Tequila Workshop 2002
“E-commerce Frameworks for Trading IP Services”

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Outline

- Business and technology drivers
- E-commerce frameworks overview
  - Web Services & UDDI, ebXML, RosettaNet
- E-commerce in CADENUS
- An example of B2B integration

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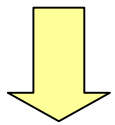
Business and technology drivers

- Competitive markets are emerging
  - service unbundling
  - service componentization
- New trading models, roles and value-chains
- Falling cost of B2B and OSS technologies



- Traditional separation between business management and OSS is obsolete
- B2B supply-chain integration replaces OSS interconnection

Need of Automated Trading of IP QoS Services

- Next generation services (NGS) require QoS guarantees

⇨ Next-generation “All-IP” networks have to support SLA

- Delivery of NGS depend on network control mechanisms AND management capabilities working together across networks managed by different operators

⇨ Wholesale challenge:

  - to offer managed IP QoS services backed up by SLA
  - SLSs as technical annex to SLA for trading IP QoS services

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Overall Vision

- "Enhance today's ability of delivering value-added services to end-users, where the value chain is comprised of multiple actors"
  - extend ability for a provider of services to reach a wide user base
  - give ability to customer facing organization to guarantee SLA on services it sells

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E-commerce Frameworks Overview

- Previous generation of e-commerce solutions for OSS interconnection based on EDI
  - affordable for large companies
  - dominant enterprises often imposed proprietary integration approaches
- Next generation of e-commerce technology based on XML and Internet technologies
  - focus on business collaborations patterns as key enabler for B2B automation

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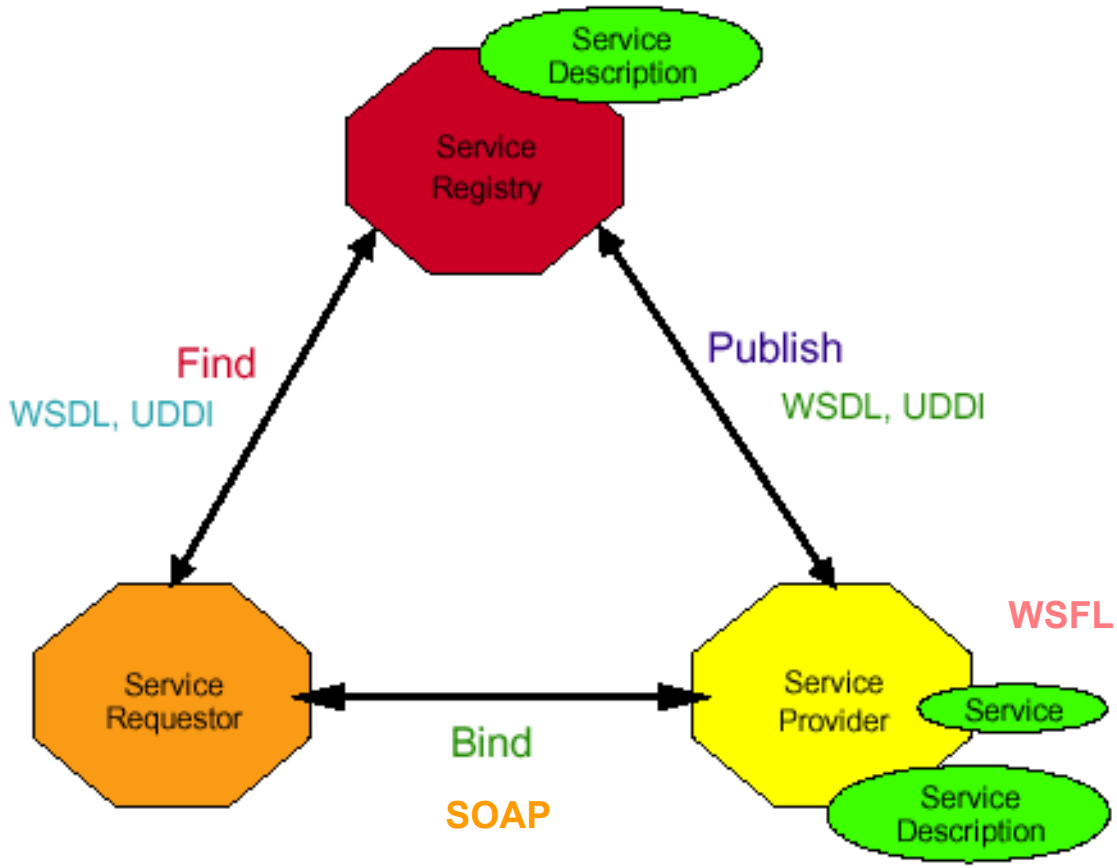
Web Services

- Definition: *"a Web Service is an interface that describes a collection of operations that are network accessible through standardized XML messaging"*

- Web Services allow collaboration to occur between businesses of all sizes, significantly reducing the development and maintenance costs of building business webs

Web Services Model

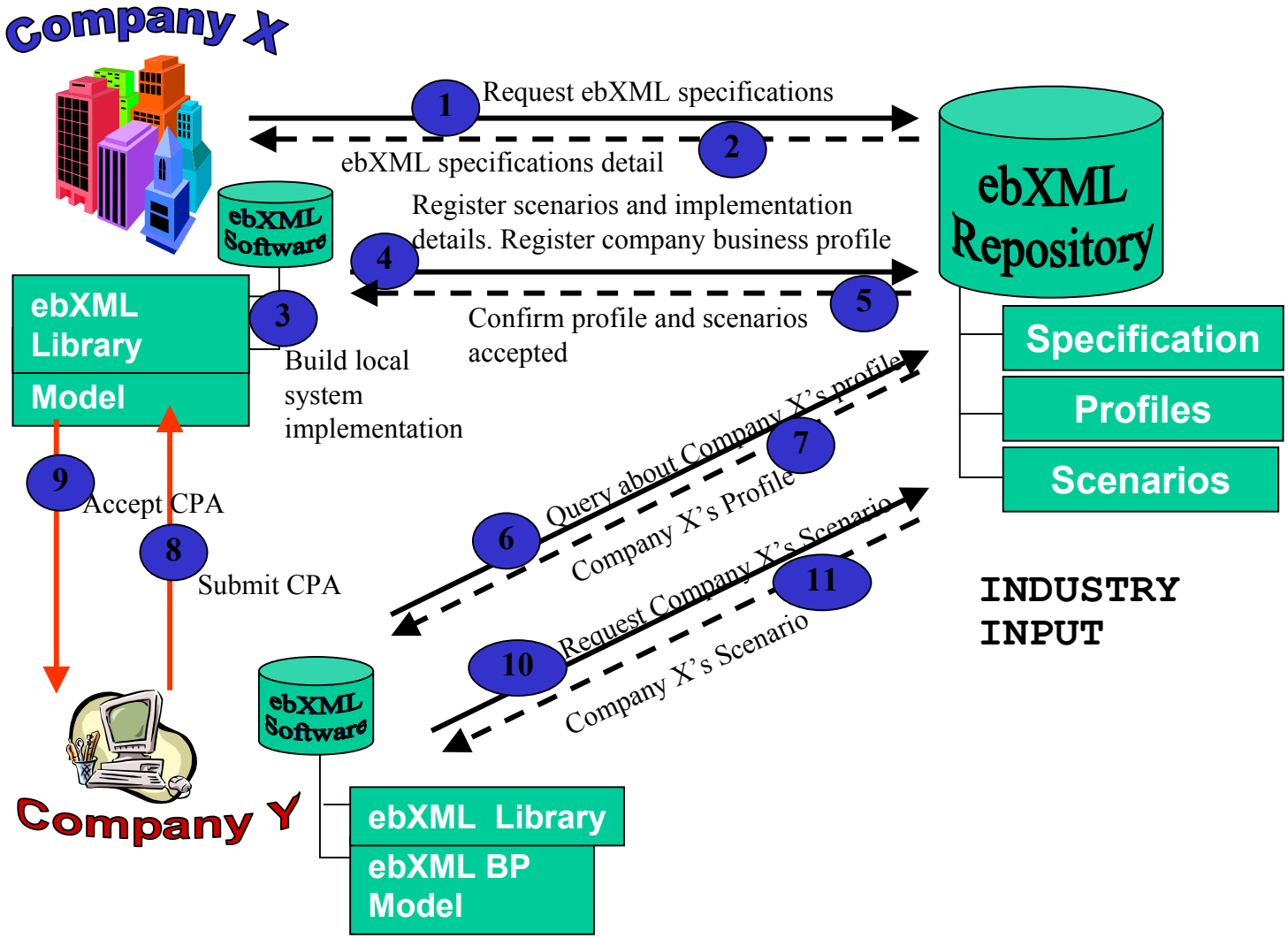


Source: IBM Web Services Toolkit documentation

ebXML

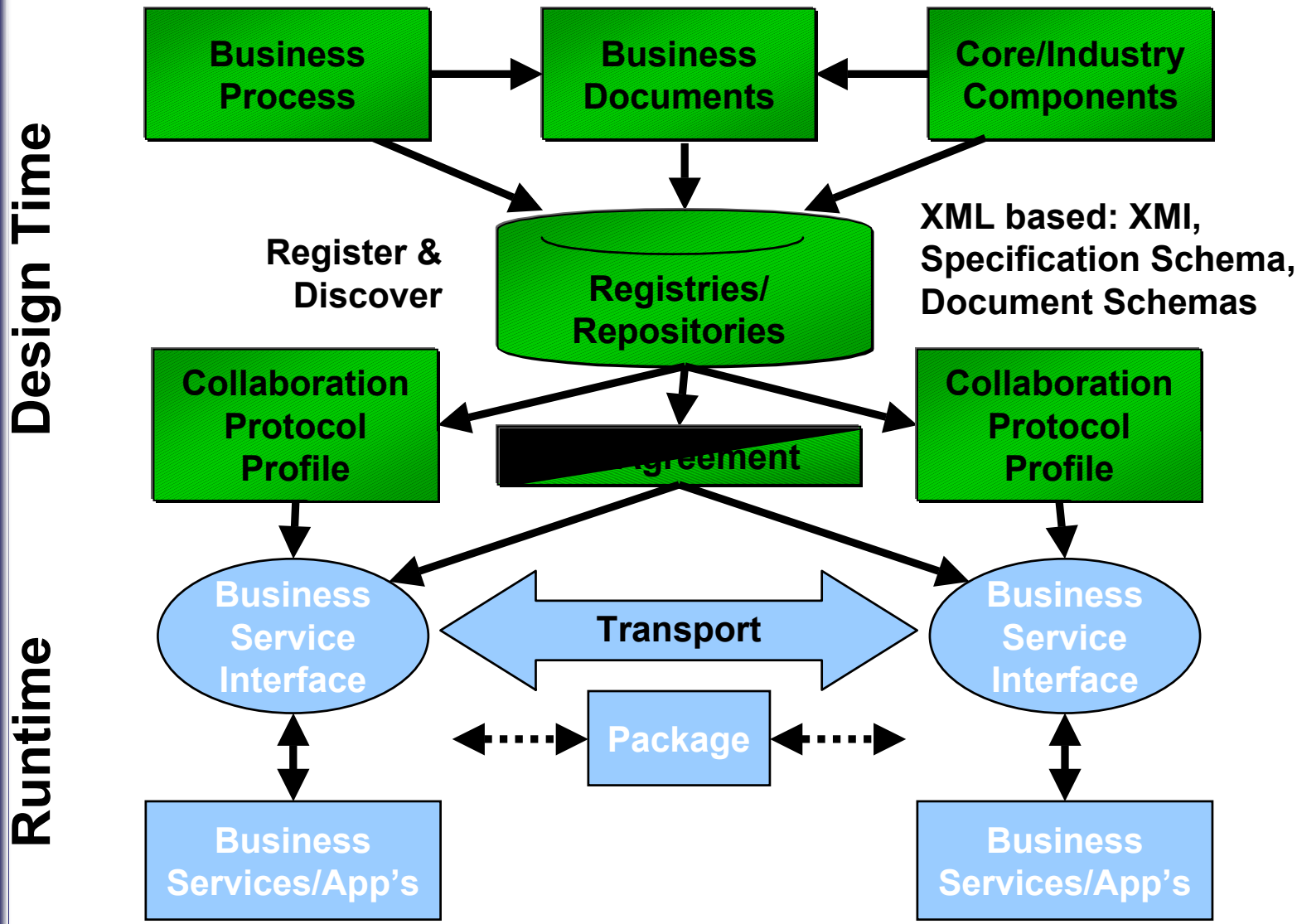
- Global electronic business standard sponsored by UN/CEFACT and OASIS
  - hundreds of participants from all over the world
- Complementary to existing B2B initiatives:
  - aims at reconciling under a std framework the existing approaches to B2B automation
- First set of specifications released in May 2001

ebXML Usage Example



Source: ebXML

ebXML Architecture



Source: ebXML

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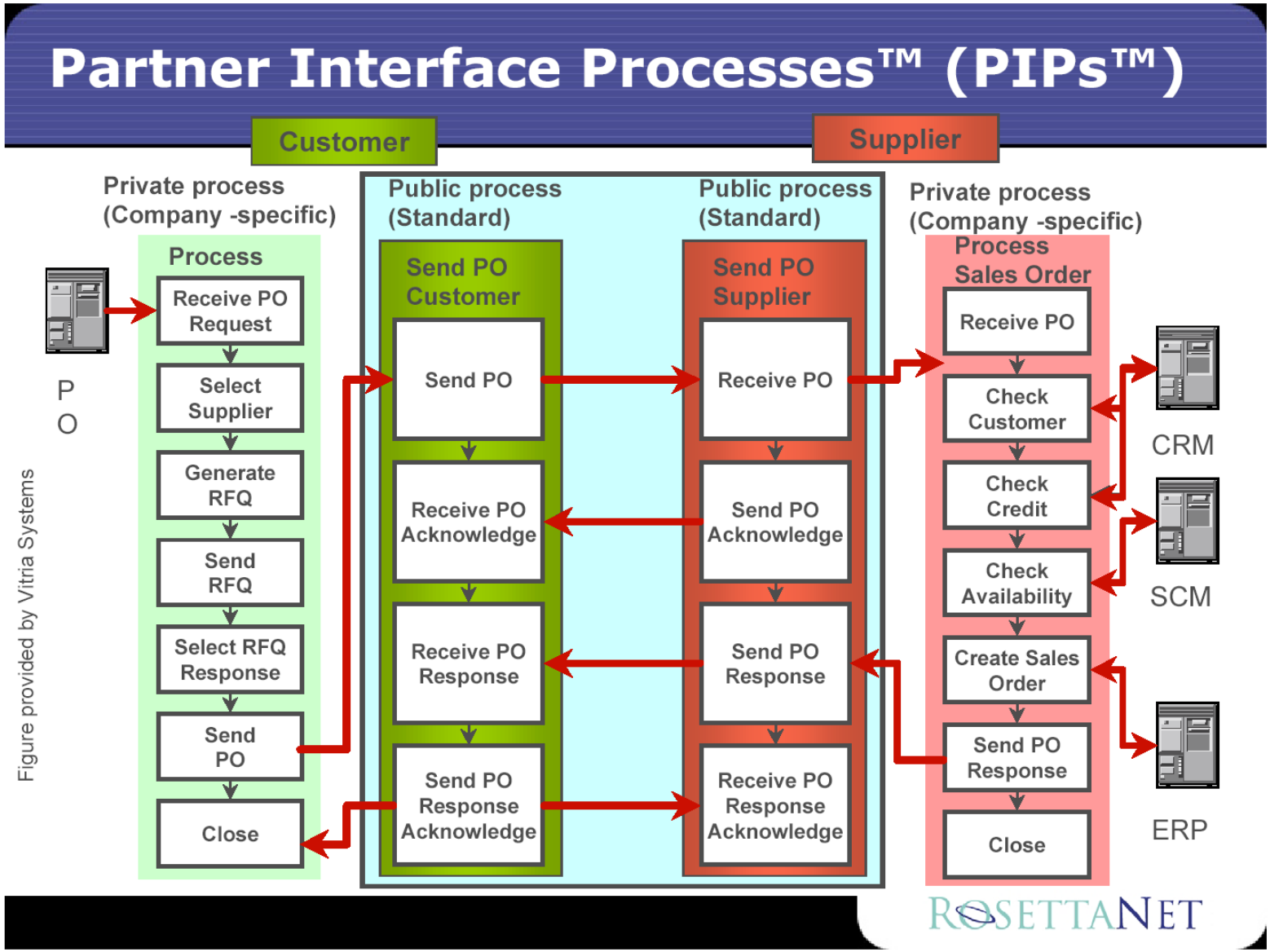
RosettaNet Overview

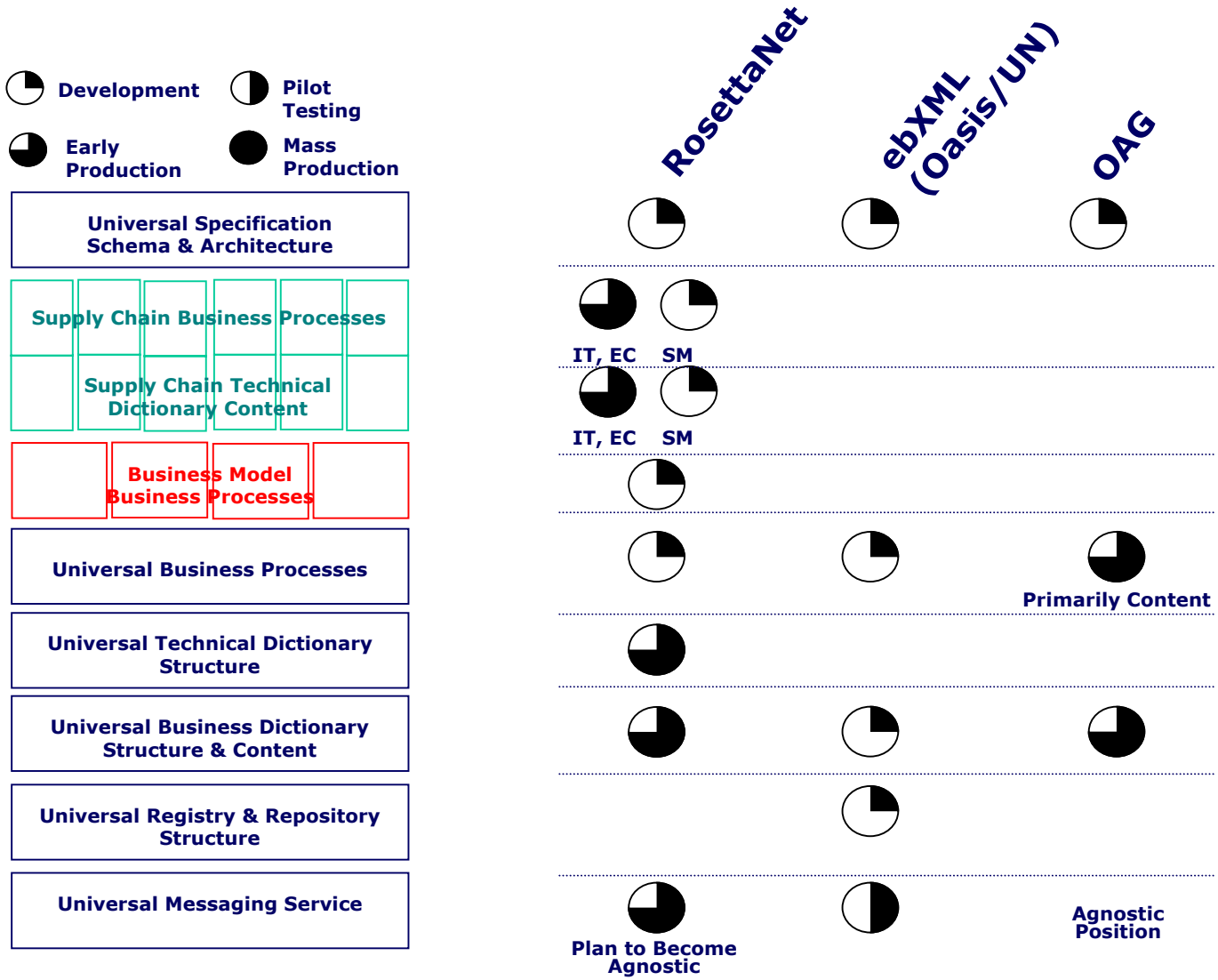
- Independent industry consortium
  - formed in 1998 by leading IT industry actors
  - focus on supply-chain optimisation
- Developed standards and guidelines for B2B integration via the Internet
- Public vs private processes
- Main results:
  - Business and technical dictionaries
  - RosettaNet implementation framework (RNIF)
  - Partner Interface Processes (PIPs)

RosettaNet Std Collaboration Patterns



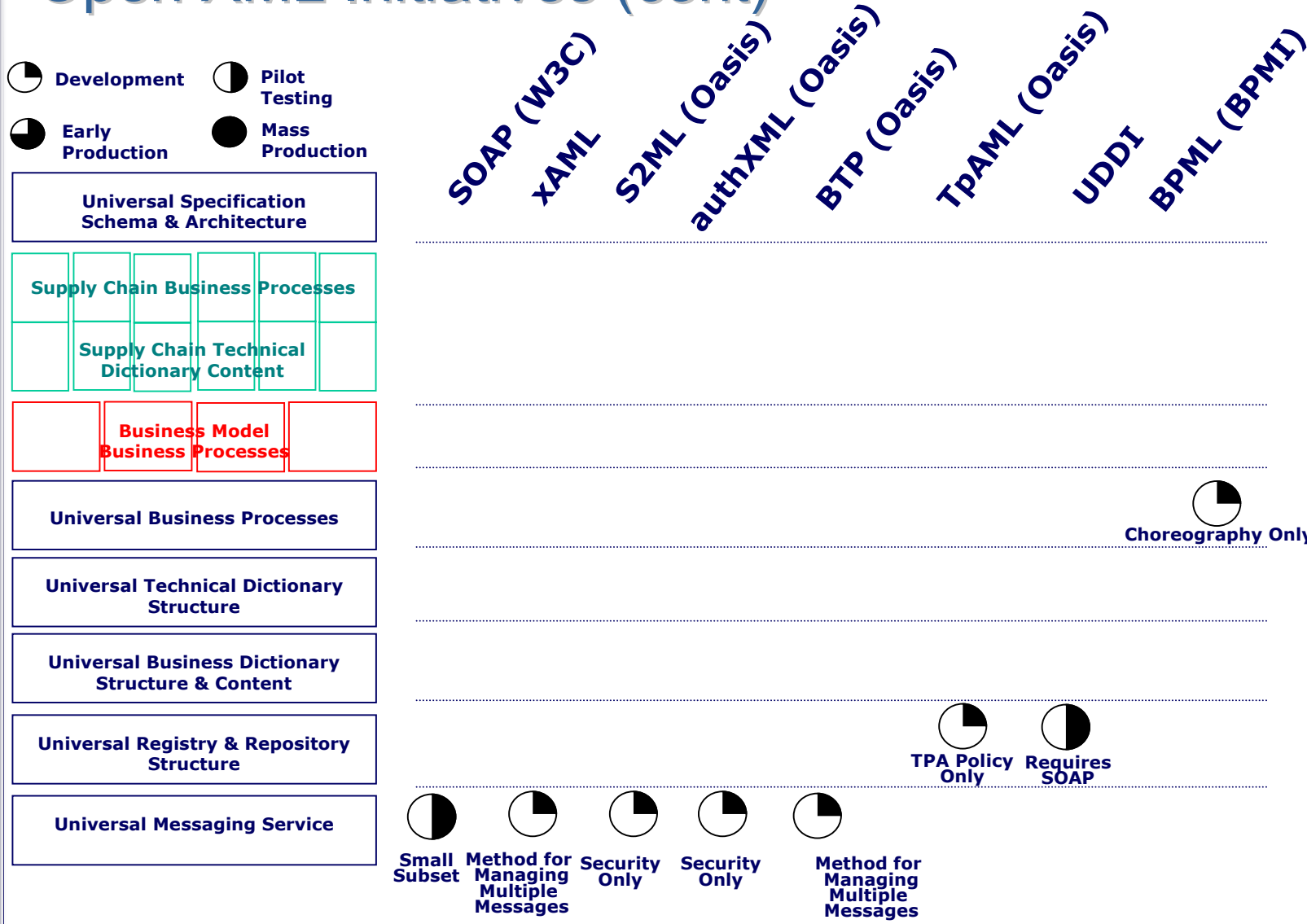
Source: RosettaNet

XML Standards Snapshot: Open XML Initiatives



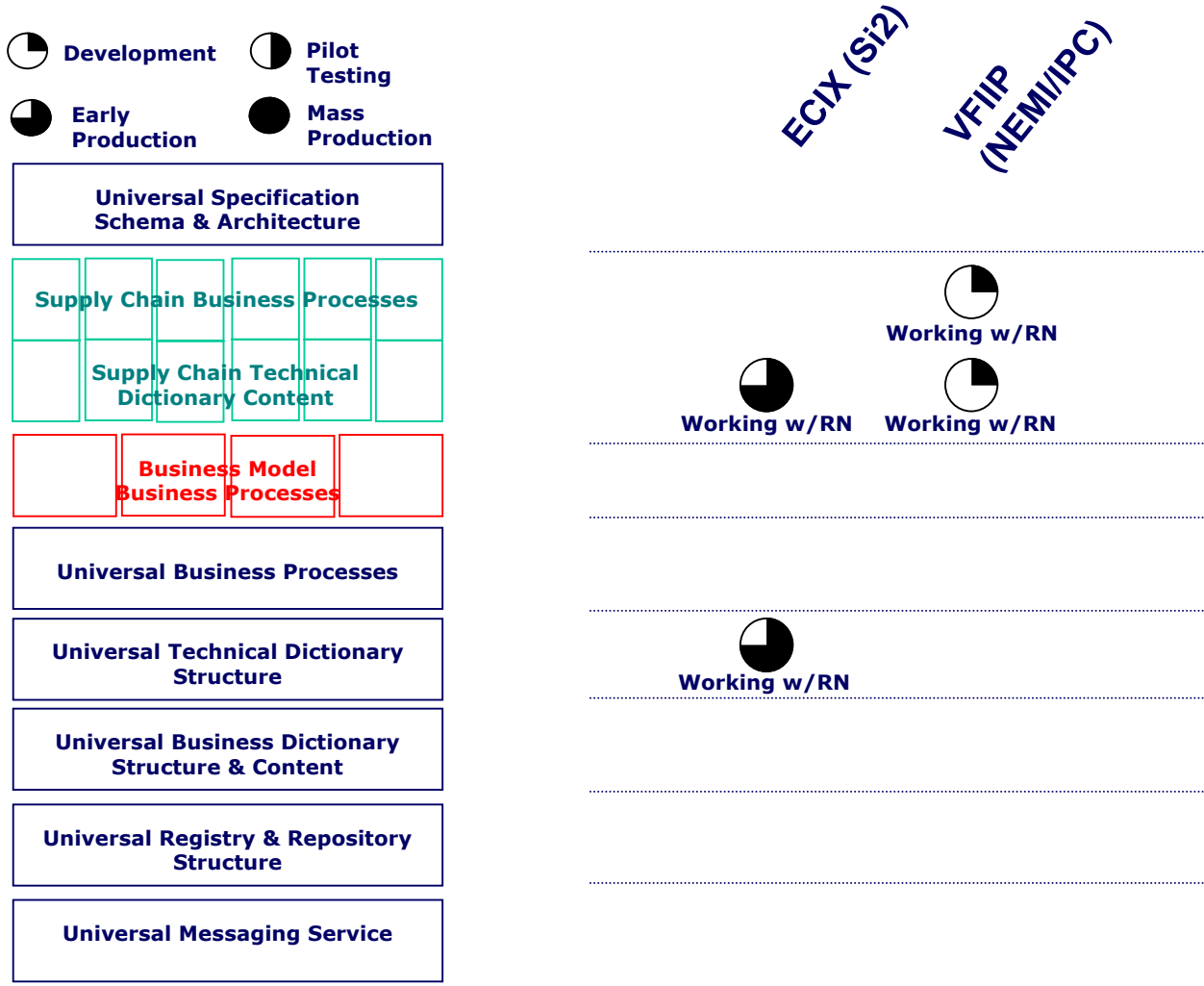
Source: "XML Standards Components and Convergence" - RosettaNet

XML Standards Snapshot: Open XML Initiatives (cont)



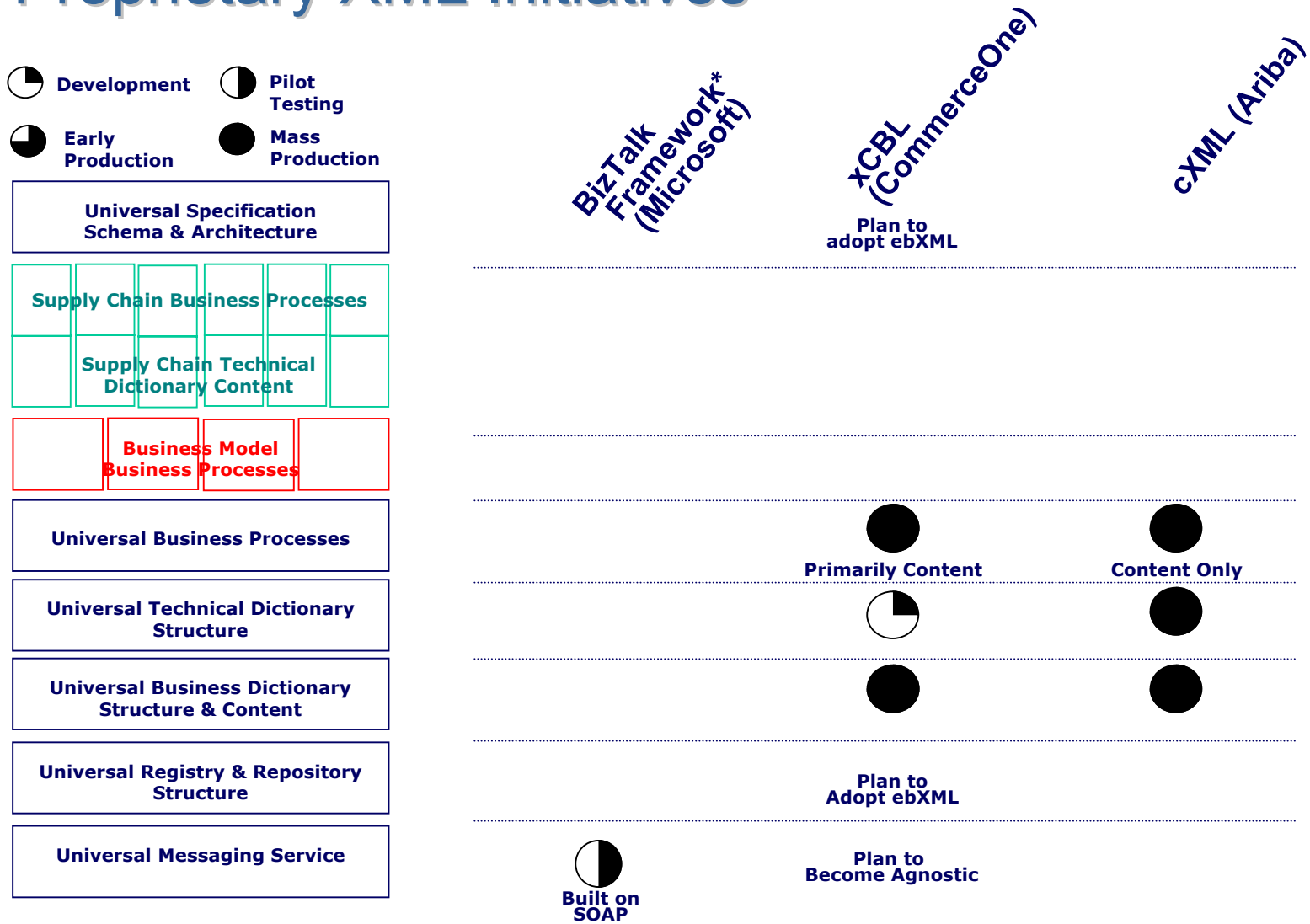
Source: "XML Standards Components and Convergence" - RosettaNet

XML Standards Snapshot: Open Electronic Component XML Initiatives



Source: "XML Standards Components and Convergence" - RosettaNet

XML Standards Snapshot: Proprietary XML Initiatives



* Not the same as BizTalk Server which is a commercial software product.

Source: "XML Standards Components and Convergence" - RosettaNet

B2B Integration scenario:
Automating Collaboration between Retailer - Wholesaler

- Steps:
  - partners agree on business process
  - partners implement their corresponding role in the business process
- B2B integration infrastructure:
  - process integration technology and process modeling tools
  - secure messaging infrastructure
  - XML transformation technology
- Discovery services:
  - to locate sellers of services and browse alternatives

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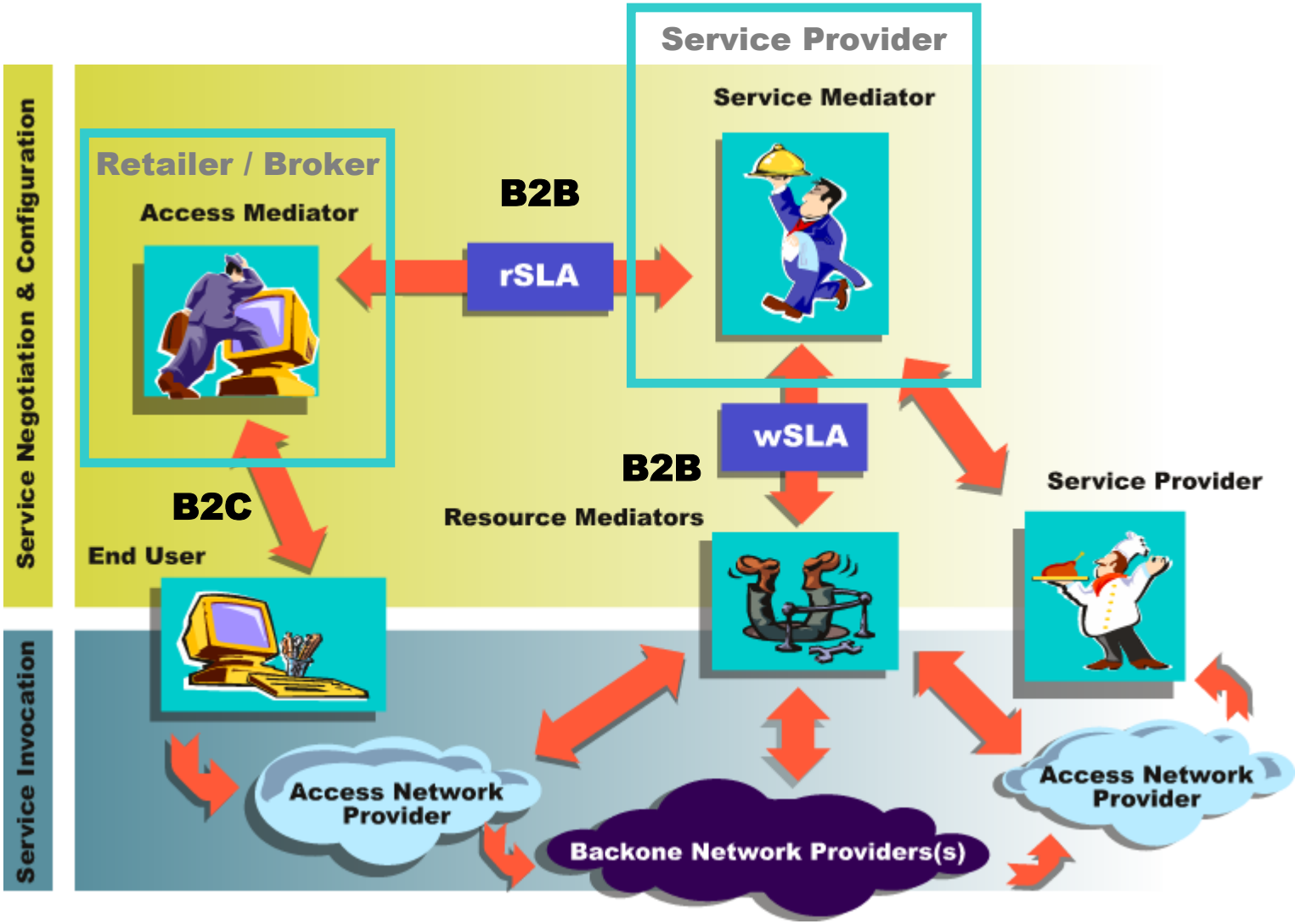
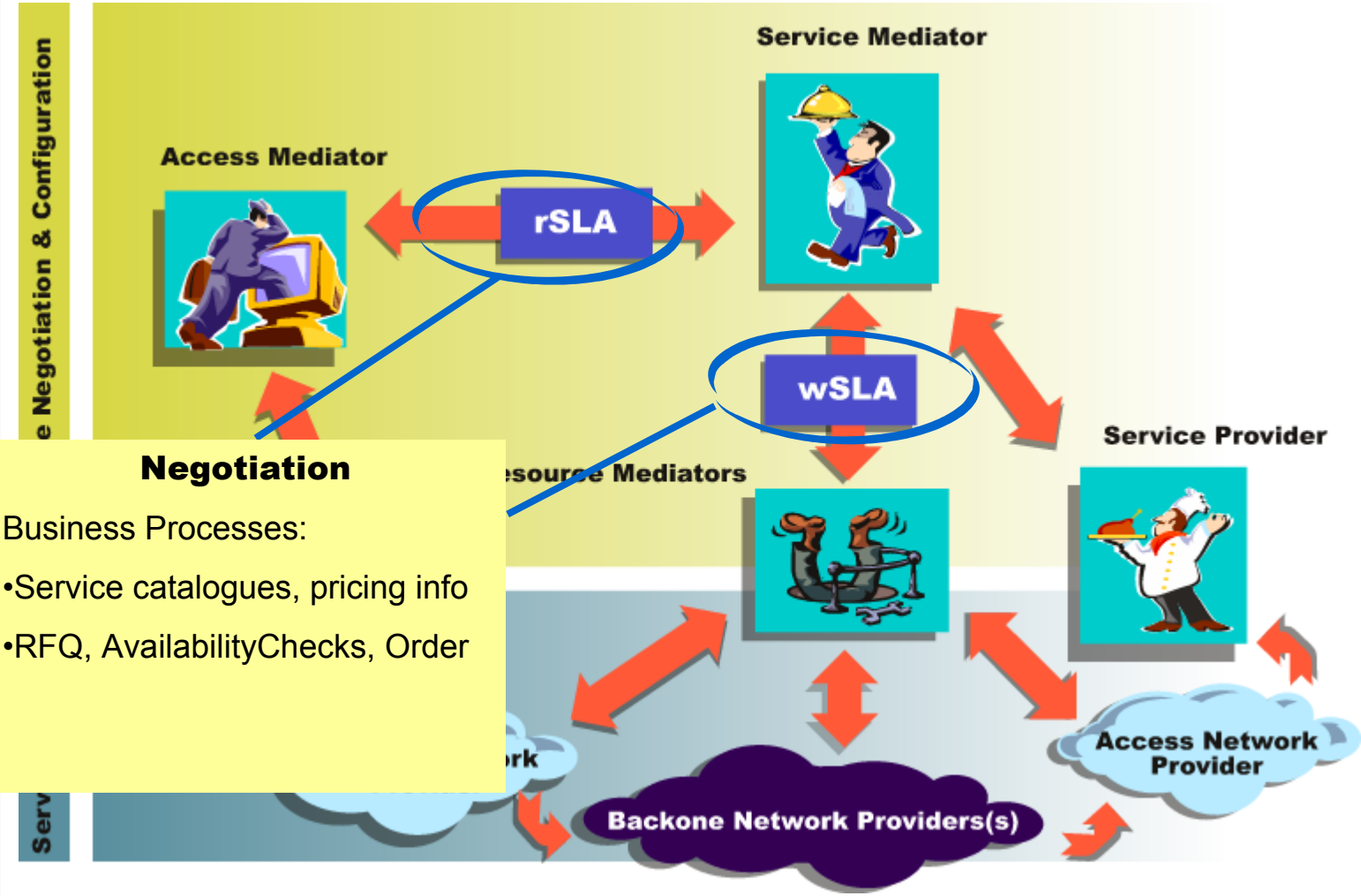
Achieving Reuse through Common Business Processes

- Potential for reuse of Business Process specification is an expected benefit of ebXML framework
- Reuse at process modeling stage:
  - business process, transaction level
  - business document level
- Horizontal vs Vertical Processes
- Approaches to Business Process definition
  - adoption of “Off-the-Shelf” processes
  - realisation of customised processes via composition of standard process patterns

E-Commerce in CADENUS:
The Mediation Component Framework



Mediation Component Framework : Service Negotiation

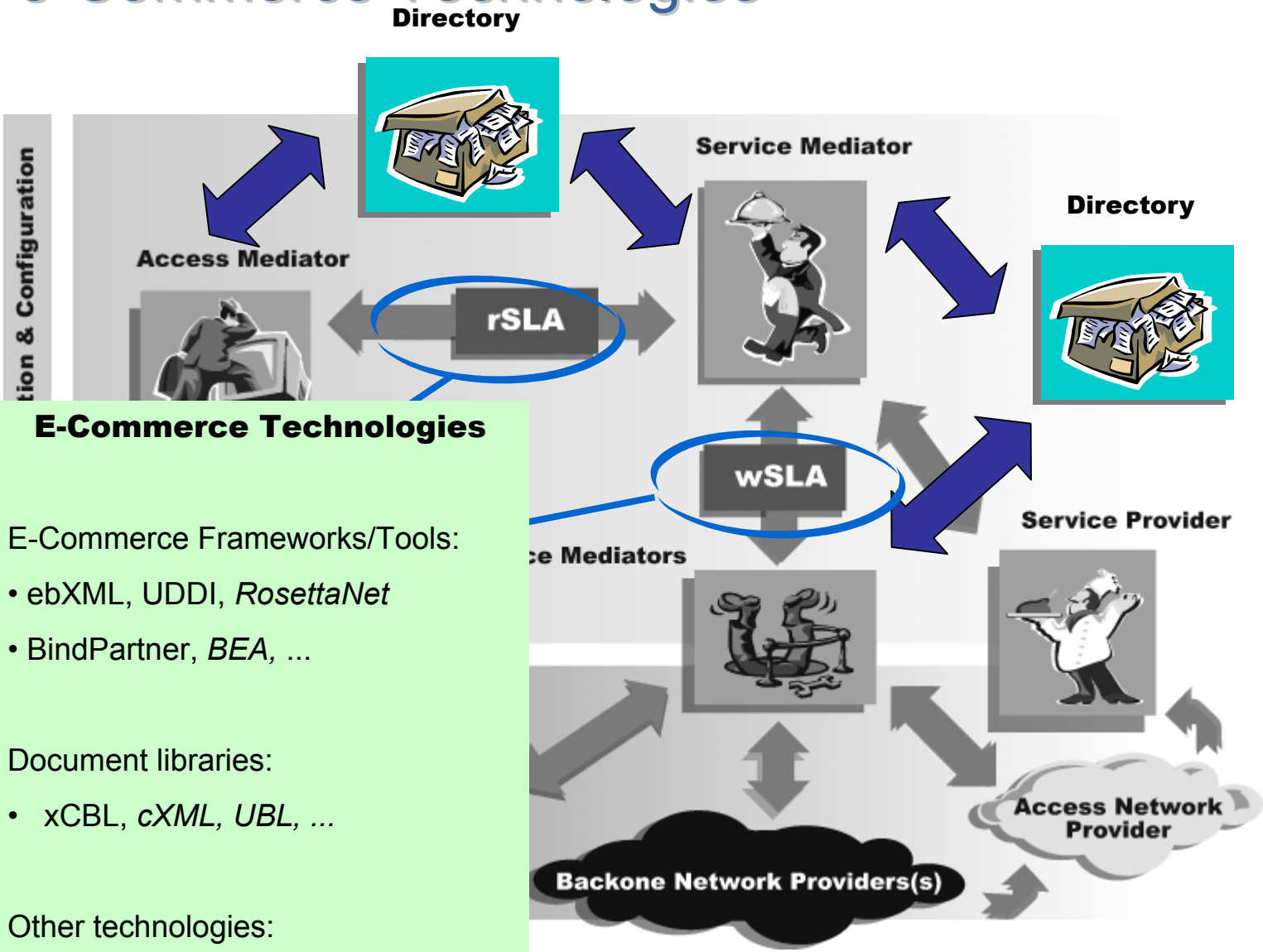


Negotiation

Business Processes:

- Service catalogues, pricing info
- RFQ, AvailabilityChecks, Order

Mediation Component Framework : e-Commerce Technologies



E-Commerce Technologies

E-Commerce Frameworks/Tools:

- ebXML, UDDI, *RosettaNet*
- BindPartner, *BEA,* ...

Document libraries:

- xCBL, *cXML, UBL, ...*

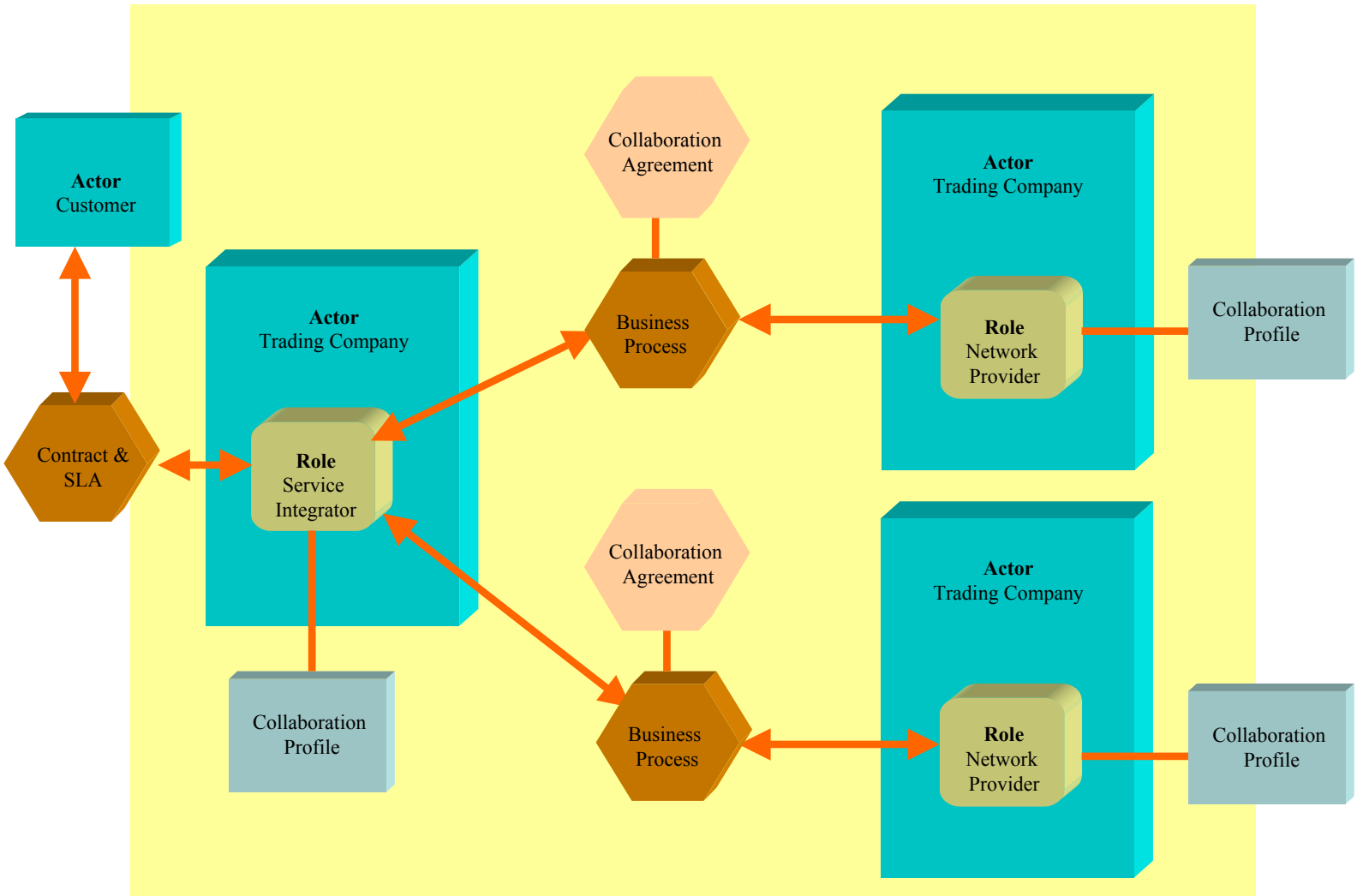
Other technologies:

- XSLT, SOAP, ...

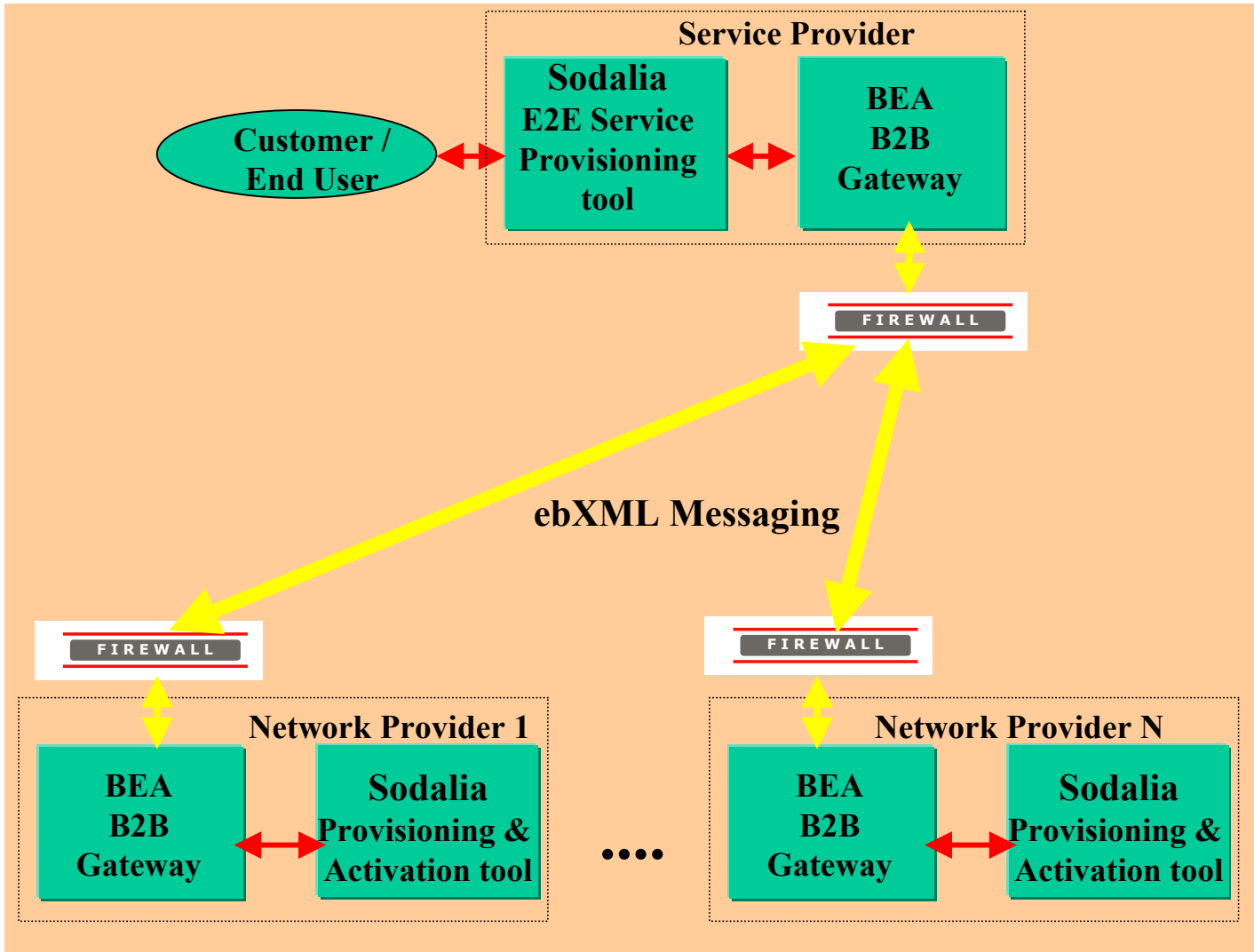
An example of B2B integration

- EURESCOM P1106 project:
  - "e-commerce impacts on service & network operations & management"
  - *Operators*: Telecom Italia, British Telecom, Telenor, …
  - *Vendors*: Acterna, BEA, Spirent, Sodalia
- Demonstration at NOMS 2002:
  - Provide an example of B2B integration in the telco domain:
    - *design of an ebXML Business process for trading IP QoS Services in a multi-domain, inter-operator context*
    - *integration of Sodalia NetFulfill provisioning platform and BEA WebLogic Integration platform*
  - Partially based on Cadenus Service Mediator developments and Cadenus IP QoS Trading business process specification

Business Scenario (Supply chain)

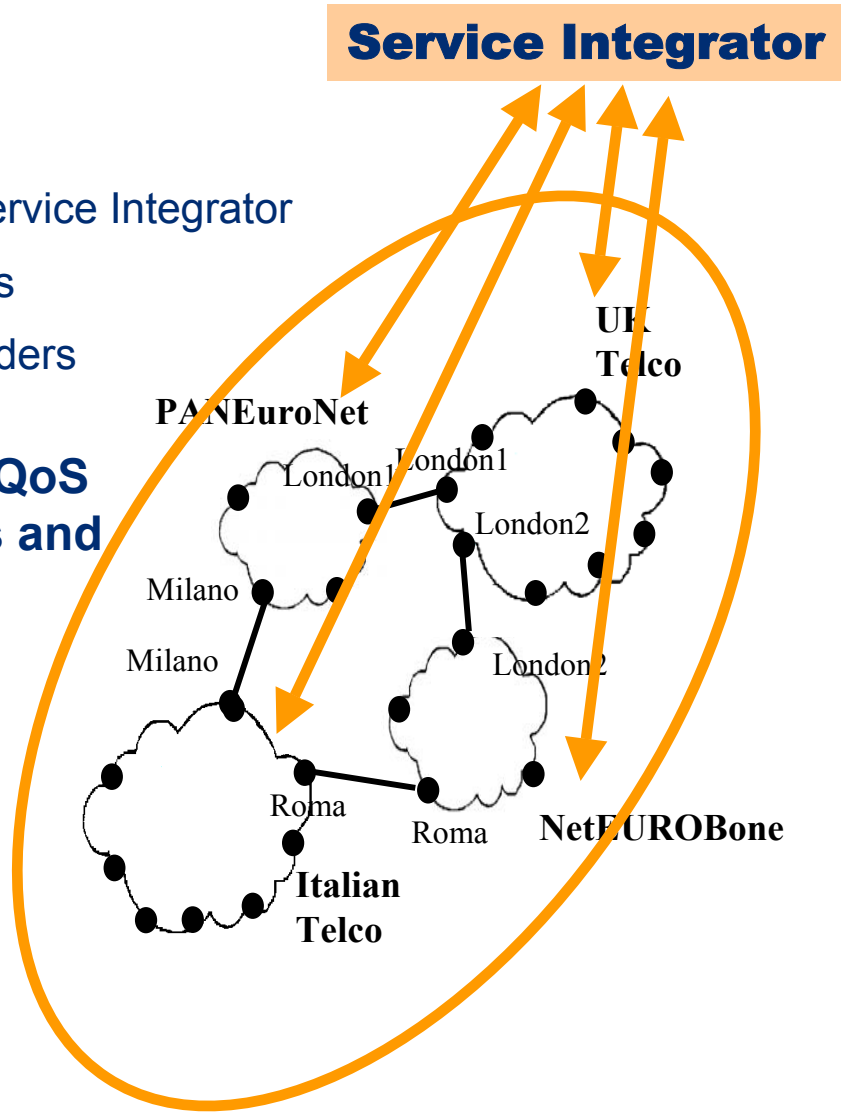


ebXML Business Process Implementation Components

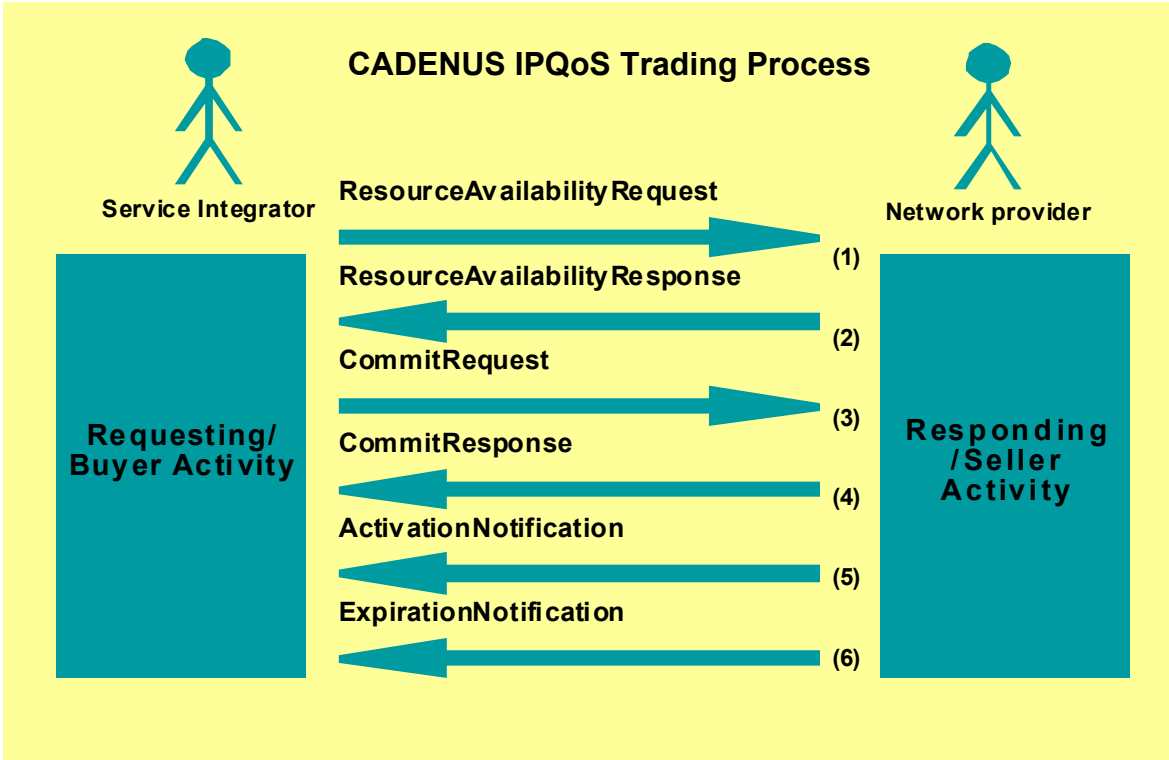


Demo Scenario

- **Actors**
  - A Service Provider acting as Service Integrator
  - Two National Network Providers
  - Two European Backbone Providers
- **The Service Integrator buys IP QoS Connectivity services from NPs and delivers e2e connectivity to its customers**
- **The Service provider has B2B agreements with NPs**



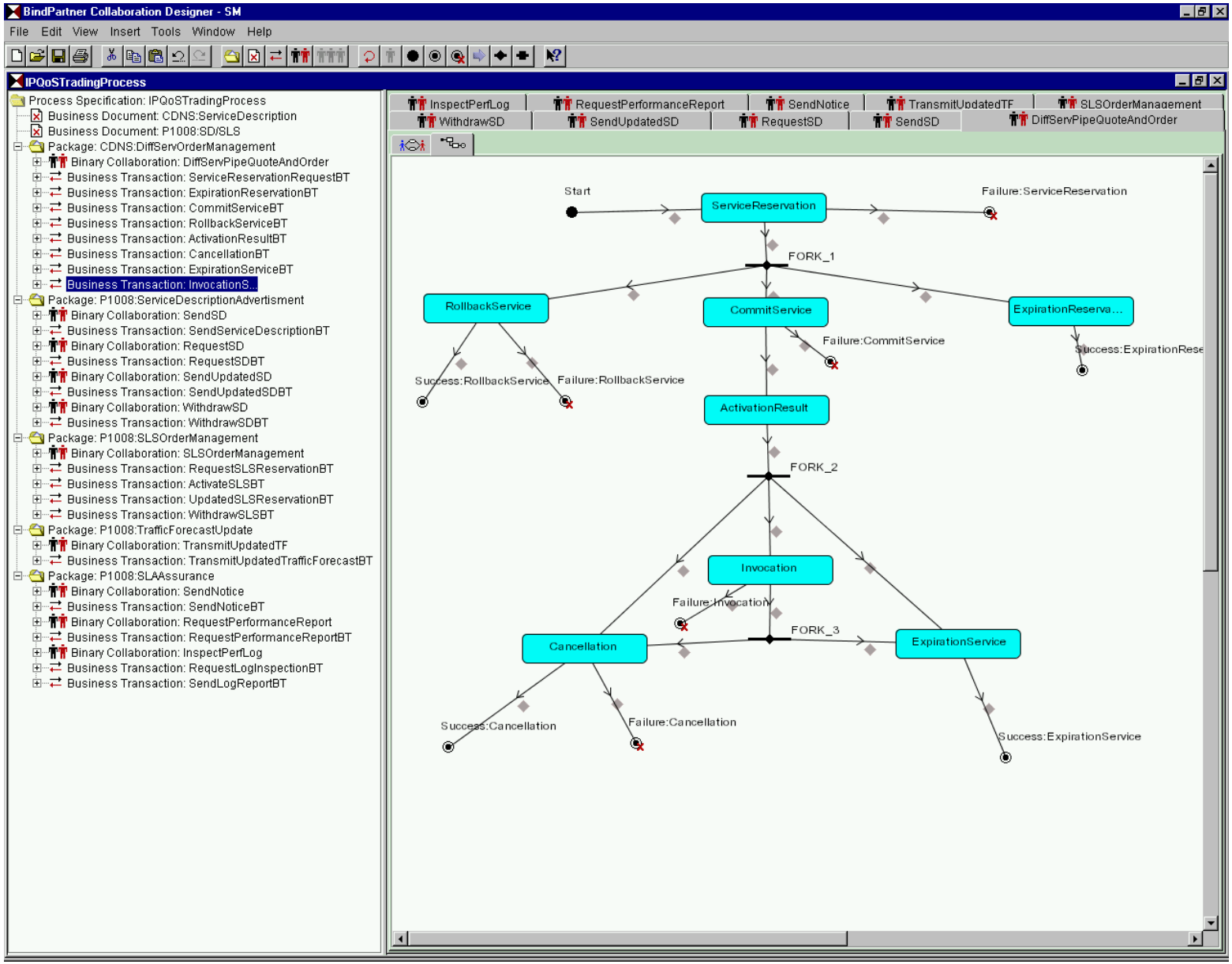
Trading IP QoS Services



Business Process

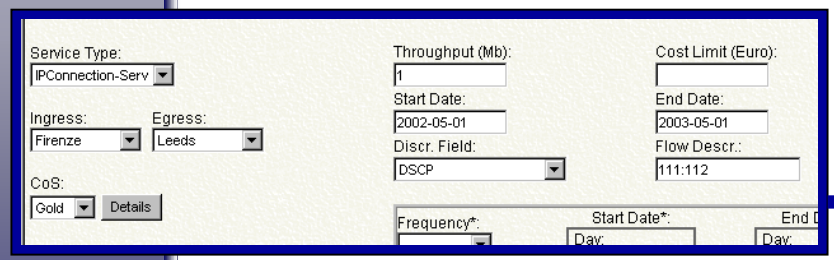
- trading of IP QoS Connectivity Services based on P1008 negotiation model
- using SLS as technical annex to SLA
- based on the ebXML Business Process Specification Schema

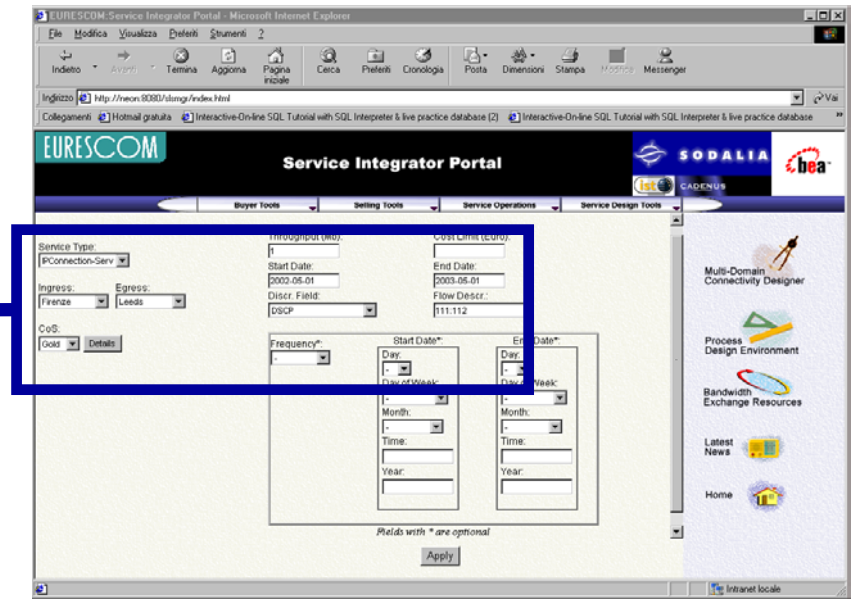
ebXML Process Model



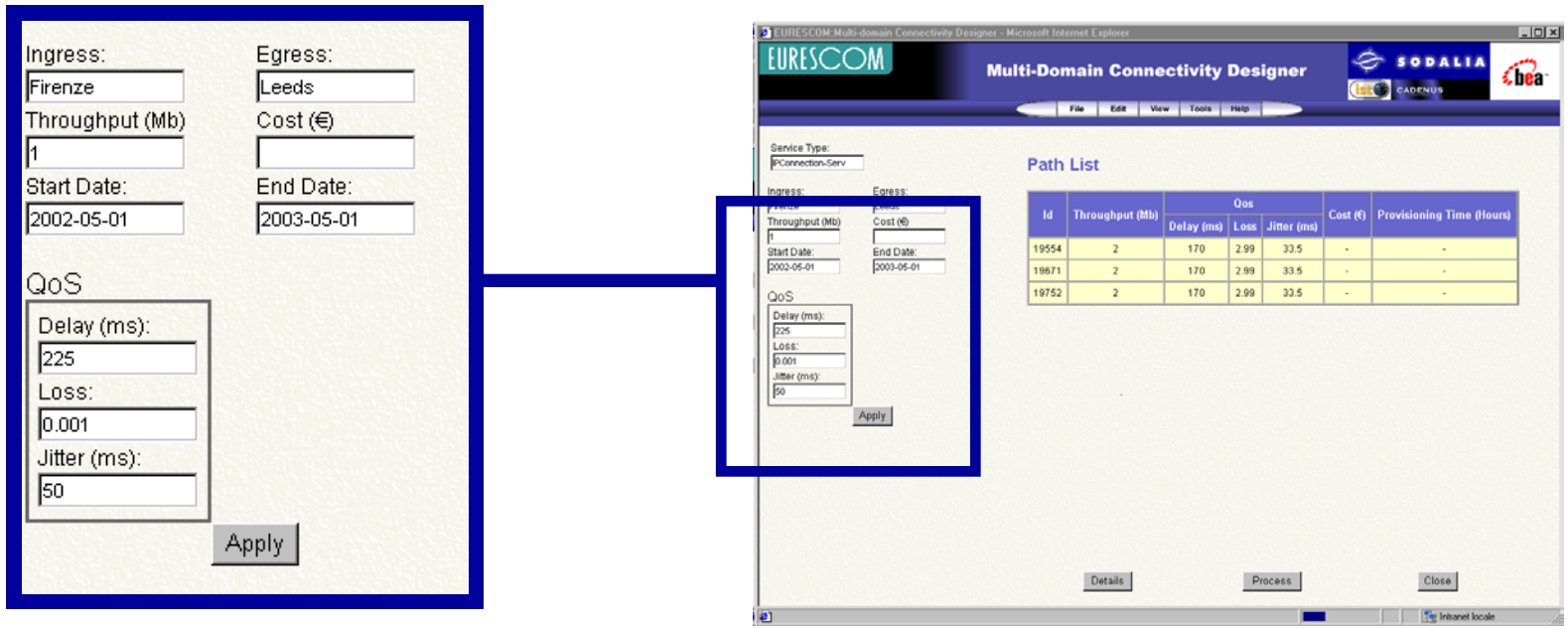
Buying IP QoS Connectivity in a Multi-Domain, Multi-Operator Context

- Service Provider may buy IP QoS connectivity for:
  - fulfilling an end-user request
  - as part of a capacity planning process





Building E2E Connectivity



Sodalia Multi-Domain Connectivity Designer: A DSS for:

- analyzing NPs services
- identifying suitable offerings, given QoS reqs
- ranking in accordance to desired criteria

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Conclusions

- Delivering end-user services with adequate service level guarantees requires coordination between providers in the value-chain
- Coordination needs to occur at:
  - business process level
  - network configuration level
- Providers trading telco services may benefit from B2B integration technology:
  - to advertise their offerings, locate potential partners and compare alternatives
  - to deal with diversities in IT infrastructure and processes of partners
  - to support the negotiation of service levels with network resource providers and the exchange of SLA report information