

Web services

Global overview

Presentation for The Conference Board of Canada

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Objectives of the presentation

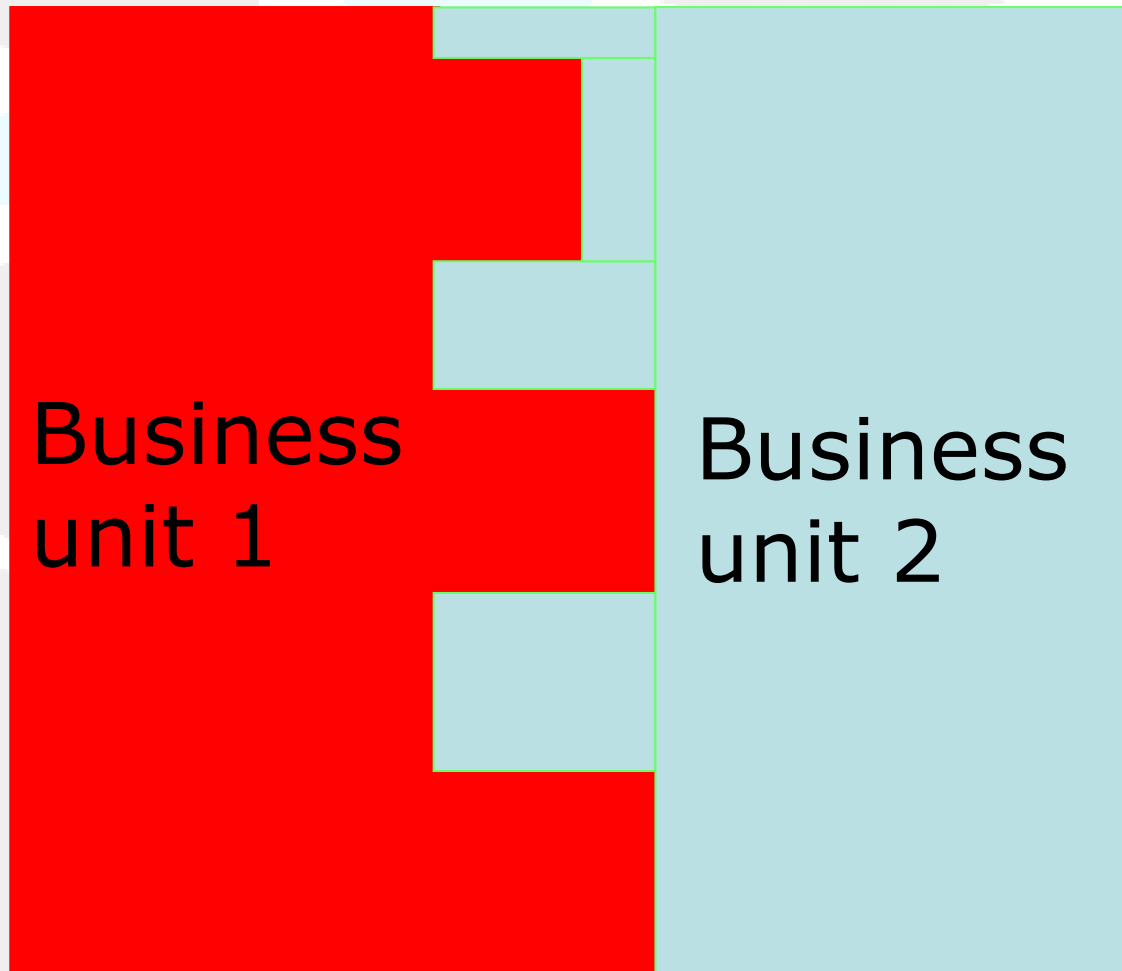
- Define the concept of “Web Services”.
- Identify some of the major challenges still ahead.
- Explain how “Web Services” could affect businesses.

Definitions

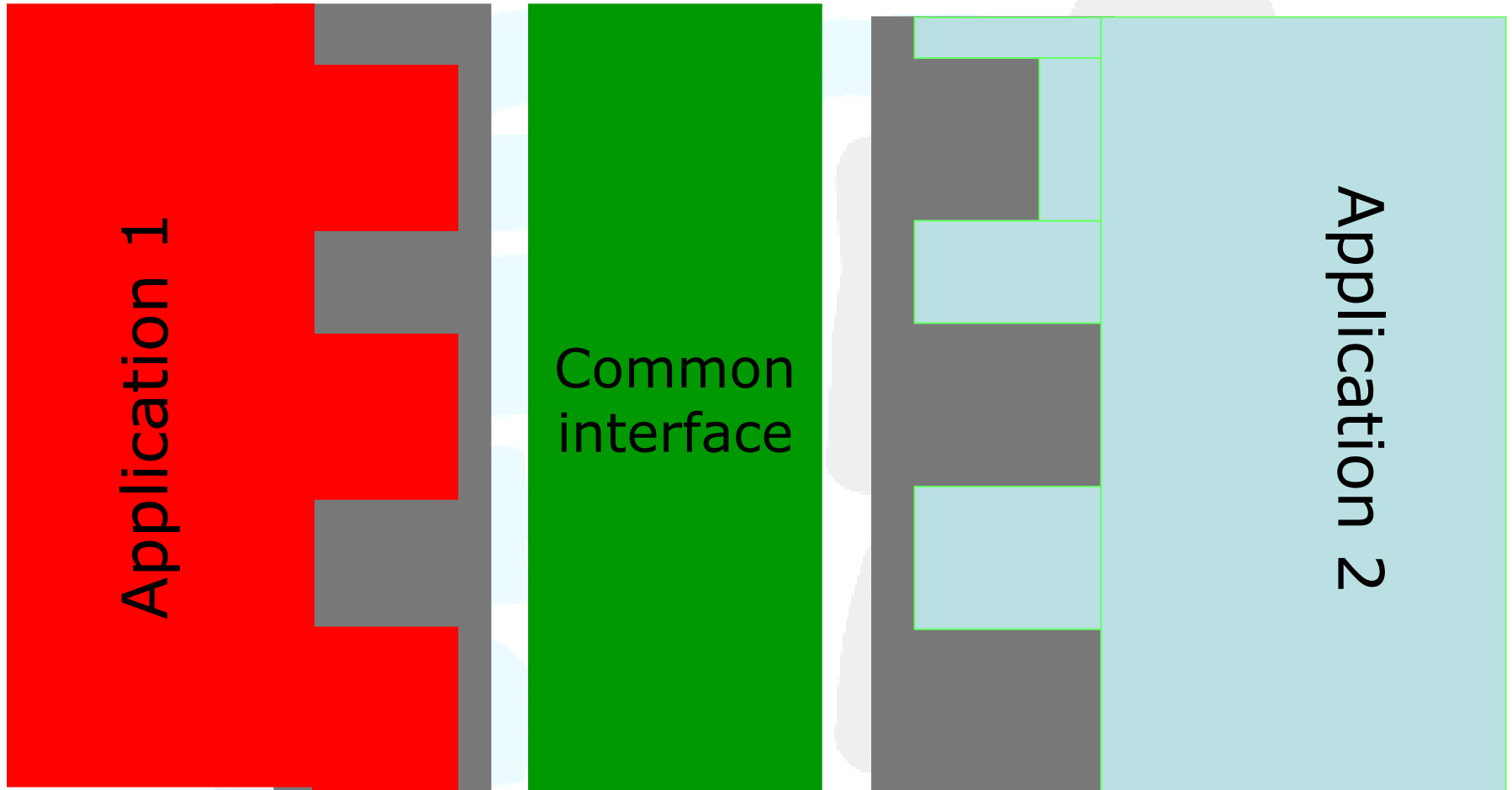
- Web services are business applications delivered over the Internet.
- Web services are a set of protocols, standards and languages for creating open distributed systems on the Internet using platform-independent technology.

Business Integration

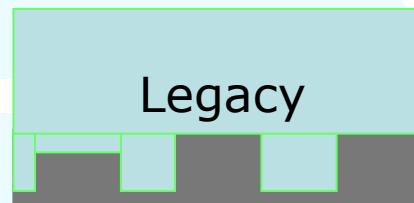
Old fashion



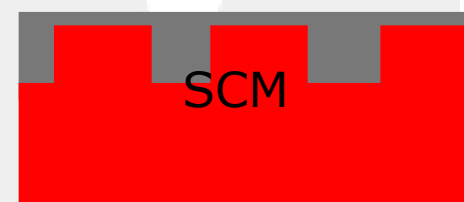
Creating a standard Interface between applications



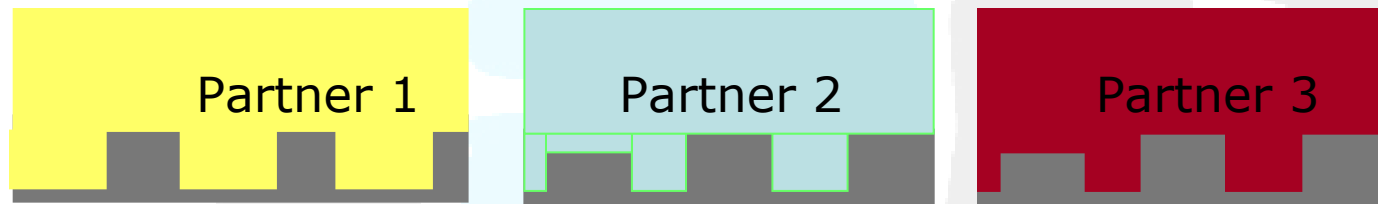
Integration through Web-Services



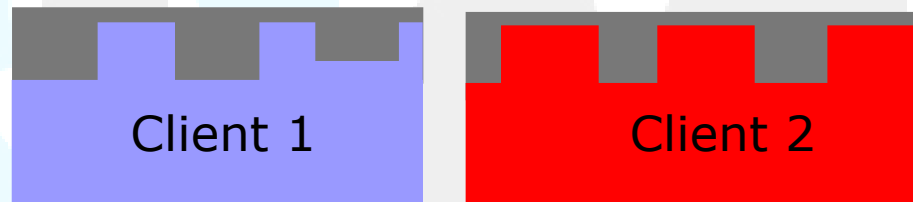
Web Services standards and protocols



Integration through Web-Services



Web Services standards and protocols



Technical challenges

- The objective is to allow disparate systems to “talk” to each other - share data and information - without human intervention.
- How can this be done ?
- We need a common set of protocols standards and languages so that “machines” can understand each other.

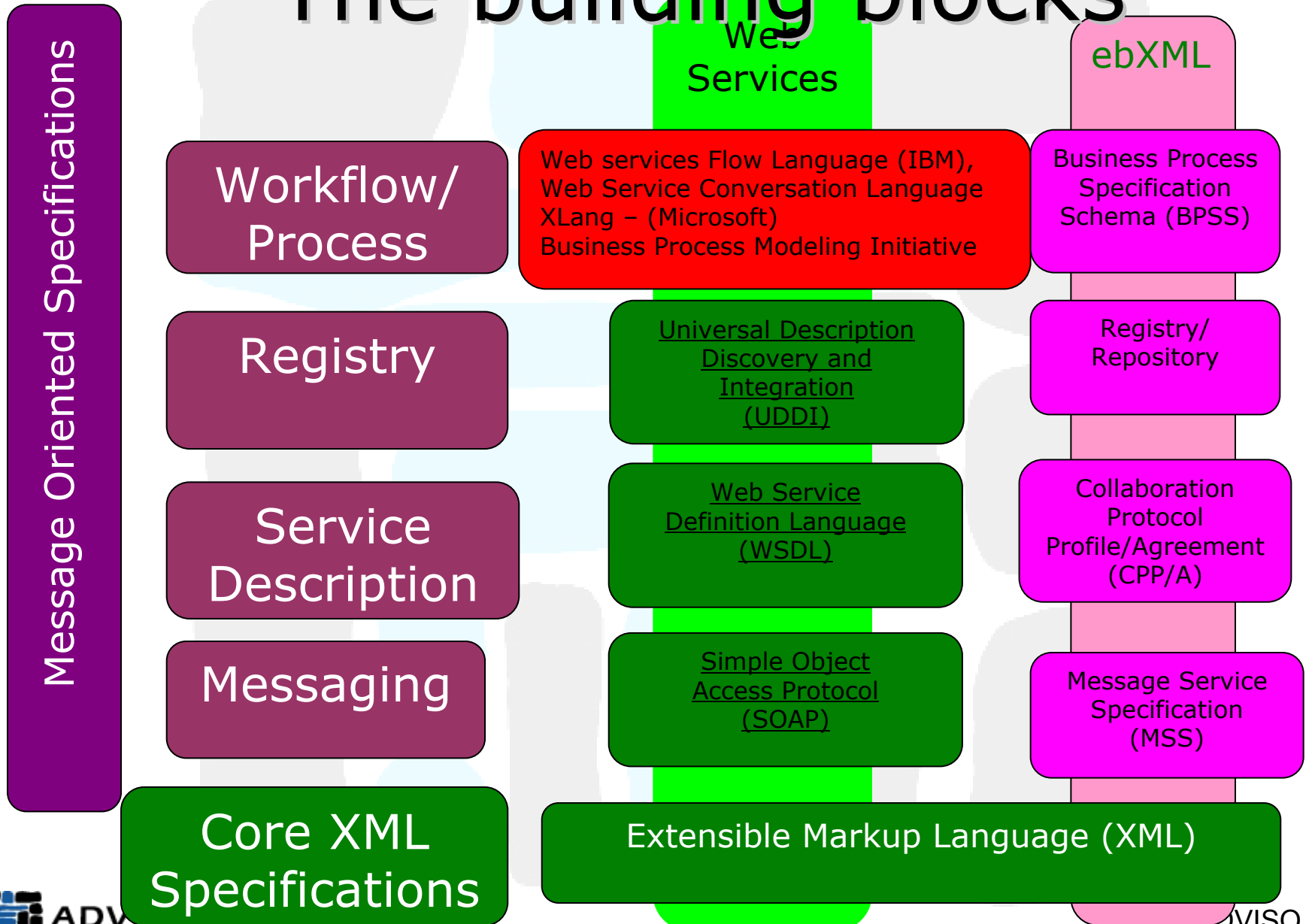
Desired characteristics

- Loosely coupled software components
- Openness
 - $(n^2 \text{ vs } n)$
 - Platform/language/environment independent
- Flexibility
 - Simplicity
 - Scalability
 - Leveraging of legacy systems
 - Reusability
- Asynchronous and synchronous

Definition

- Web services are the building blocks for creating open distributed systems on the Internet due to their asynchronous interfaces using platform-independent technology and their reusable components called services.
- A Web service is a *loosely coupled* software component *identified by a URI* , that dynamically interact with other software components. Its interfaces and binding are capable of being *defined, described and discovered via XML artifacts* and the use of *common internet protocols*.

The building blocks



Work in progress

Documents-oriented specifications

Security

- Security Assertion Markup Language (SAML)
- Web Services-Security (WS-Security)

voice

Graphics

Device Interfaces

Community Vocabularies

Ex.:

- Open Travel Alliance (OTA),
- Parliamentary Language (ParML),
- OpenFinancial Exchange (OFX)

Message Oriented Specifications

E-Business Vocabulary

User Interface

Workflow/ Process

Registry

+450 XML STANDARDS

Global Challenges

- Fragmentation of standards and protocols
 - National and International coordination
- Challenges in establishing shared meaning
 - Industry-specific vocabularies
 - Industry-specific business processes
- Legal issues

Implications for business

- Web services offer an advantageous technology
 - to exploit new revenue generating services via the Web,
 - to save IT and operating costs,
 - and to integrate data and processed within the firm and across the supply and demand chain.
- In managing IT, web services
 - Lower the complexity of IT infrastructure.
 - Take advantage of existing hardware, software and programming abilities within the organization.
 - Allow reusability of software module once created.
 - Decrease the lock-in towards software vendors.
 - Lower development and adaptation costs.
 - Take advantage of the nature of the World Wide Web.

Adoption

Early adopters

Web services progression

2002-2004	Within the firewall <ul style="list-style-type: none">• Simplified application integration• Increased developer productivity
2004-2006	Contained external users <ul style="list-style-type: none">• Simplified business partner connectivity• Richer application functionality• Subscription-based services
2006-2008	Fully dynamic search and use <ul style="list-style-type: none">• Casual/ad-hoc use of services• New business models possible• Commoditization of software• Pervasive use in nontraditional devices

SOURCE: IDC

Colorado Dept. Of Agriculture, Continental Airlines, Dollar Rent a Car, Dupont, JP Morgan Chase, State of New Mexico.

AAA, Citibank, DELL, GM, Home Depot, Merrill Lynch

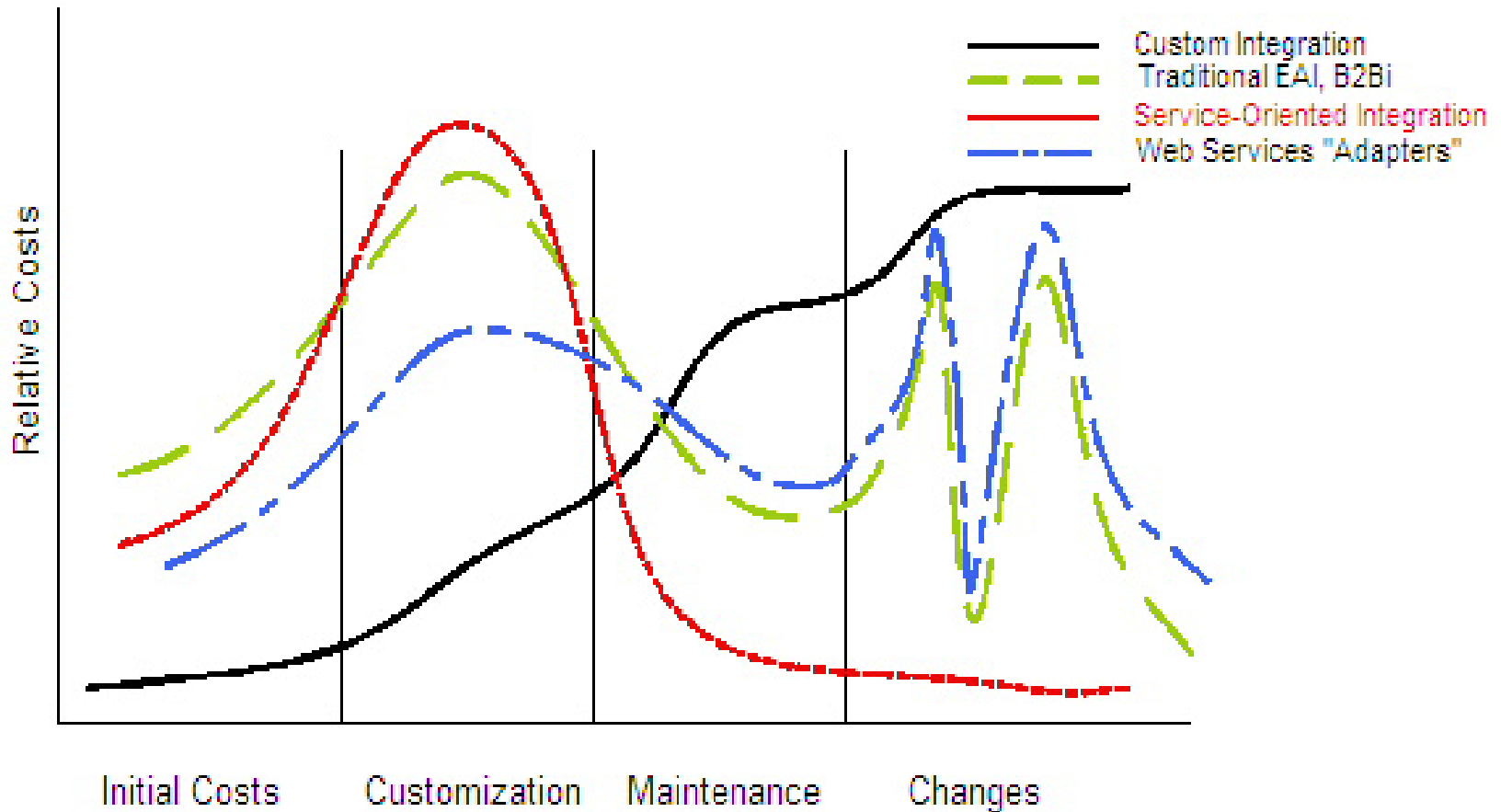
Amazon, eBay, Fedex, Google, UPS

Deployment

- If one uses Web services to replicate what would be done with the traditional EAI or B2Bi solutions, one will not obtain substantial benefits or savings.
- Savings can be obtained only if one focuses on the valued-creating business processes and implement a loosely coupled service-oriented integration.
- Seek simplicity and results.

Deployment

The Relative Costs of Different Integration Approaches



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Questions for Business Leaders

- What new ways could you interact with your trading partners to save costs and create value?
- What new revenue-generating services can your organization offer via Web services?
- How can you use Web services to reduce IT costs and time to delivery?
- Do you have the expertise to set up Web services? If not, how to acquire them?

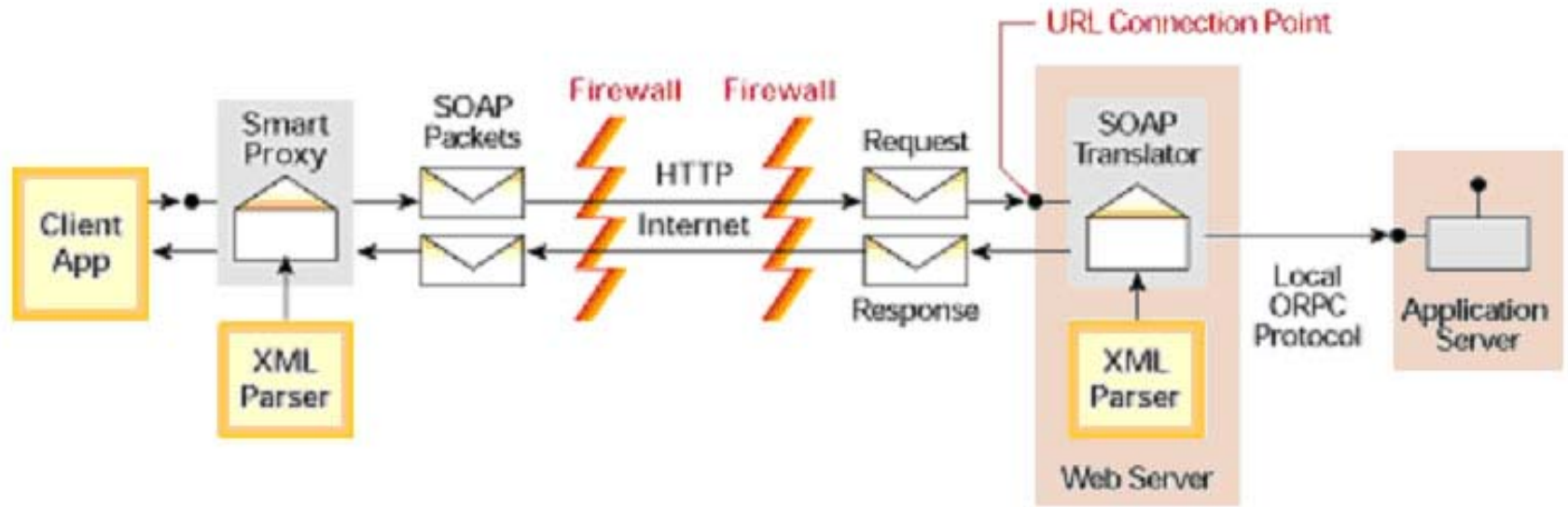
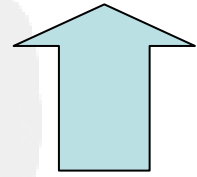
Thank you

- Funding for this research was partially provided by the CIRANO.
- Special thanks to Gilbert Babin, Robert G erin-Lajoie, Jacques Robert and Adviso partners.

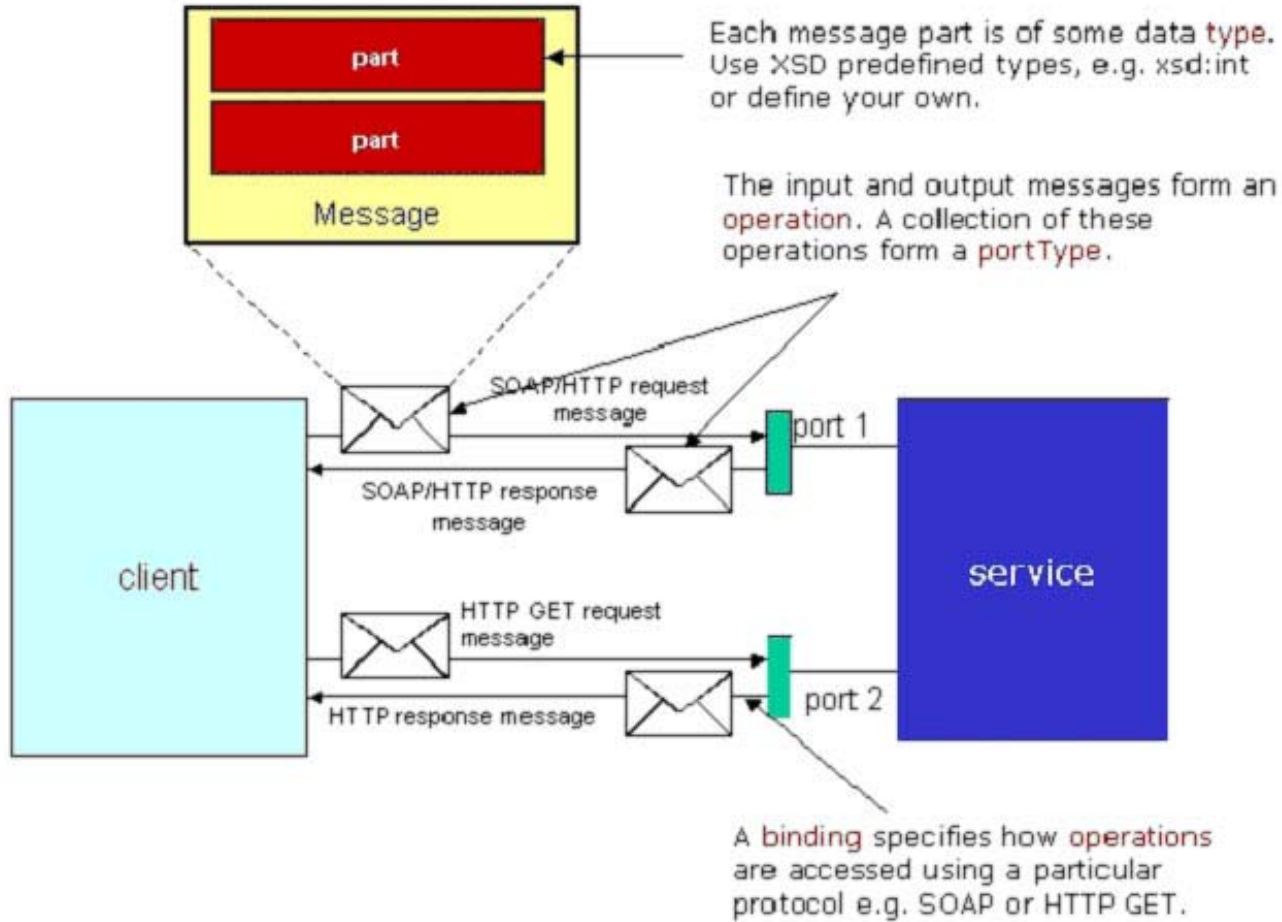
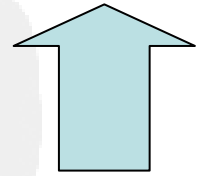
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Annex 1

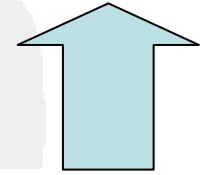
SOAP



WSDL



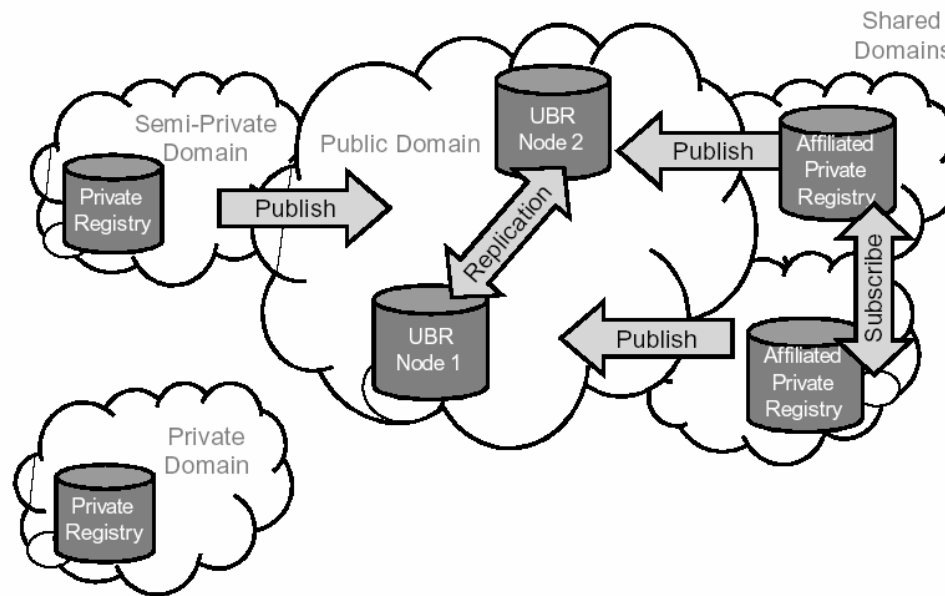
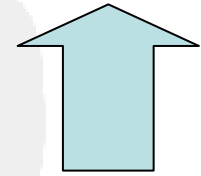
UDDI



Companies register public information about their businesses and web-based services in UDDI's directory.

WHITE PAGES	YELLOW PAGES	GREEN PAGES
<ul style="list-style-type: none">■ Business name■ Contact information■ Human-readable description■ Identifiers (DUNS, tax ID, etc.)	<ul style="list-style-type: none">■ Services and products index■ Industry codes■ Geographic index	<ul style="list-style-type: none">■ E-business rules■ Service descriptions■ Application invocation■ Data binding

Registry solution



Comment: This diagram illustrates several models of registry interaction enabled by Version 3 of the UDDI specification. Through mechanisms like publish/subscribe and replication among peer nodes of a registry, the information in UDDI servers can be fully public (like the UBR), semi-private (such as the affiliated registries shown here), or even fully private and isolated from the public network (as depicted in the "Private Domain" above).