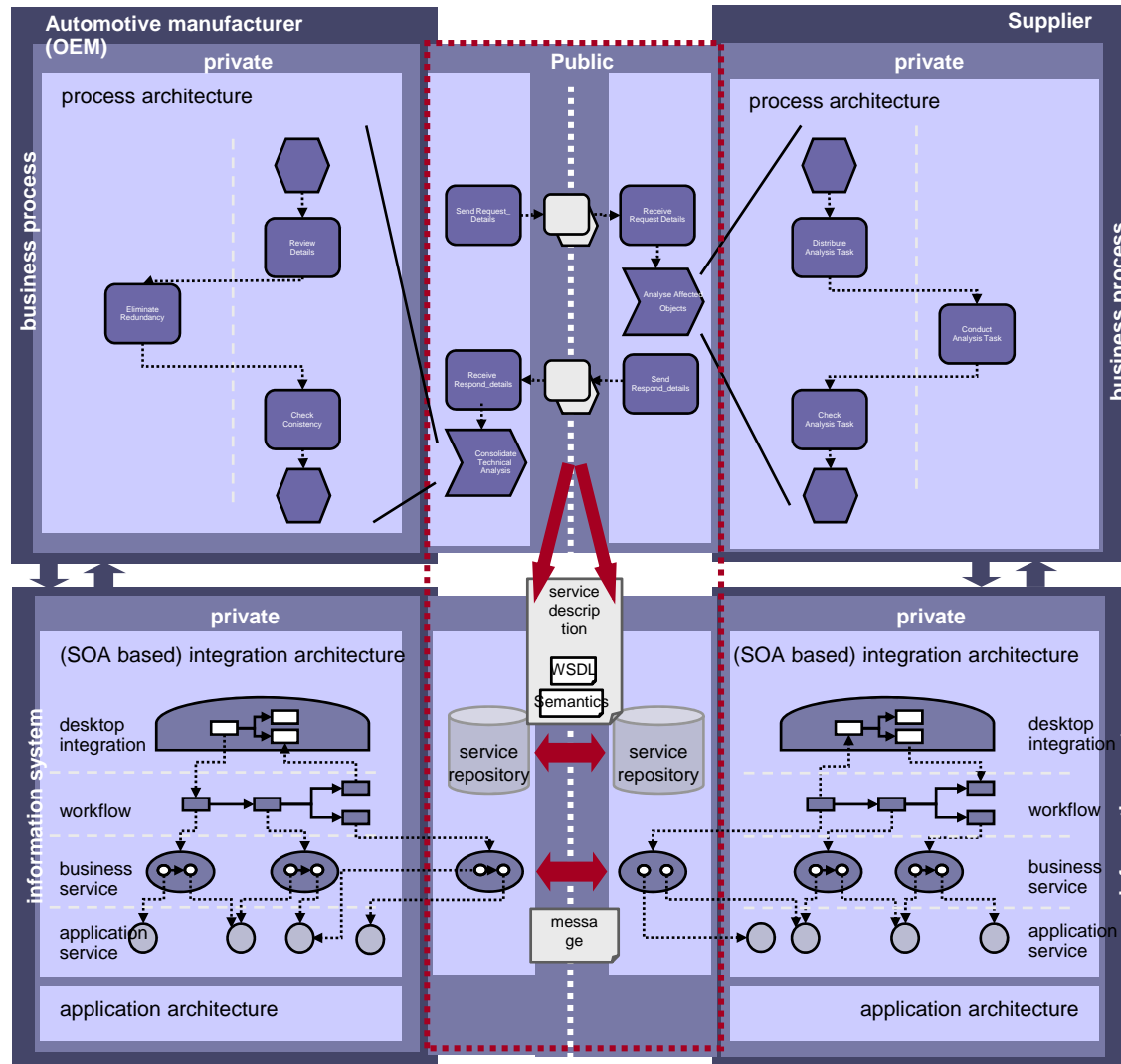
Duration:

- 1st Automotive VCF Workshop: 06/2004
- Project preparation: 01/2005 – 07/2005
- Concept: 10/2005 – 08/2006
- Pilot: 09/2006 – 08/2007

Further information:

www.soa.iwi.unisg.ch

Project Deliverables – SOA for Automotive



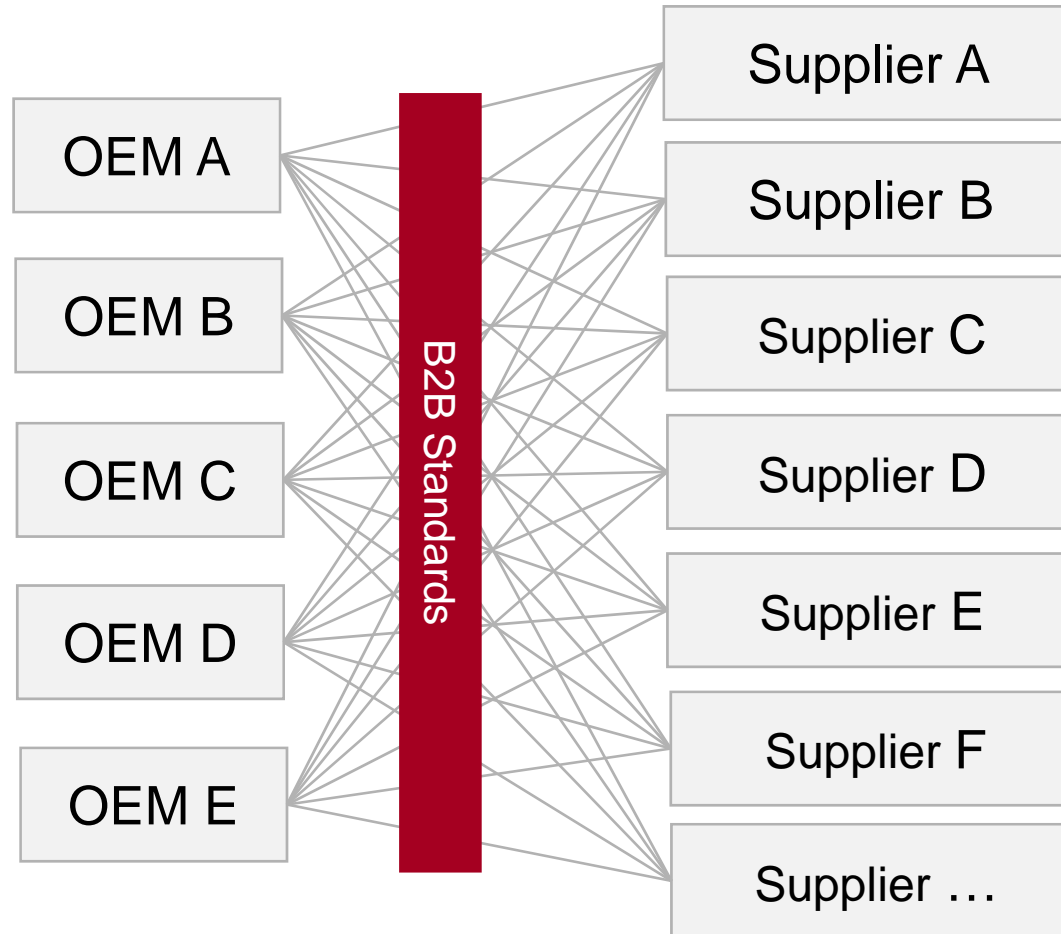
Deliverables

1. "Public ECR Process" (CIM model)
 - Version 1.0 (✓, 19.4.06)
2. Mapping to „Private Processes“
 - Bilateral workshops (6 out of 6)
 - Consolidation (✓, 19.4.06)
3. Service design (PIM model)
 - Target architecture & design principles (✓, 28.2.06)
 - Service spec. V1.0 (30.5.06 ✓)
 - Service spec. V2.0 (30.9.06 ✓)
 - Service repository (30.9.06 ✓)
4. Reference implementation
 - Implementation V1.0 (30.6.06 ✓)
 - Implementation V2.0 (30.9.06 ✓)
5. Company-specific implementation (PSM model) / Piloting (30.4.07 ✓)
6. Evaluation and documentation of pilots (30.8.07 ✓)

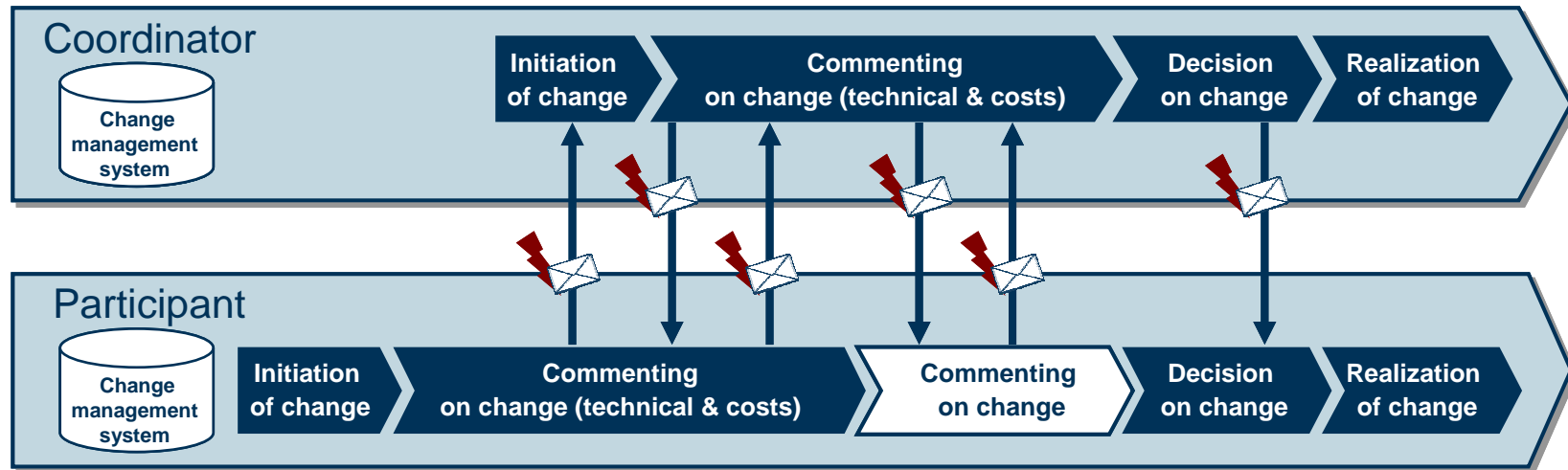
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The Business Case for Standards



The Business Case of Engineering Change Management: Savings of 0,75 PD per Engineering Change and Partner



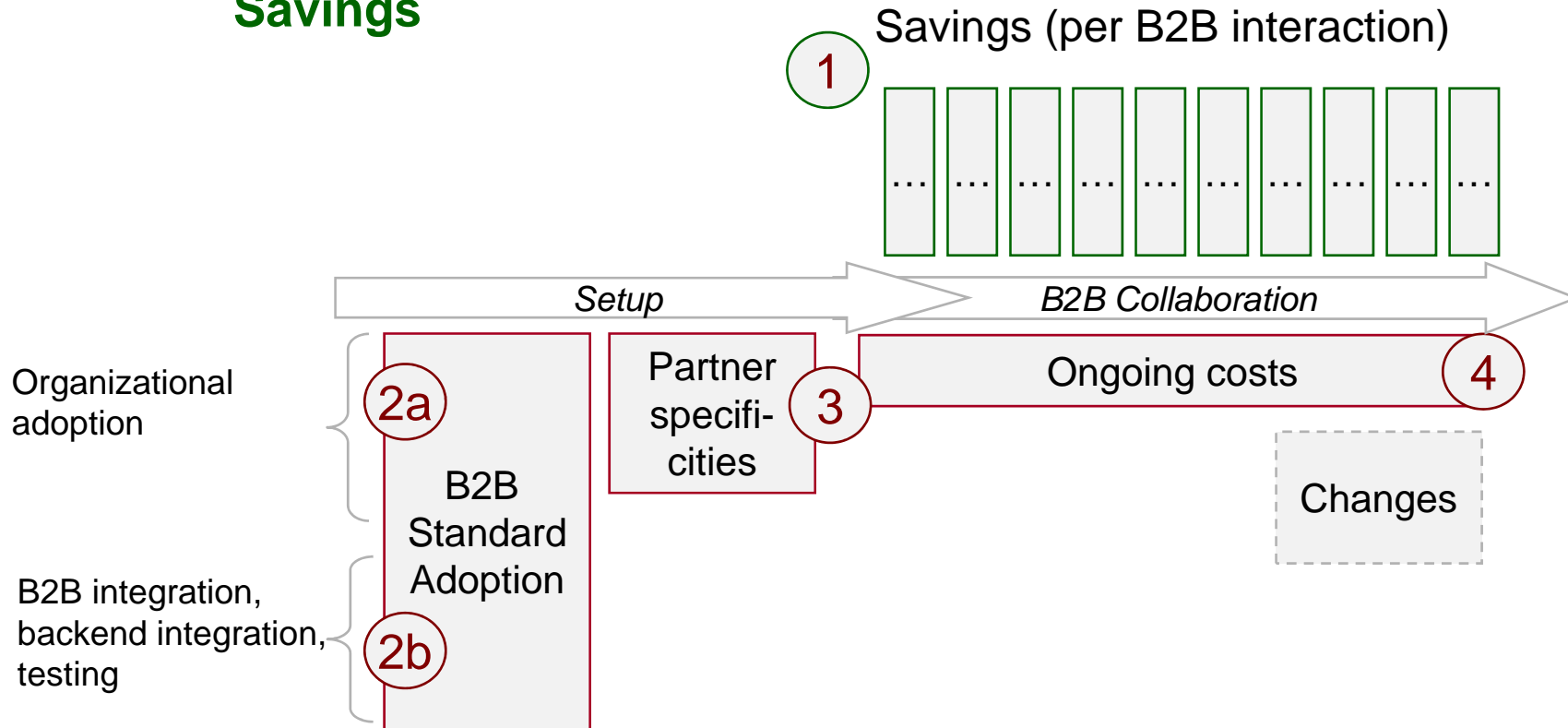
- Capacity for the preparation of information is approximately 0,25 PD* per work step
- Manual arrangement of original information
 - Partner specific arrangement of change information

Quelle: Unity AG, VDA ECM Arbeitsgruppe

The processing of a single engineering change requires significant manual data collection efforts
→ 0,75 PD per change and partner

The Business Case for Standards (Enterprise Perspective): Does it Really Pay Off?

Savings



Costs

VDA Recommendation 4965 „Engineering Change Management“ – Example of an Industry Standard

VDA	Engineering Change Management (ECM)	4965
	Teil 1: Engineering Change Request (ECR)	T 1
<p>Diese unverbindliche Empfehlung dient der Zusammenstellung von Anforderungen an das Änderungsmanagement digitaler Produktdaten hinsichtlich Organisation, firmenübergreifender Änderungsprozesse und relevanter Änderungsdaten. Die Empfehlung ist vorbehaltlich weiterer Entwicklungen in einzelne Teile entsprechend der ECM Prozessphasen eines Änderungsdurchlaufs gegliedert:</p> <p style="text-align: center;">Version 1.1 vom Dezember 2005 ersetzt Version 1.0 vom April 2005</p>		
Arbeitskreis "CAD/CAM"		
<p>Herausgeber: Verband der Automobilindustrie Westendstraße 61 Postfach 17 05 63 60079 Frankfurt Telefon 069/97507-264 Telefax 069/97507-300 Internet: www.vda.de</p> <p>Copyright Nachdruck und jede sonstige Form der Vervielfältigung ist nur mit Angabe der Quelle gestattet.</p>		
VDA		Verband der Automobilindustrie

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VDA 4965: Version 1.1

Main document: 97 pages

Appendix:

- A. Data Model (Express-G) / 37 p
- B. Mapping ECR DM – AP214 / 32 p.
- C. ECR Process Notation / 5 p.
- D. IT Architecture / 7 p.

Business Interoperability Issues: Problems with Existing Standards

Presentation issues → Complexity!

- Size and structure of the documentation (!)
- Proprietary modelling notations

Specification issues → 80:20 rule?

- Few mandatory elements, but very large number of optional elements
- Missing concept for partner-specific extensions
- Focus on messages without defining business process dependencies

Implementation specification issues

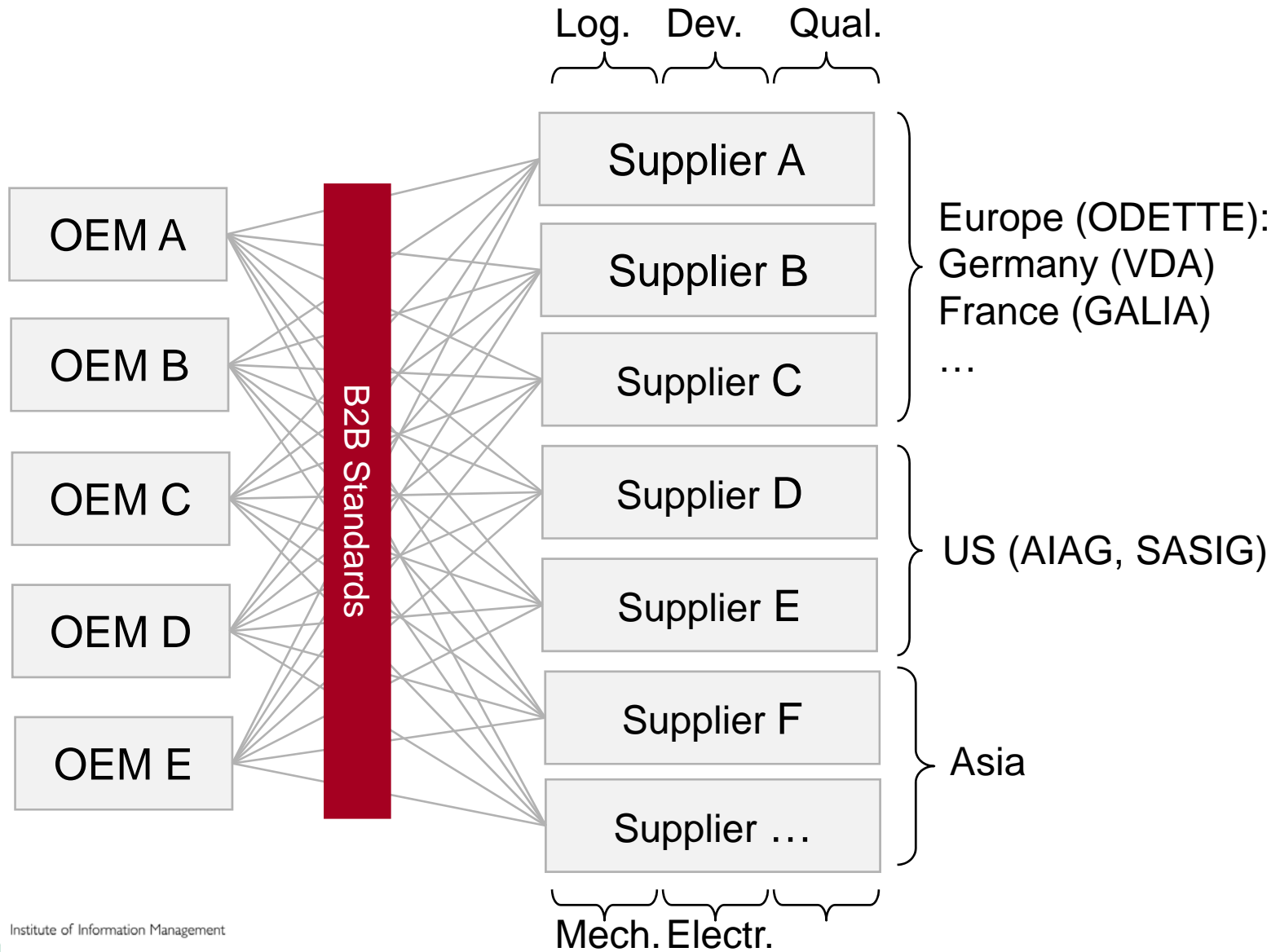
→ Interoperability of implementations

- Lacking guidelines for technical implementation (syntax and platform)
- (Mapping to AP214)

Testing issues → Conformance

- Missing use cases and test scenarios (test data)

The Business Case for Standards



VDA 4965 goes global ...

SASIG ECM: Vision & Mission



The Vision

A joint OEM and Supplier effort leading to a more efficient Engineering Change Management collaboration throughout the Global Automotive Supply Chain.

The Mission

Within the next 3 years we provide an agreed standard which enables global ECM collaboration

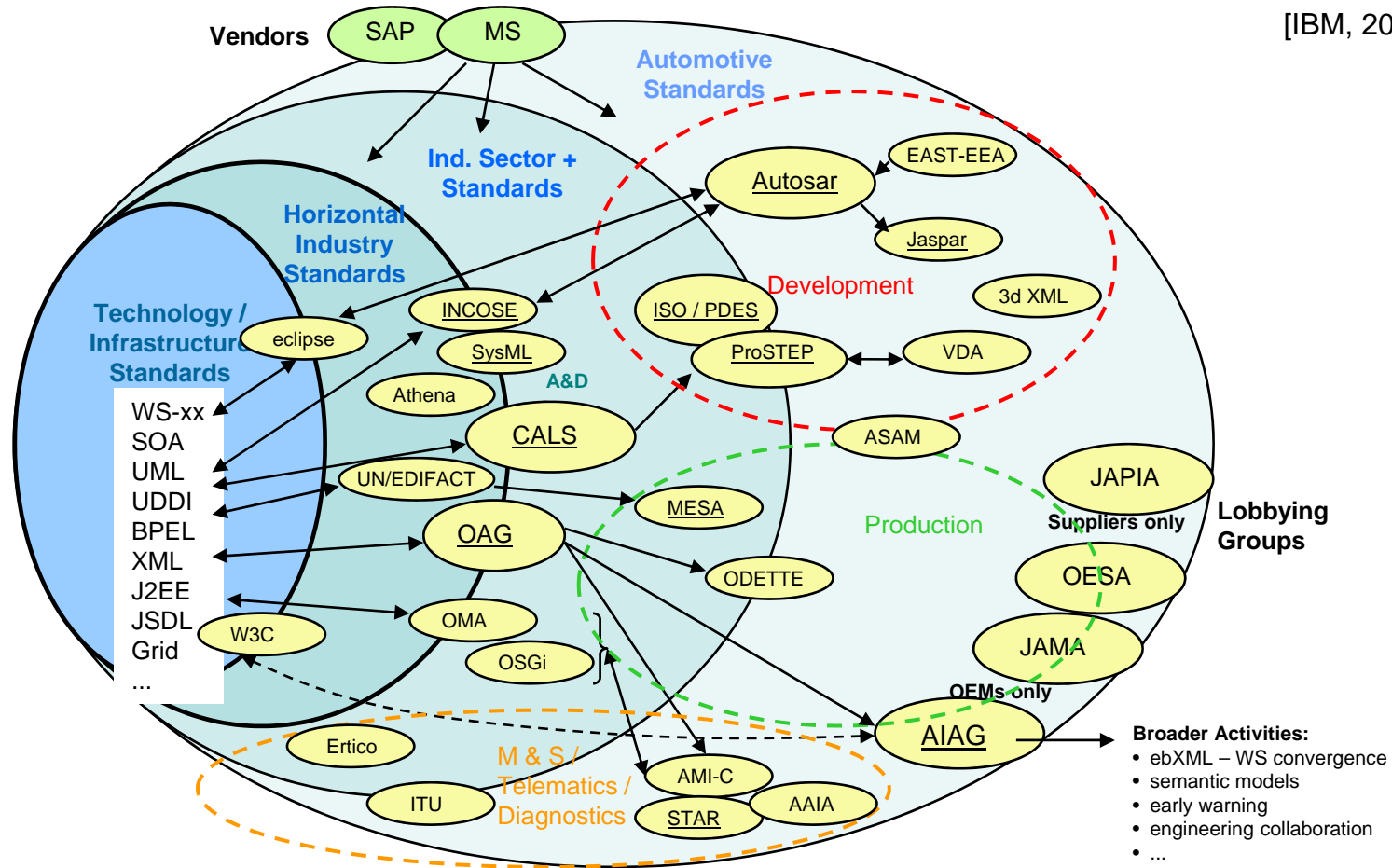
An intermediate step will be an agreed standard focused on the ECR process by first quarter of 2008

- The key OEM and supplier community is represented in the SASIG ECM workgroup and agree on a common set of issues.
- Based on an agreed common ECM Reference Process the automotive companies are able to perform a harmonized synchronization for ECM collaboration.
- Encourage the development of ECM solutions based on open standards.

Source:
Kulendik, DC
Odette Conference
28./29.11.2006

Global Standards Ecosystem in the Automotive Industry

[IBM, 2007]



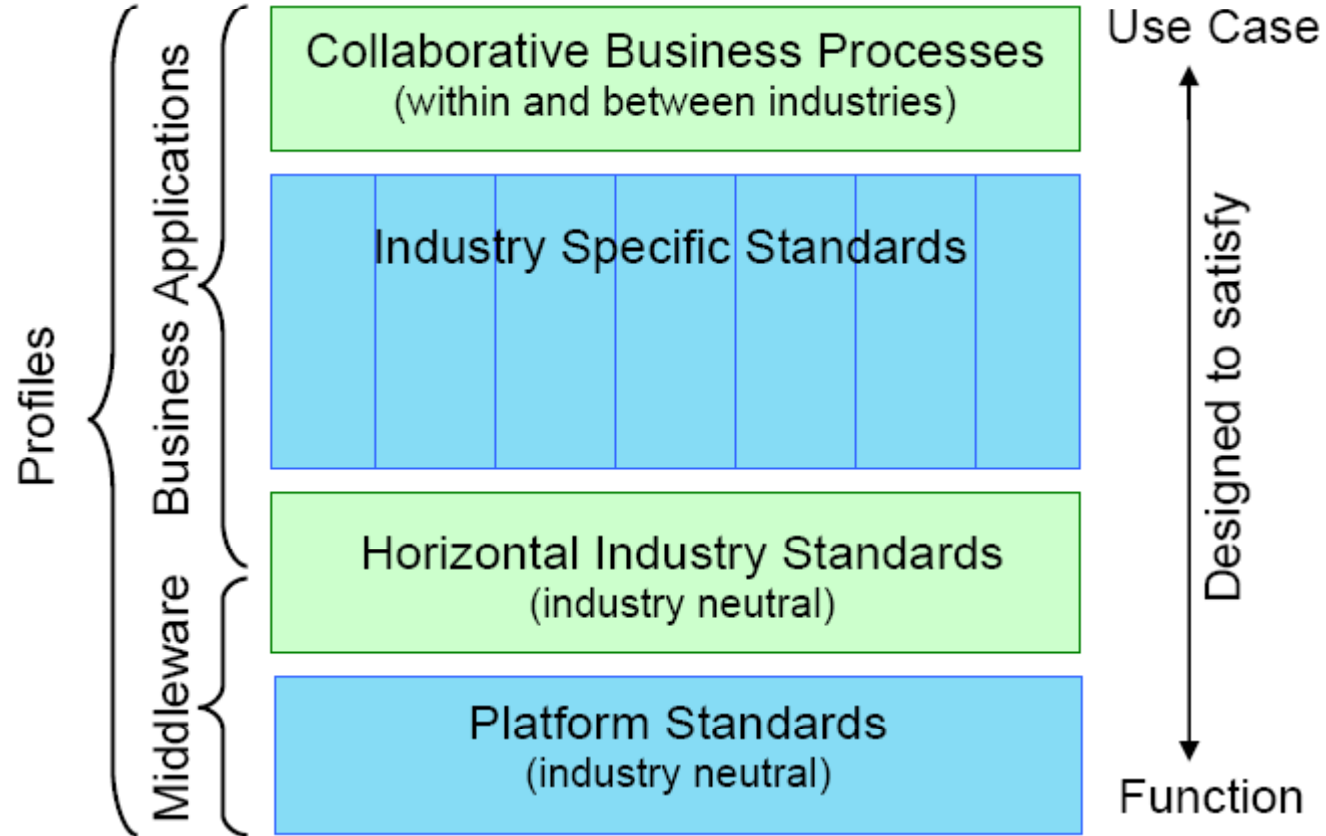
The Automotive Standards Ecosystem is likely to consolidate around few global technology / infrastructure standards, complemented by industry specific standardization initiatives.

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C.f. Roland Merrick (IBM): Interoperability Profiles for Collaborative Business Processes

Standards Stack



EIC Profile Template

<http://www.eic-community.org/Templates/EIC-IP-template.html>

Table of Contents

- 1. Introduction
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- 3. Business Process
 - 3.1. Named Process
 - 3.2. Role Model
 - 3.3. Process Specification
- 4. Service Definition
 - 4.1. Messages
 - 4.2. Operations
- 5. Platform
 - 5.1. Constraining WS-I Basic Profile
- 6. Profile Conformance

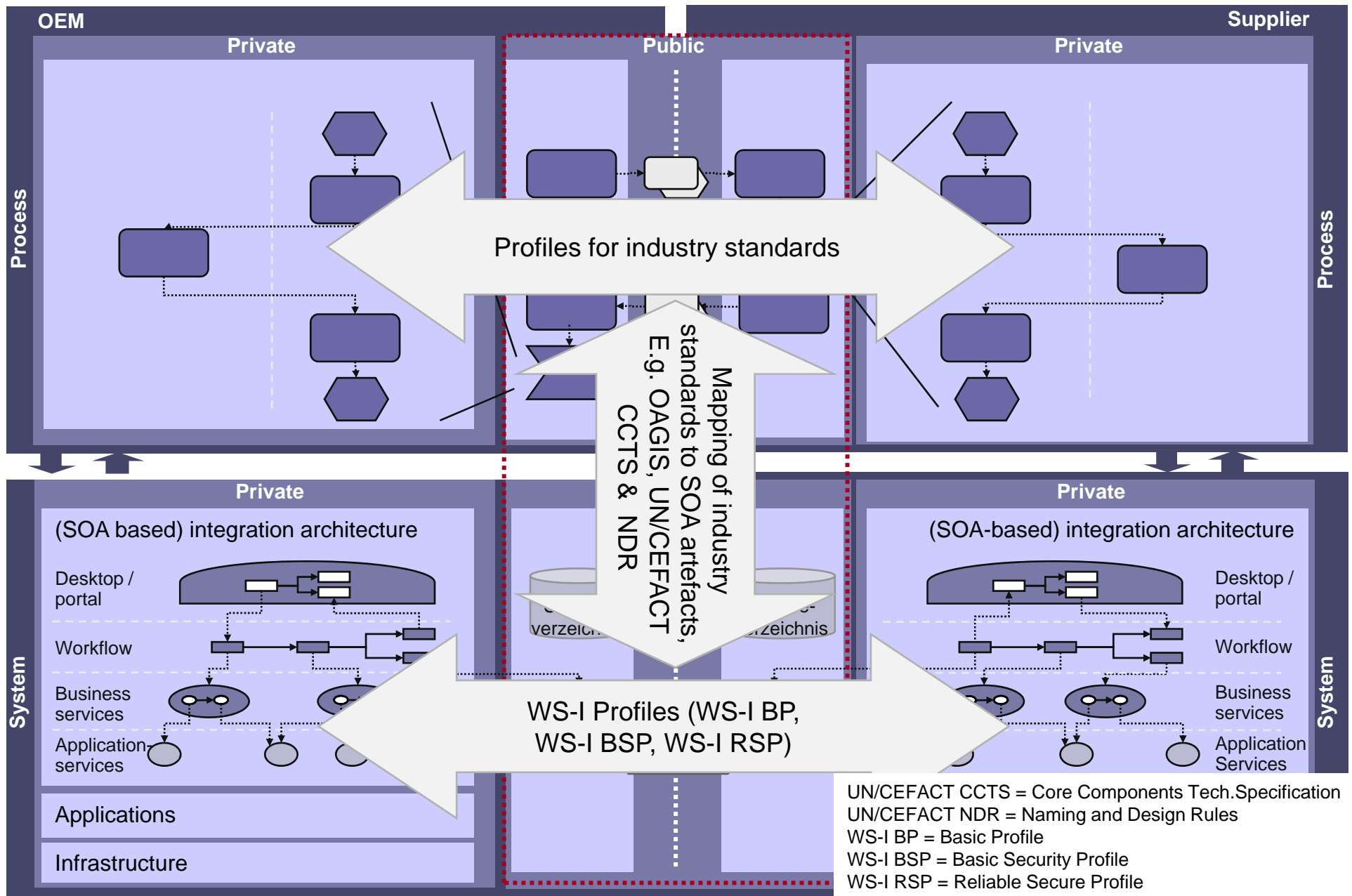
Appendices

- A: Referenced Specifications
- B: Glossary of Terms
- C: Acknowledgements
- D: Changelog
- E: XML Schemas

Example: EIC Profile for Engineering Change Management

EIC Profile	Engineering Change Management in the Automotive Industry
Relationships to other Standards / Profiles	VDA Recommendation 4965 (ECR/ECM) OAGIS 9.0 WS-I Profiles
Use case (motivation, actors, scenarios)	Interaction scenarios in engineering change management (reflecting different cooperation models between OEM and supplier)
Business Process	<p>“Public” view of engineering change management process as ARIS EPC (BPMN used as shadow documentation)</p> <p>Role model</p> <ul style="list-style-type: none"> • organizational level: 2 roles (coordinator and participant) • functional level: 9 roles (Engineering Change manager, comment performer, approver, ...)
Service Definition: - messages (information model) - web services (functional model)	11 messages (OAGIS BODs) ECR Business Service with 11 operations (WSDL)
Platform	WS-I Basic Profile; Security (Two-way SSL + WS-Security); in future: WS-I Reliable Secure Profile (WS-I RSP)
Profile conformance	(Not yet defined → Test cases)

The „Profiling Vision“ and Resulting Challenges



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- Motivation: Insights from the Automotive Industry
- Myths and Reality in B2B Standardization
 - The Business Case
 - The Evolving Standards Landscape
- Profiling of Standards
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Motivation for a Global Testbed Initiative (Initiators: CEN, EIC, ETSI, NIST, KorBIT, AIAG, IAI)

- e-Business interoperability typically requires that a full set of standards are implemented
 - from open internet and Web Services standards to industry-level specifications and e-business frameworks
- There are only limited and scattered testing facilities.
 - As testing facilities are typically provided by one of the standard developing organizations, they have a rather narrow focus on a particular standard.

Overall Objectives of the Global Testbed Initiative (Initiators: CEN, EIC, ETSI, NIST, KorBIT, AIAG, IAI)

- Concept for a global e-business interoperability test bed
 - Definition key components of a global e-business interoperability test bed
 - Outline of a testing methodology
- Development of a roadmap for deploying a global e-business interoperability test bed
 - Available test expertise and facilities world wide
 - Worldwide requirements and global collaboration model

Global eBusiness Interoperability Test Bed Methodologies – Scope

Phase 1: Concept and roadmap

- An **analysis of the benefits, risks, tasks, requirements, required resources** of a global e-Business interoperability test bed based on **business cases**;
- Development of **alternative approaches** to architecting and implementing global e-Business interoperability test bed;
- A **recommended architecture and process to develop the test bed** that follows from the requirements analysis and with clear rationale;
- An assessment of requirements from key international stakeholders, including of the **resource commitment** needed to complete the test bed development tasks.

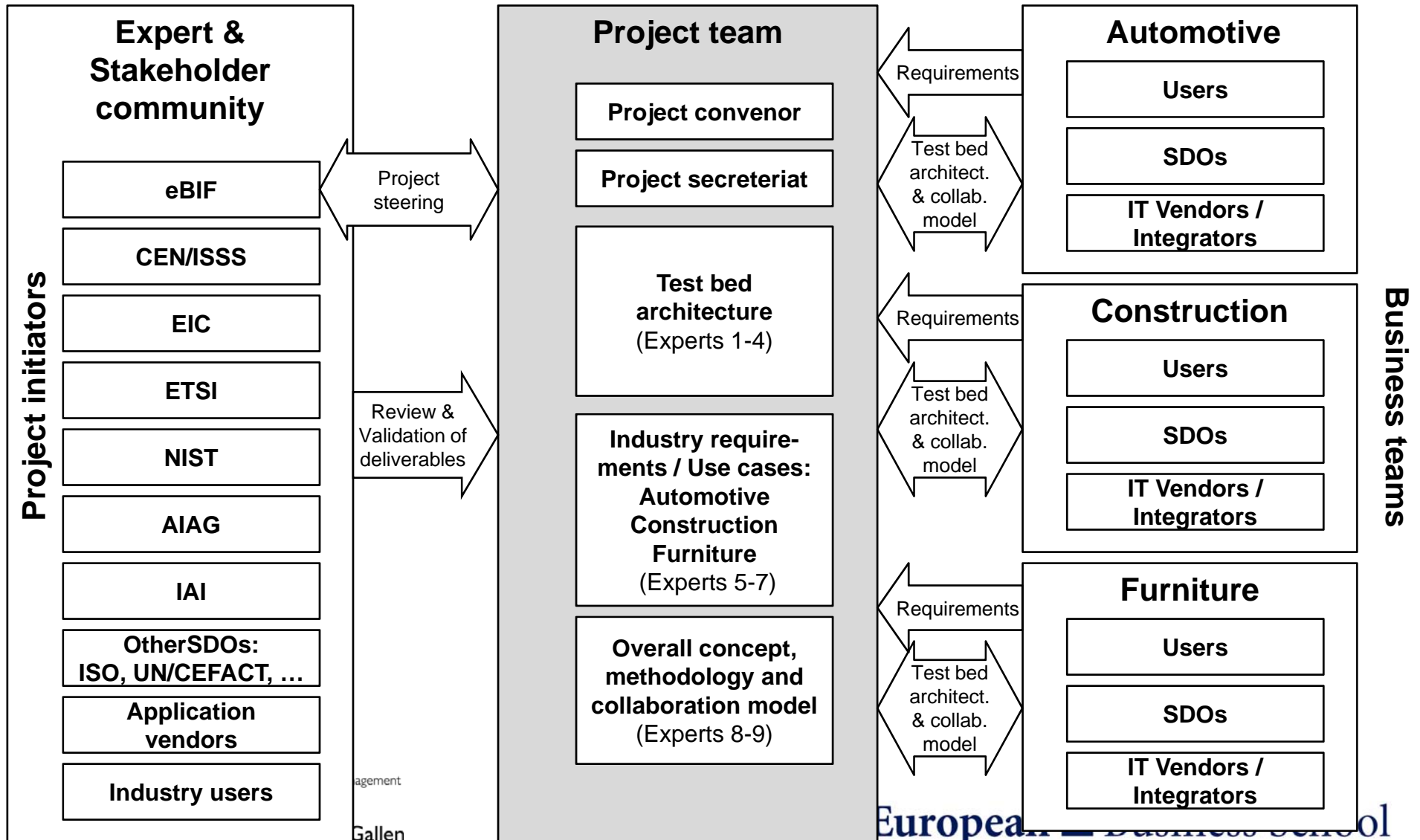
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Phase 2: Realization

- **implementation of the test-bed** as shared testing facility based on the suggested collaboration model
- **provisioning of testing services** to industry users, software vendors and SDOs

Global eBusiness Interoperability Test Bed Methodologies

Project Organization



agement
Gallen

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Summary

- We need „second generation B2B standards“
 - higher interoperability
 - lower adoption costs of B2B integration
- Standards need to cope with real-world constraints:
 - Enterprises will need to adapt to several standards
 - Standards need to focus on the essentials (80:20 rule)

- Profiles speed up the implementation of standards and foster interoperability.

- With profiles, testing cannot be conducted by a single SDO
 - global test beds are required.

Contact

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