
B2B Integration with ebXML –

Lessons learned from industrial use and challenges for the future

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IFIP E3, Poznan

B2B Integration...

- ❑ ... Is needed alongside the supply chain, across sectors
- ❑ ... Is also needed within sectors: Banking, Insurance, Healthcare, ...
- ❑ ... Is needed for Integration with public authorities: Customs, Tax, Courts, ...
- ❑ ... Nothing new: Message based, EDI exists for over 20 years
- ❑ ... Still potentially expensive if wrong technology is applied
- ❑ ... Is not only a technical problem: It combines organisational, legal, economic, process, and technical aspects!
- ❑ Many roads lead to Rome
 - Web Services
 - „Classical“ EDI
 - ebXML

Solving the right problem

❑ **Web services:**

- point-to-point client/server call
- Server is exposed to the Internet
- Asymmetric approach: Client vs. Server
- Fine-grained, RPC-oriented
- Synchronous communication
- Only the least part is standardized

❑ **ebXML:**

- secure, reliable B2B exchange of documents (XML and others)
- Symmetric approach: Business applications exchange messages
- Coarse-grained, document oriented
- Asynchronous communication
- Several aspects standardized: Document packaging, reliable communication, authentication, etc.

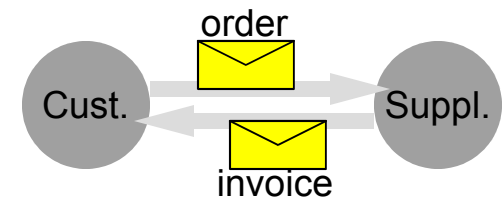
Example

Availability look-up at Amazon
For books on stock

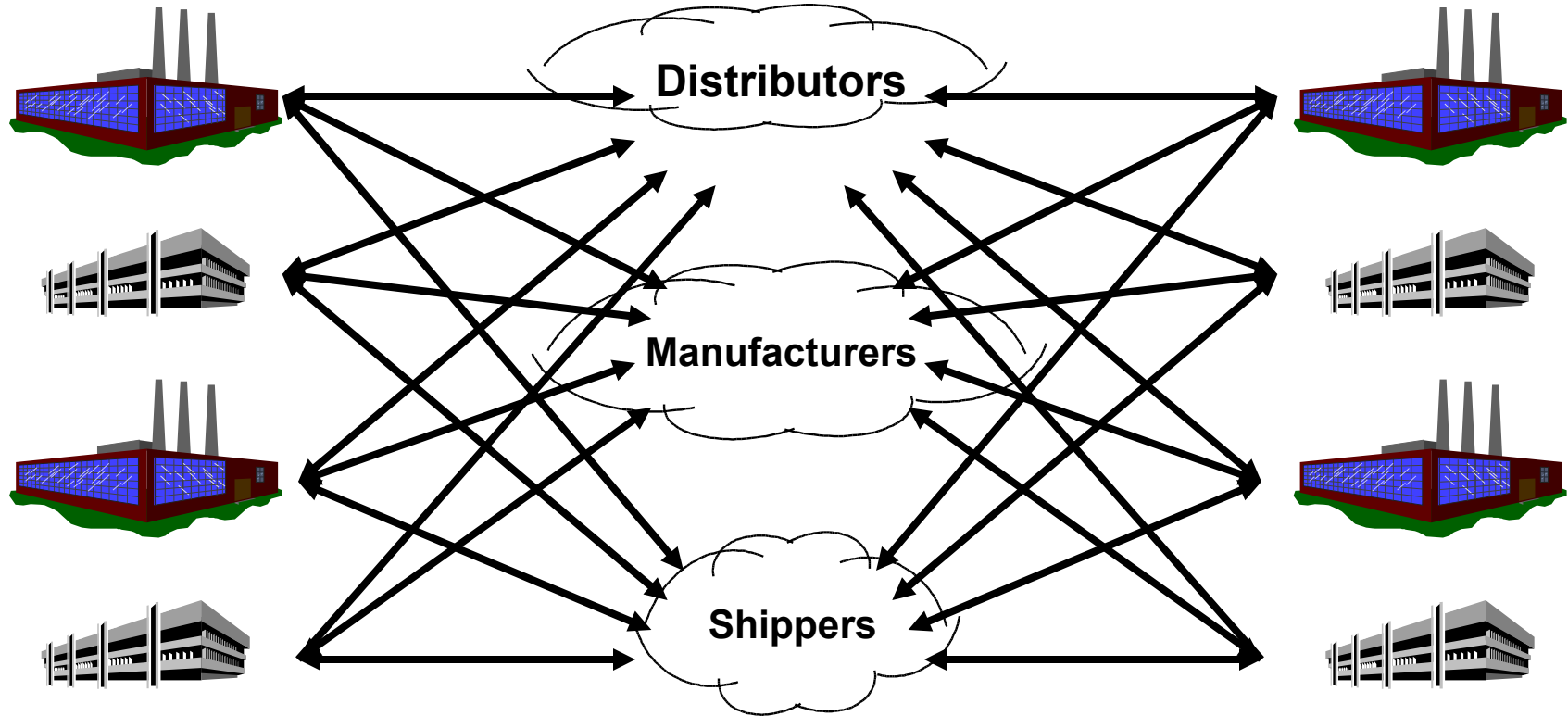


Example

Customers and suppliers exchange
Orders, order confirmations, invoices
Delivery messages, stock information



Traditional EDI / XML Data exchange



Each arrow is a project of its own!

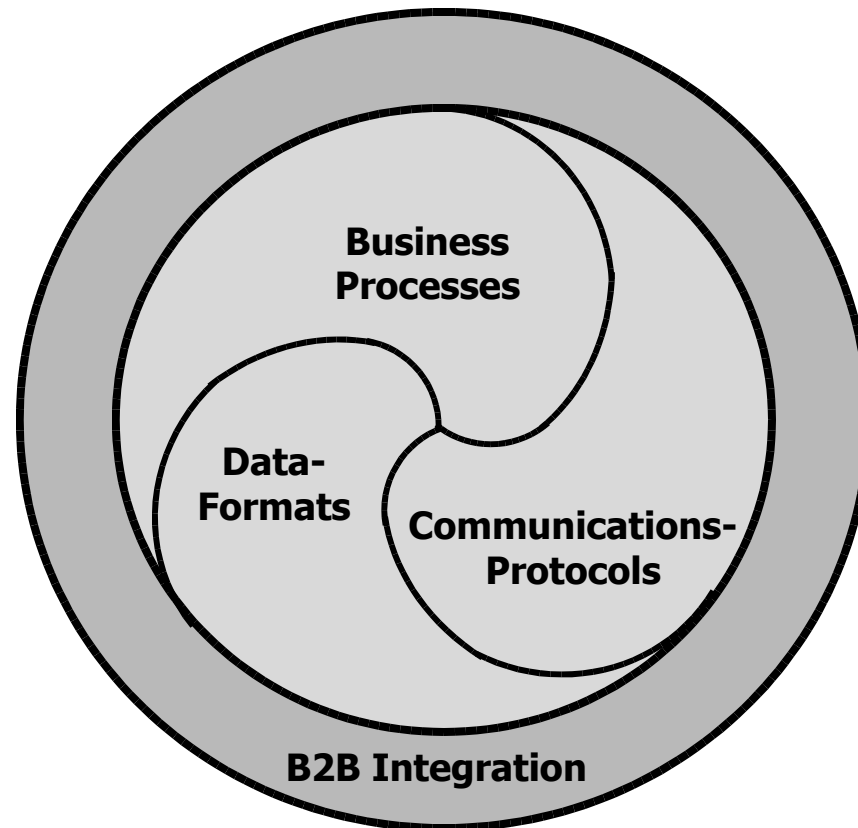
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Email from 4.4.2003

Un-coordinated integration leads to “Spaghetti Communication!”

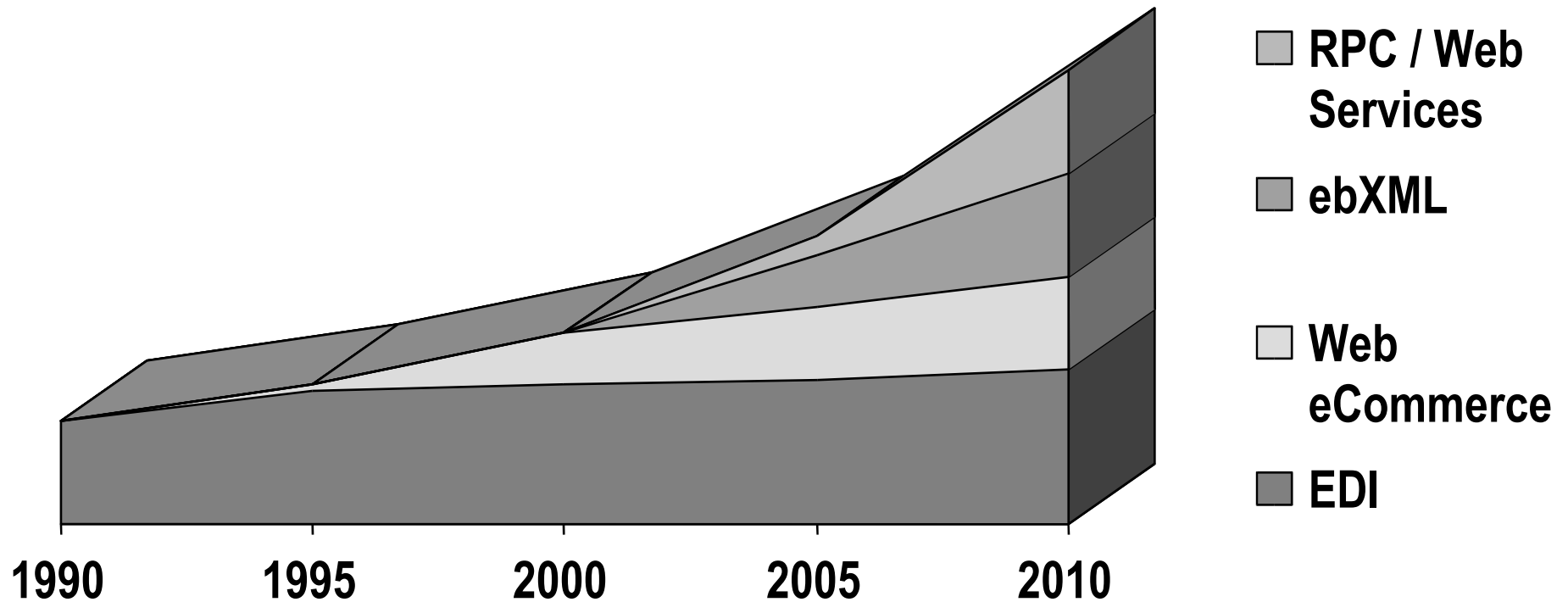
To avoid „Spaghetti Communication“

- ❑ **Standardise** document formats, business processes, business rules (doc & process), communication protocol, communication software, codification, ...
- ❑ Set-up a **harmonized organisation** for support, roll-out, integration work etc.
- ❑ **Central project office** that combines development, support, integration.
- ❑ **Legal aspects:** have the same agreement between Ponton and the customer consortium to avoid any discussions on individual rights & obligations.
- ❑ **Economic incentives:** Who are the early movers? How to create an incentive to move ahead before the rest of the participants?
- ❑ **Pricing:** Sector-wide license, all participants share development cost

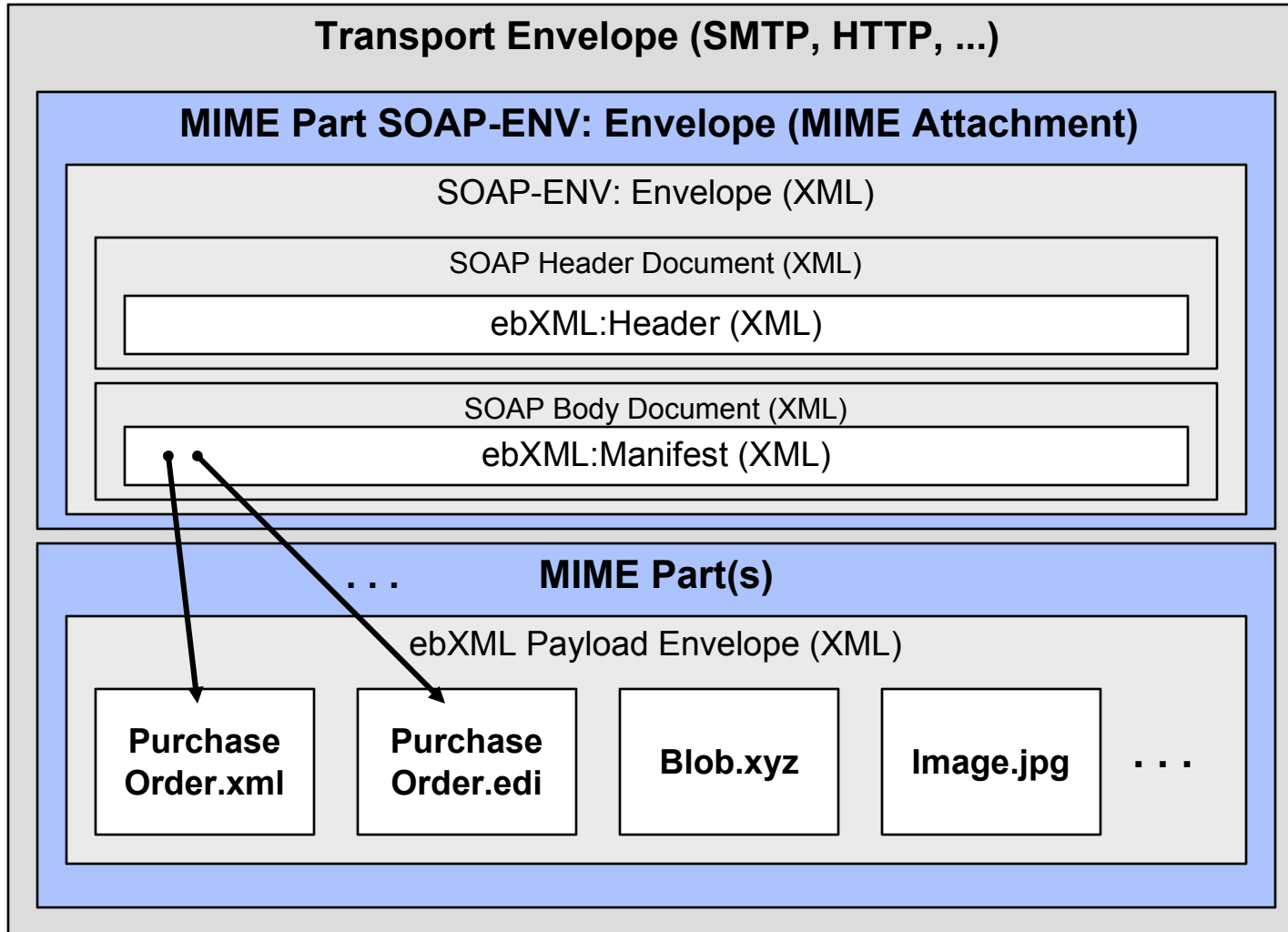
The „Yin, Yang, Yong“ of B2B Integration



Web Services and ebXML will co-exist in the long run



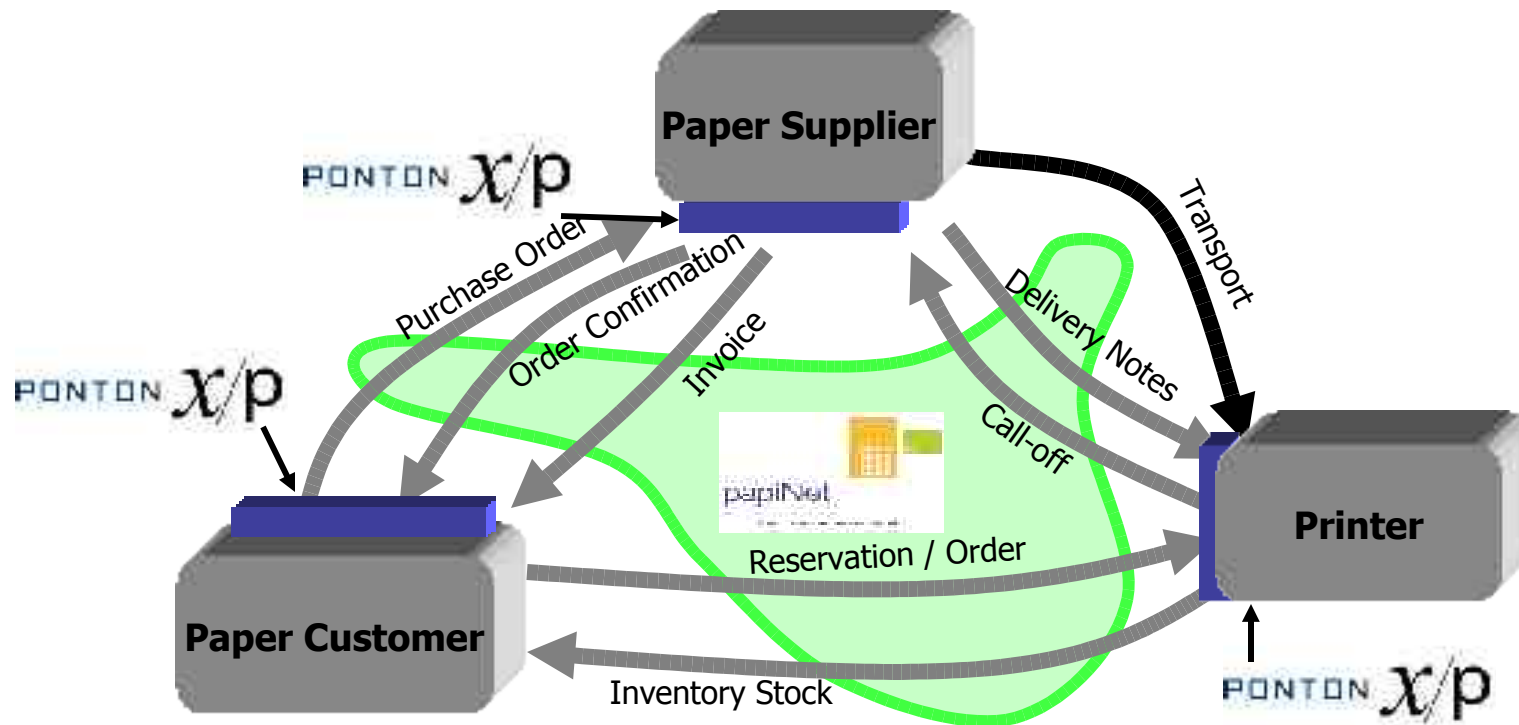
ebXML 2.0 Message Service Envelope Structure



Users of papiNet (Selection out of > 75)



In case of the papiNet project, Ponton helped Standardising the Yin / Yang / Yong of the Paper Industry



EFETnet Users

Early Movers (Q3/05)



Live today

Second Movers (Q4/05)



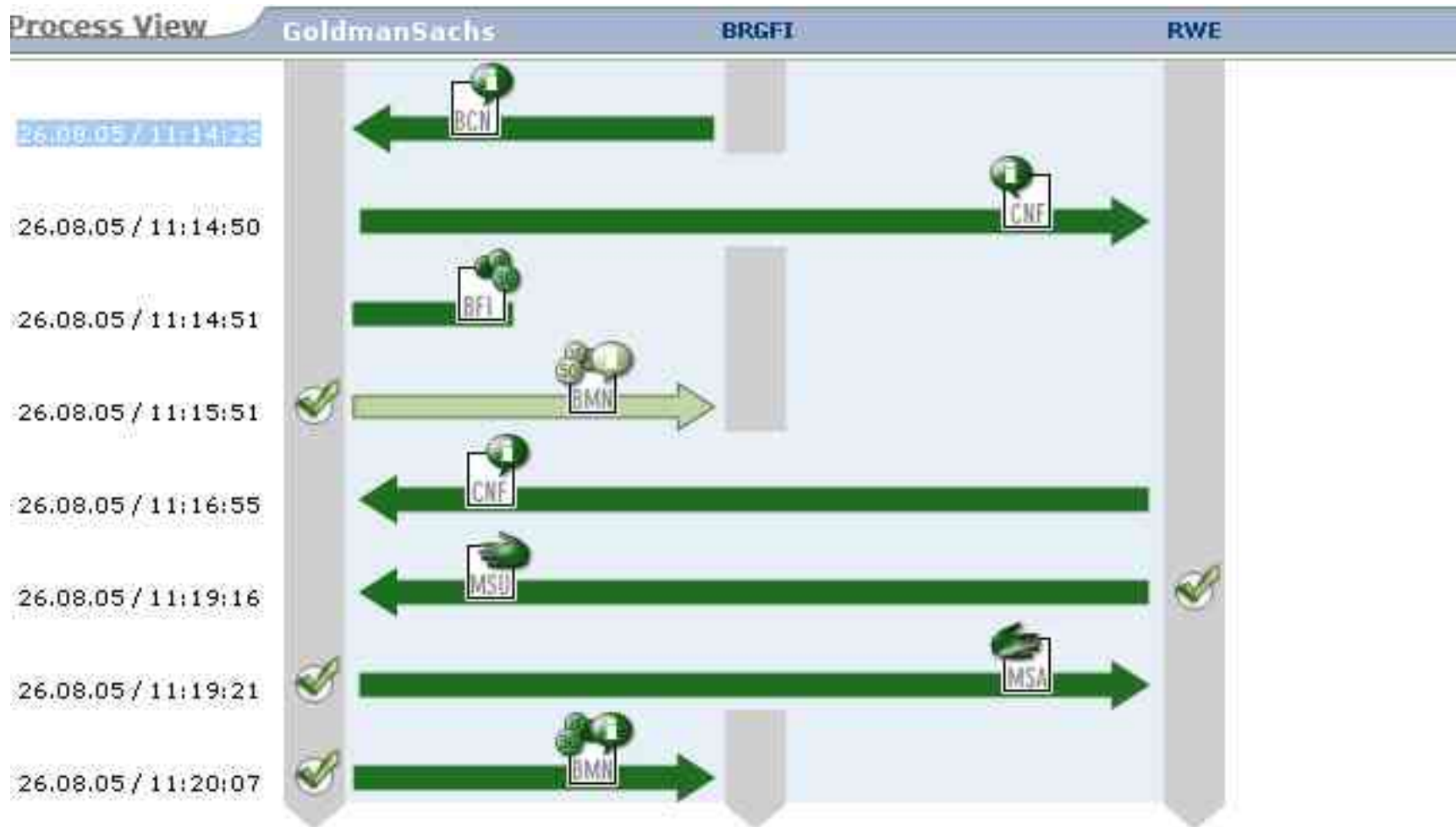
Plans to go live by end of 2005

Third Wave (Q1/06)

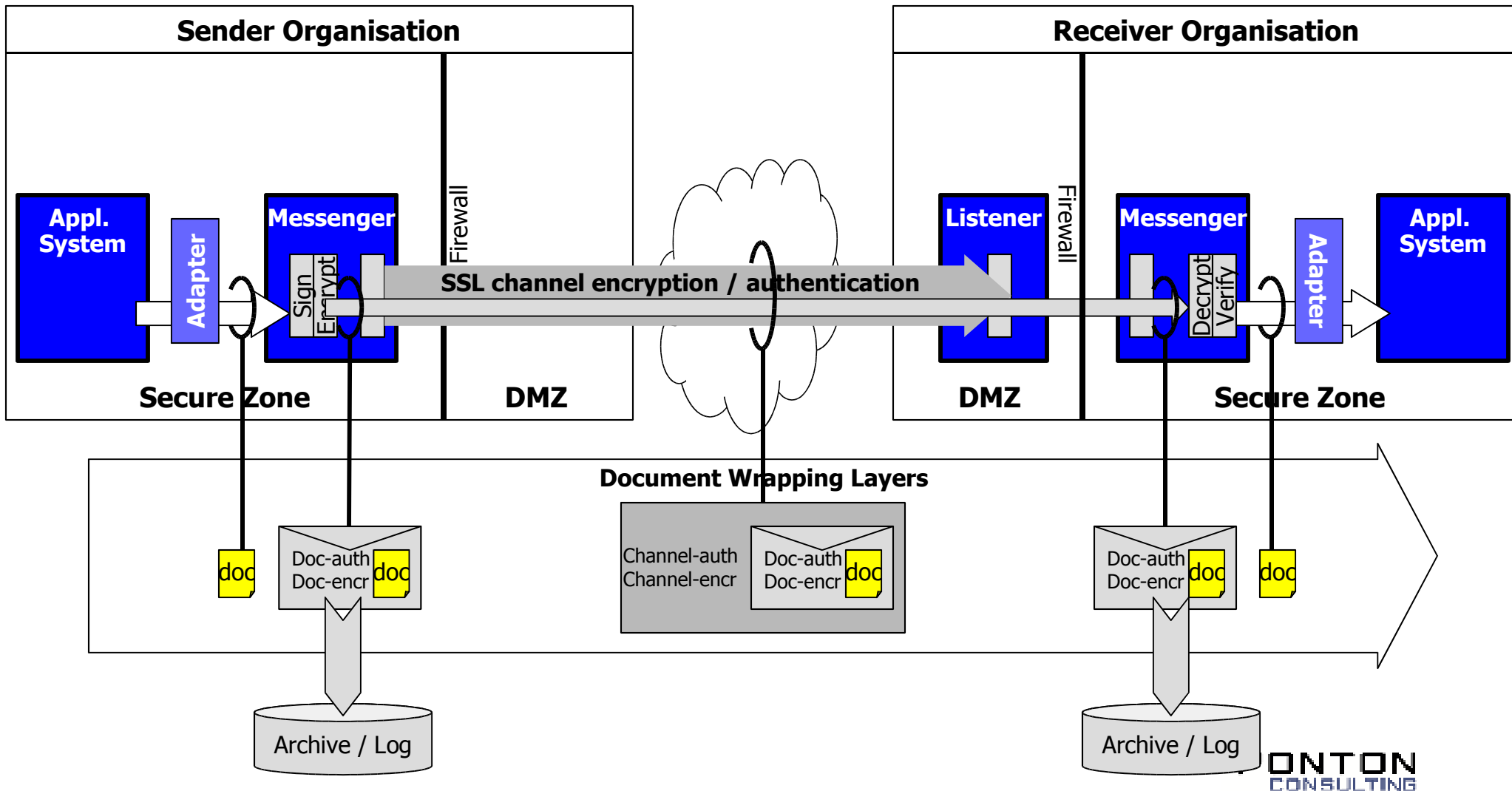


Go live in Q1 2006

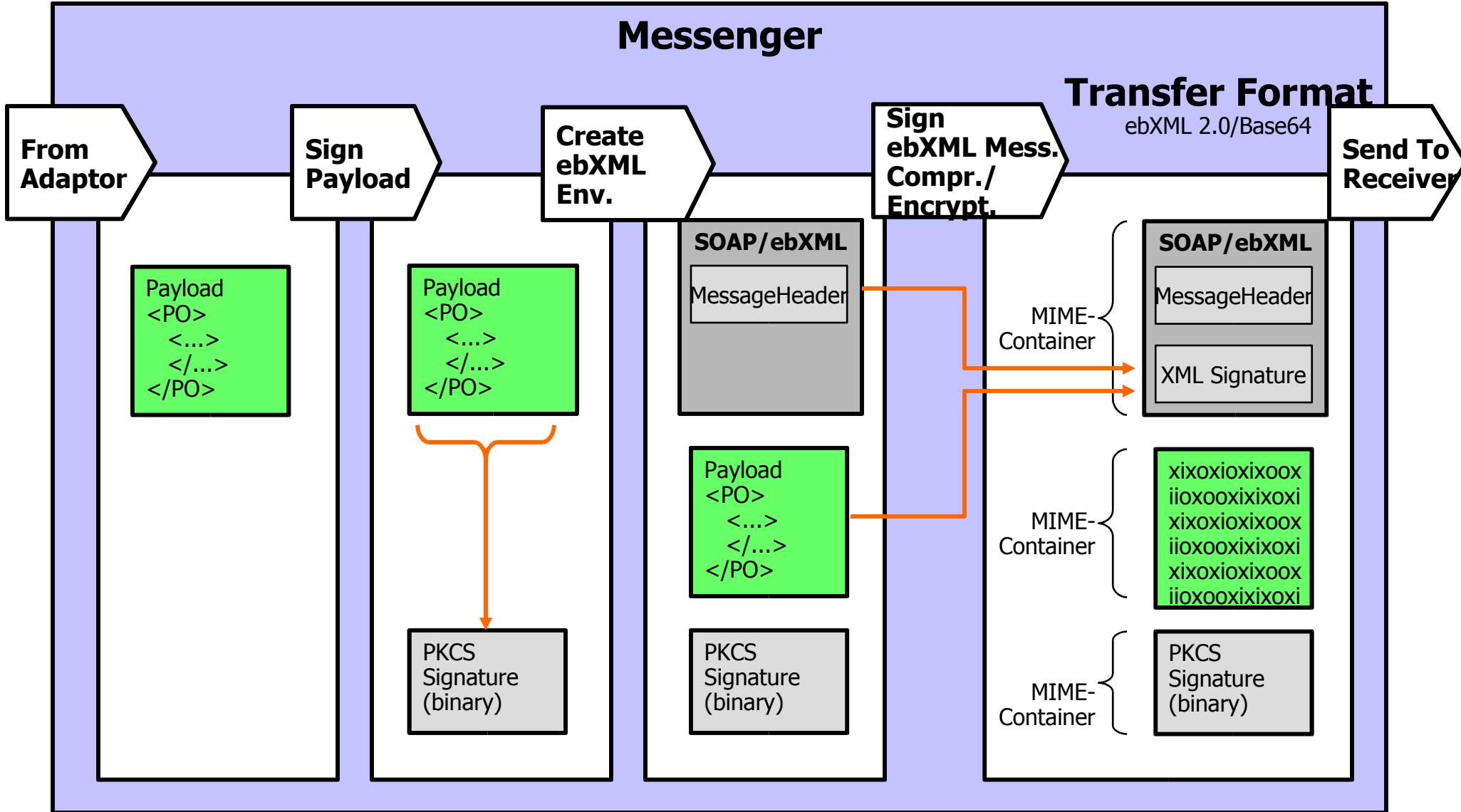
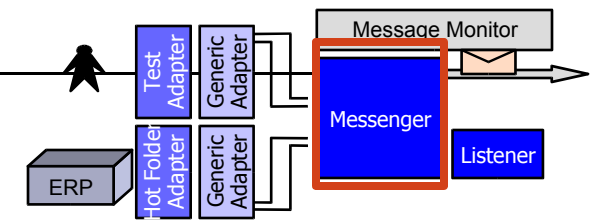
EFETnet Project: European Energy Traders automatically exchange Trade Confirmations



Security Aspects for Integration



What does the ebMS exactly sign?



Document Formats and their Processing

	xml	edi	bin
Routing	Defined by Agreement	Defined by Agreement	Defined by Agreement
Protocol	ebXML, AS1/AS2	ebXML, AS1/AS2	ebXML, AS1/AS2
Validation	XML Schema	Custom Plug-In	Custom Plug-In
Encryption	DES / AES	DES / AES	DES / AES
Authentication	RSA	RSA	RSA
Compression	ZIP	ZIP	ZIP
Visualisation	XSL	Custom Plug-In	Custom Plug-In

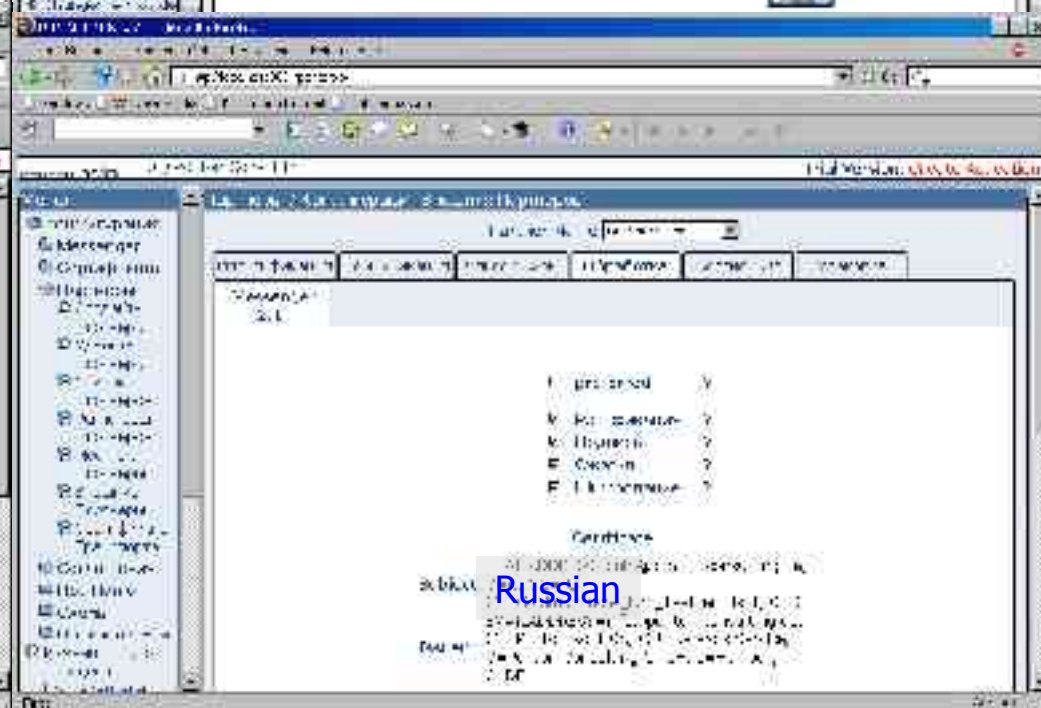
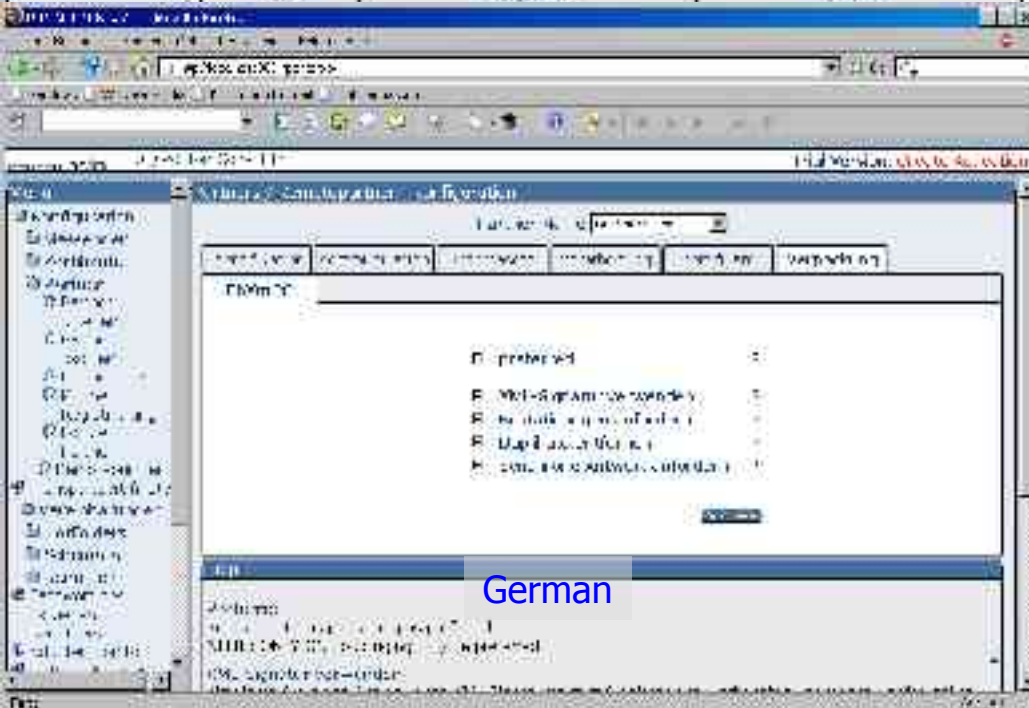
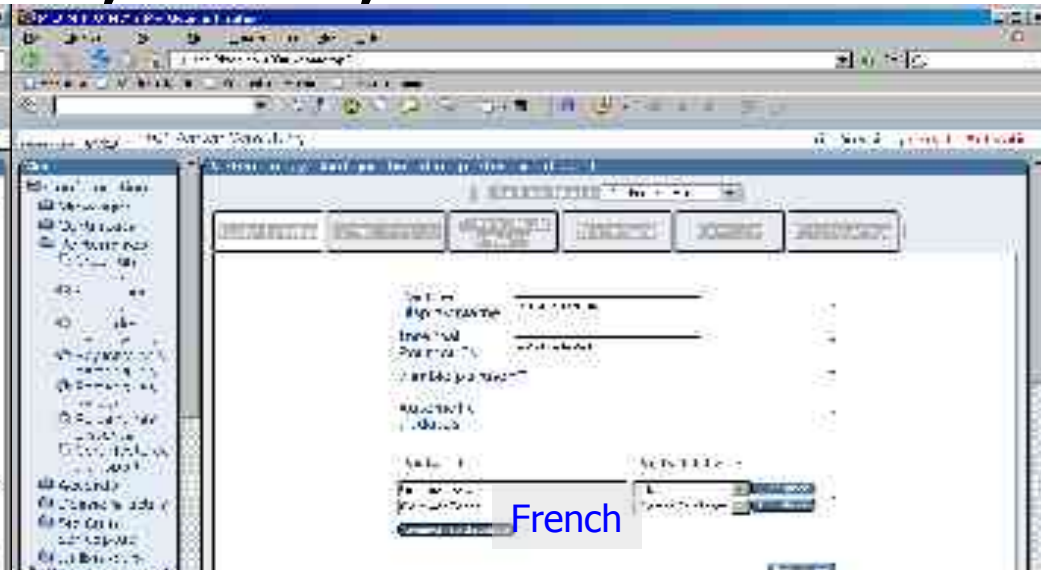
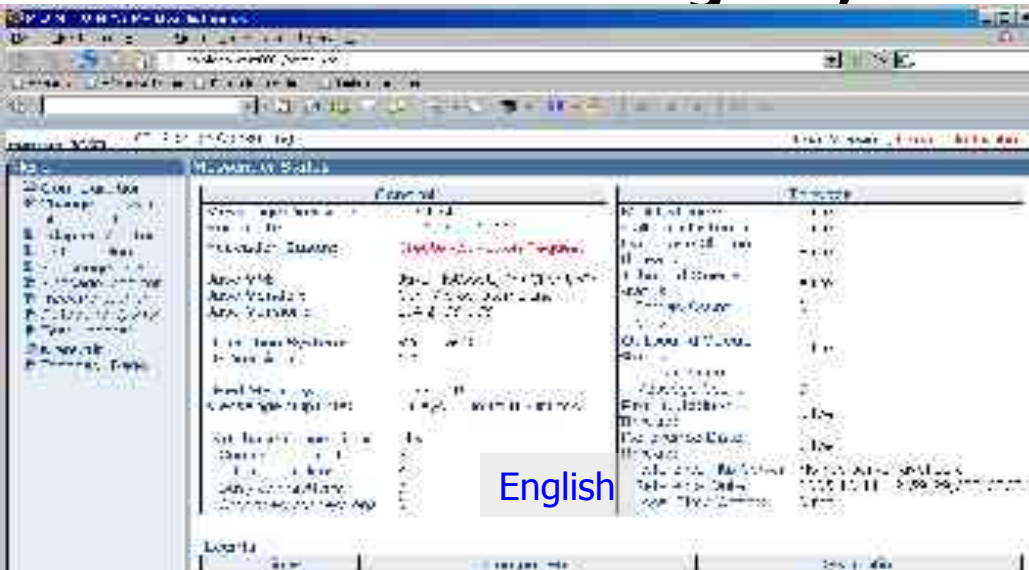
xyzxyzxyz

Standard Filter of Ponton X/P

Custom Plug-In

Format-specific Plug-In for validation and visualisation

Localisation: English, German, French, Russian...



Conclusion

„As we know, there is the known known,
Which are things we know we know.
But there are also things we know we don't know
Which are things we know we don't know.
And then there is the unknown unknown,
Which are things we don't know we don't know.“

(Donald Rumsfield)

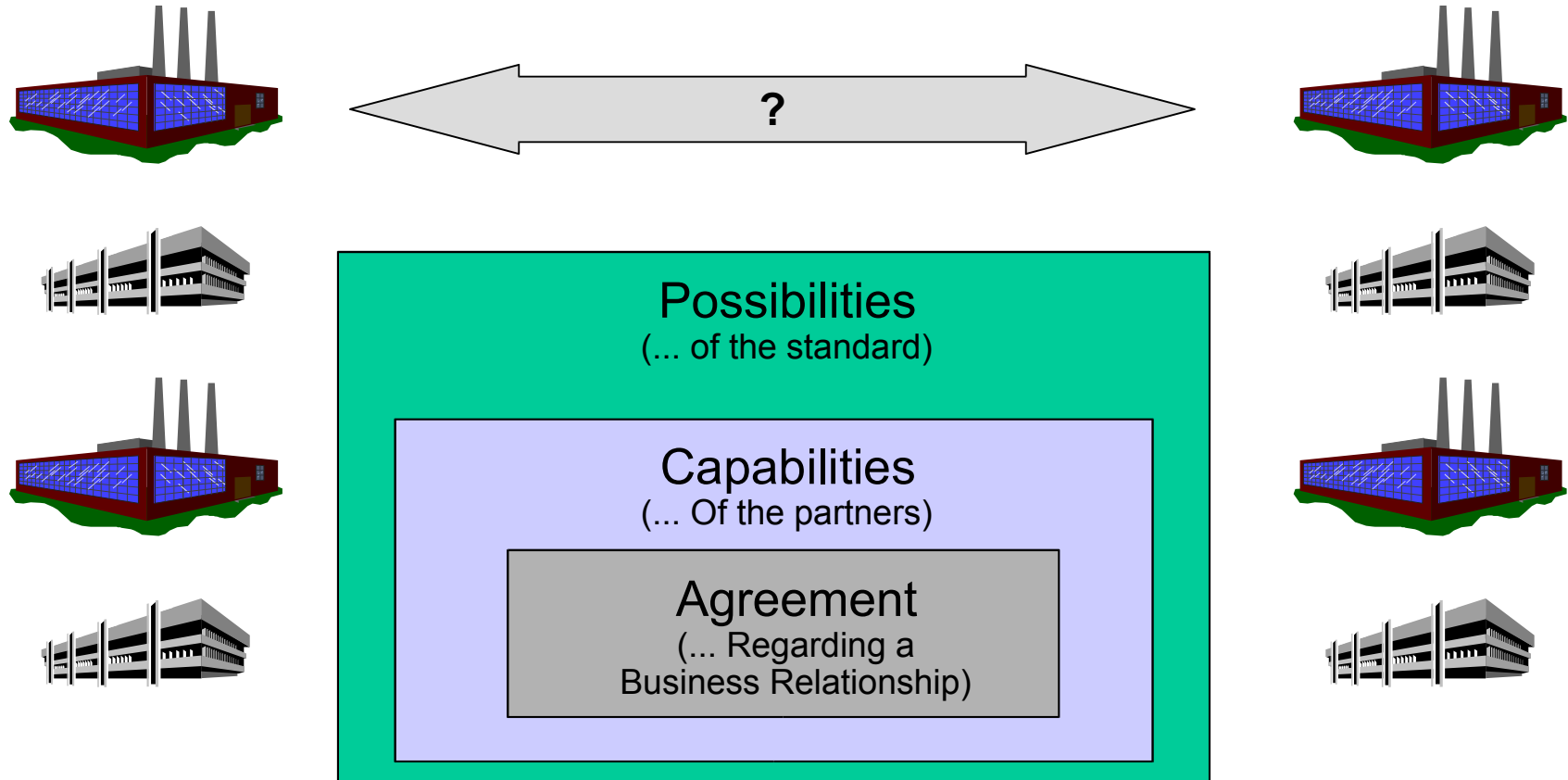
- ❑ We know that B2B Integration is a win-win-win for users, integration partners, and Ponton
- ❑ We know of over 120 Users of Ponton X/P world-wide, partly well-known
- ❑ We know of many more sector-wide integration projects
- ❑ We know there are many integration project that we don't know
- ❑ We do not know how many are there that we do not know...

So, let's start looking for them!



The End!

Agreement on Business Document Exchange



ebXML History

- ❑ Begun as 18-month initiative in November 1999
- ❑ V1.0 Specifications delivered on schedule in May 2001
- ❑ Current V2.0 Specifications from 2002
- ❑ Development and deployment of the specifications is continuing within OASIS and CEFACT with support from NIST, UCC/EAN, EU and more.
- ❑ Thousands of organisations integrated as of 2005. Heavily used in Asia and US, upcoming use in Europe



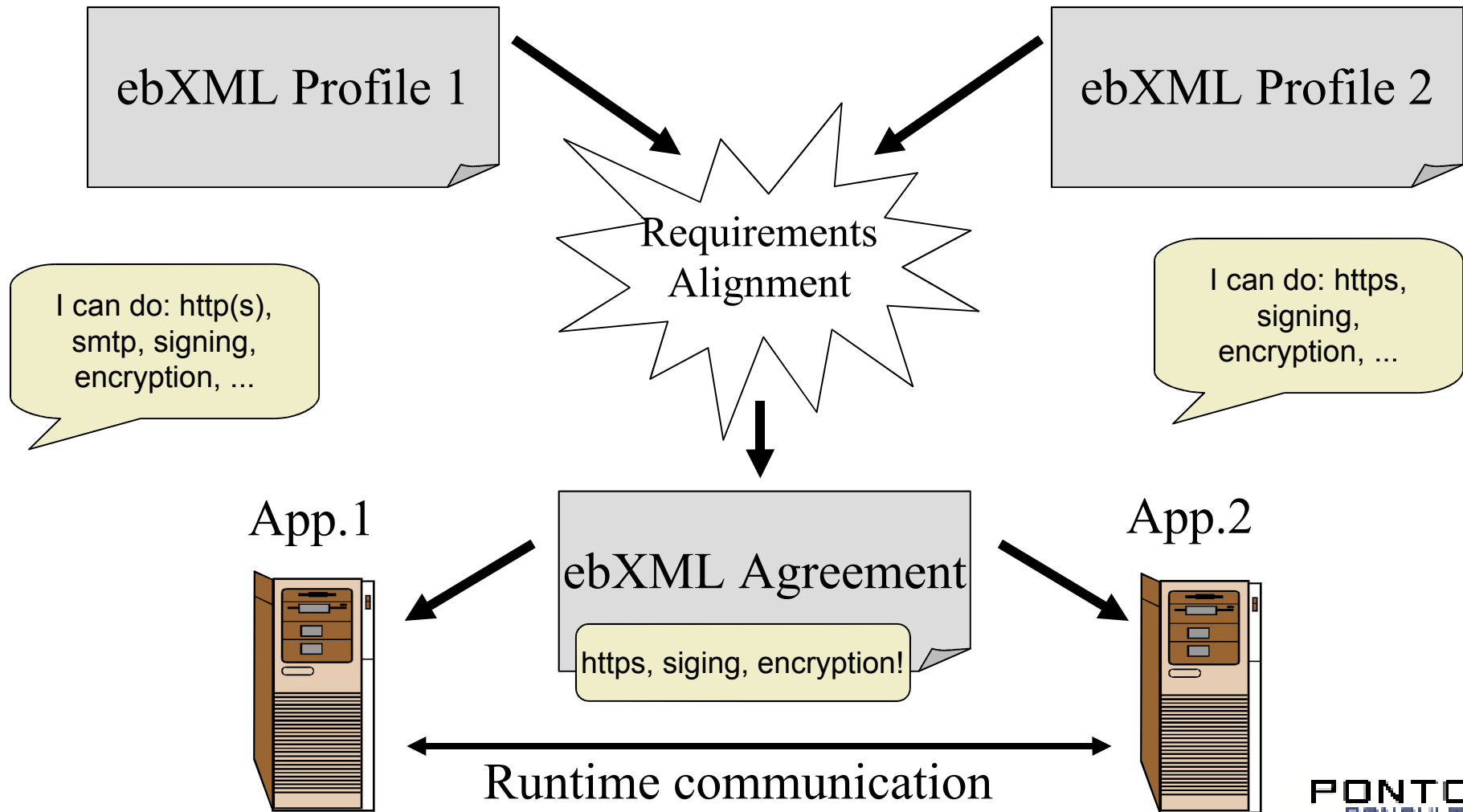
With over 100 customers, Ponton Consulting has the highest penetration in the European ebXML market.

ebXML – What is it composed of?

□ Main Components

- ebMS – Message Service
 - Many implementations today, most are interoperable
 - Interop testing is a real business
- CPPA – Collaboration Partner Profile / Agreement
 - Few implementations, nearly no use so far
- RS – Repository Service
 - Pilot implementations (e.g. by Sun Microsystems)
 - Competes with UDDI, harmonisation is going on
- BPSS – Business Process Specification Schema
 - Nearly no use so far
 - Competes with Web Service Standards

Alignment of capabilities and requirements



Ponton X – Product Information

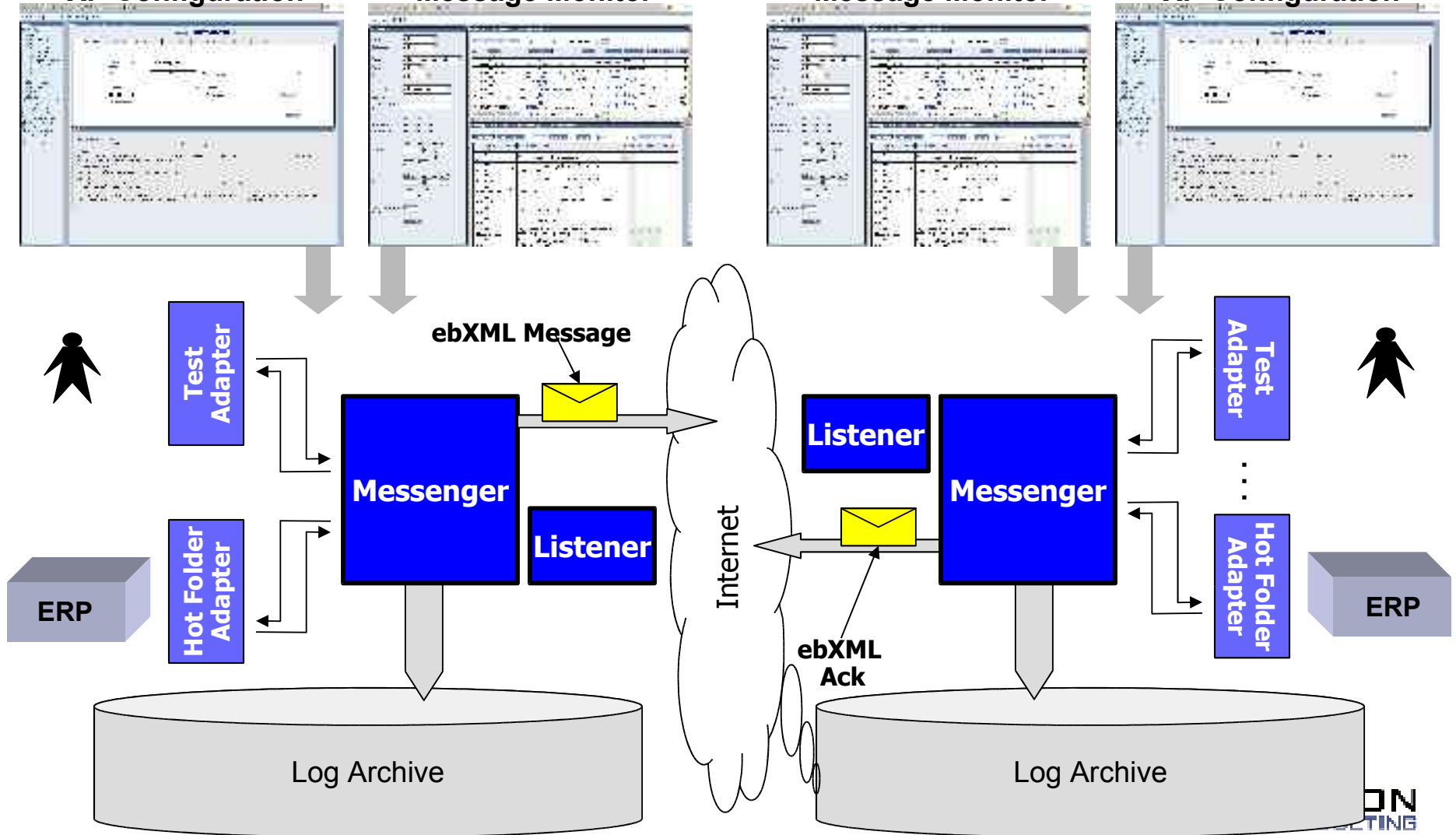
Ponton X/P – the ebXML message service

XP Configuration

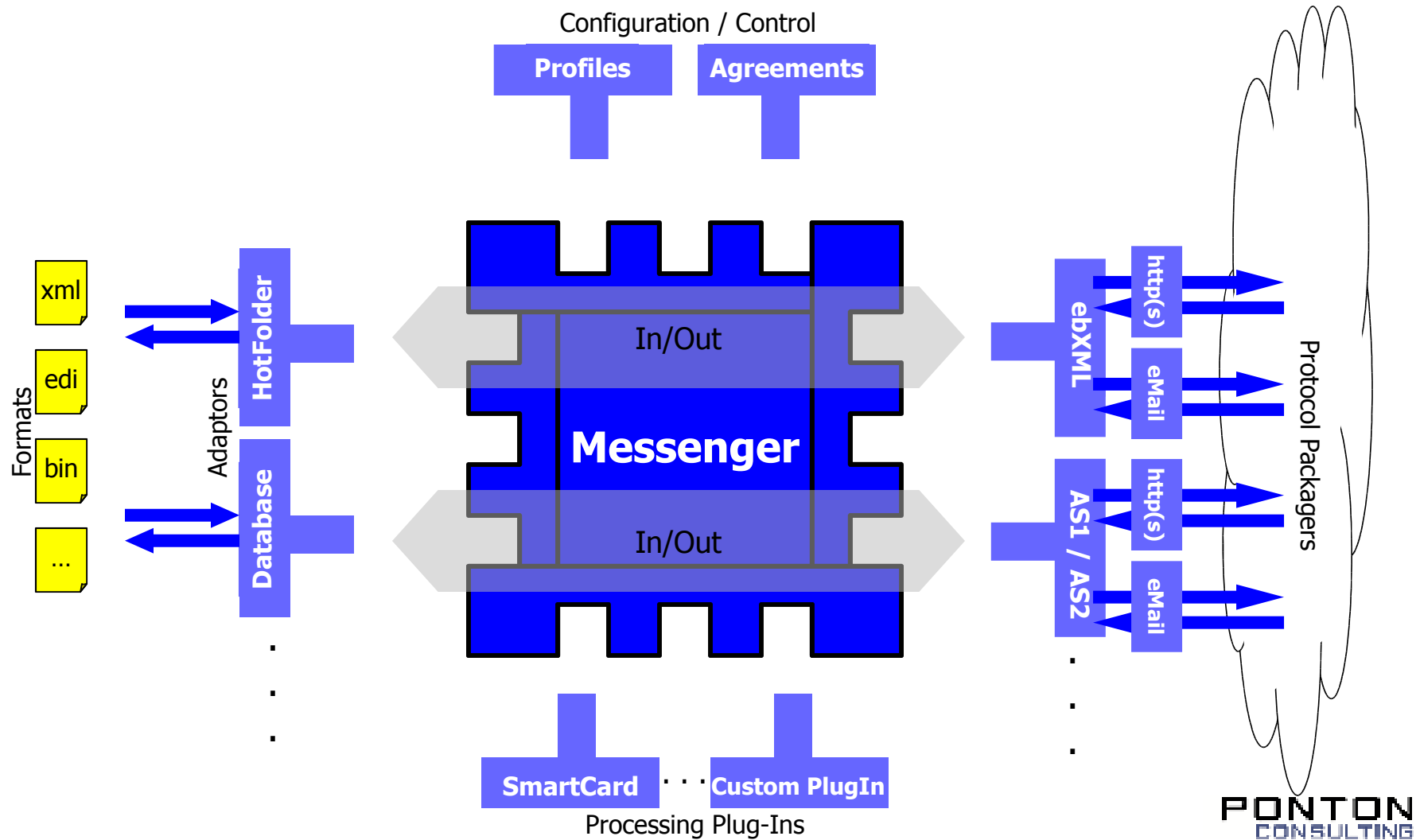
Message Monitor

Message Monitor

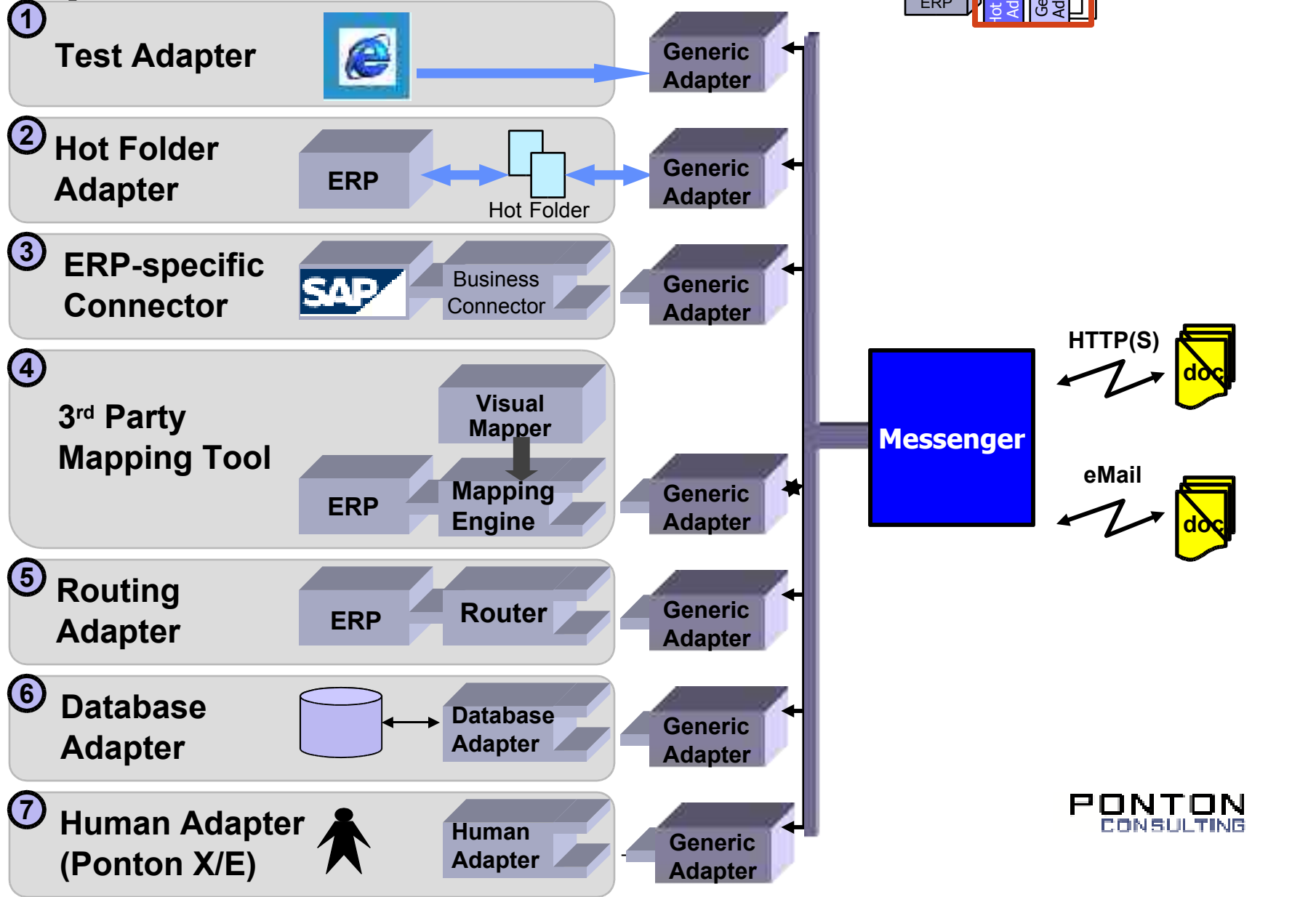
XP Configuration



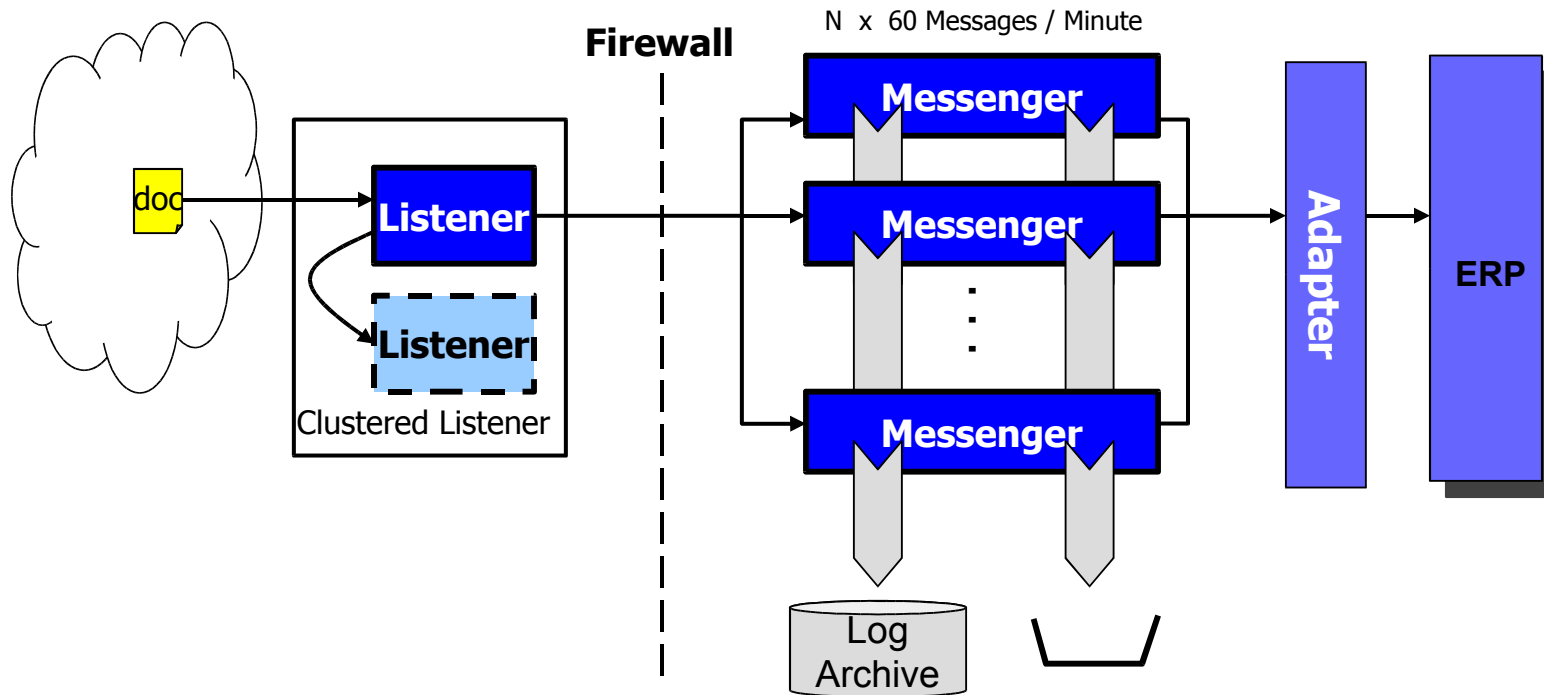
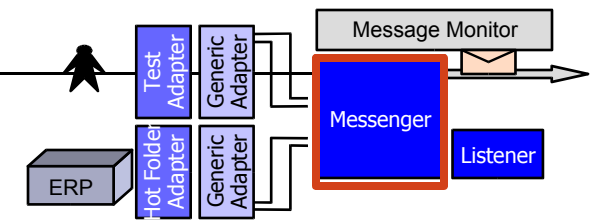
Ponton X/P Configuration



Adaptors for different ERP Interfaces



High Performance / High Reliability Set-up of the Messenger



Any number of Messengers can be run in parallel on separate servers. Throughput is close to linear speed-up. Under lab conditions, four Messengers reach a **throughput of 1.200 messages per minute**. Under production conditions, more than 500 messages can be processed.