The Next Step to Dynamic e-business

IBM Web Services Strategy

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10/25/01

IBM

Dynamic e-business:

The dynamic adaptation of e-business processes and associated systems to support changing business strategies and tactics.

Dynamic
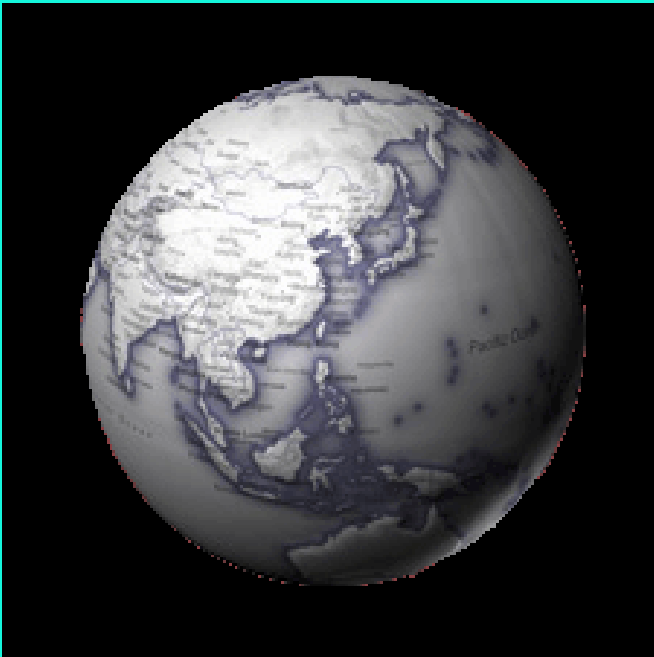e-business

Value Networks

Internal Integration

e-business Transactions

Web Publishing

Source : The McKenna Group, IBM Market Research

Concepts of Dynamic e-business

- **The natural evolution of IBM e-business strategy**

- **Orchestrated evolution of Software, Servers, Storage, Services and Web Technologies**

- **Technologies to provide improved integration through digital services**

- **Epitomizes business agility**

Web Services : the Foundation of Dynamic e-business

- *The Web revolutionized business-to-customer and content delivery*

- *The key was a universal server-to-client model based on standards and industry support*
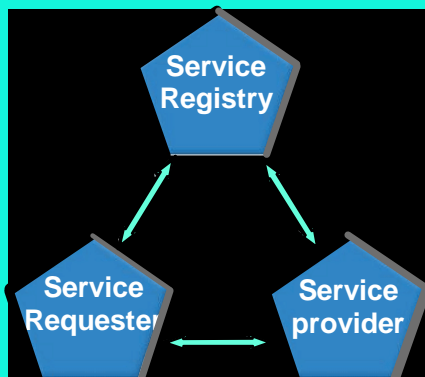
- *Web Services promises to do the same thing for programmatic interactions*

- *The key will be a universal program-to-program communication model based on standards and industry support*

Service Registry

Service Requester

Service provider

Industry Views

- "Businesses that ignore its potential, or decide to sit out its early stages will find themselves outpaced by rivals that take advantage of Web services to improve their agility and even to transform themselves into new kinds of enterprises."

  -David Smith, vice president and research director for Gartner.

- "Web services are extremely inexpensive and relatively easy to try because they are extensions of application servers and existing e-business platforms."

  -- Web Services, Enabling the Collaborative Enterprise by Donoato, Durchslag, Hagel of Grand Central Networks.

Why will Web Services succeed?

Previous experience and learning has been applied!

- **Based on real** ***Standards with ubiquity***
  - ► TCP/IP, HTTP, XML, ...
  - ► Utilizes existing infrastructure

- ***Early* Industry *Deployments***
  - ► Major Vendors
  - ► customers in production

- **We made the** ***right choices*** **this time**
  - ► Loose coupling, simple, business driven

- ***Open***
  - ► *Self-describing*
  - ► *Independently deployable*

What are Web Services?

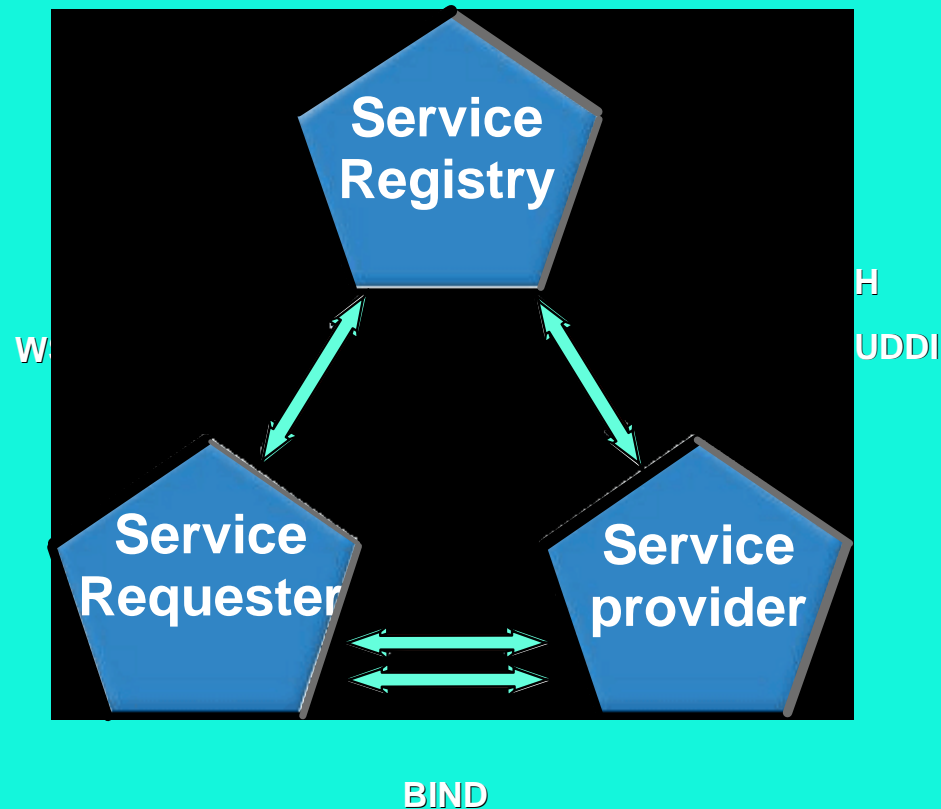*"A WSDL described interface that defines a collection of network accessible operations."*

- *Modular*
  - *Described*
    - *Published*
      - *Found*
        - *Bound*
          - *Invoked*
            - *Composed*

Web Services Model

- ## *Simple:*
  XML, HTTP

- ## *Dynamic:*
  Publish, Find, Bind
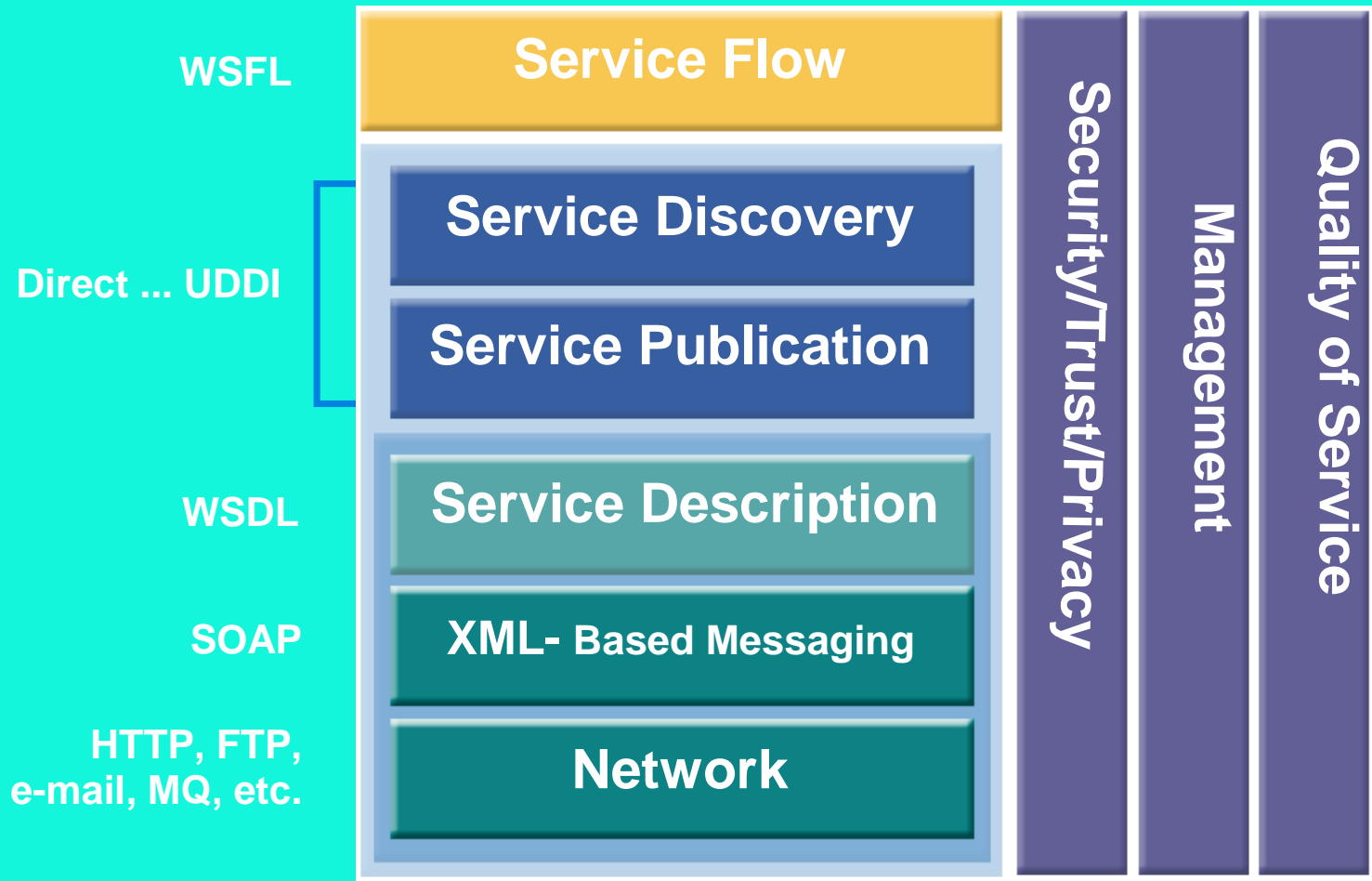
- ## *Standard:*
  XML, XML Schema, SOAP, WSDL, UDDI, ...

Service Registry

Service Requester

Service provider

BIND

Set of industry-standard approaches to enable simplified connection of applications

IBM Web Services Stack

The Conceptual Web Services Stack
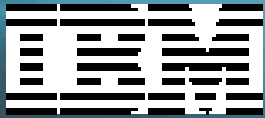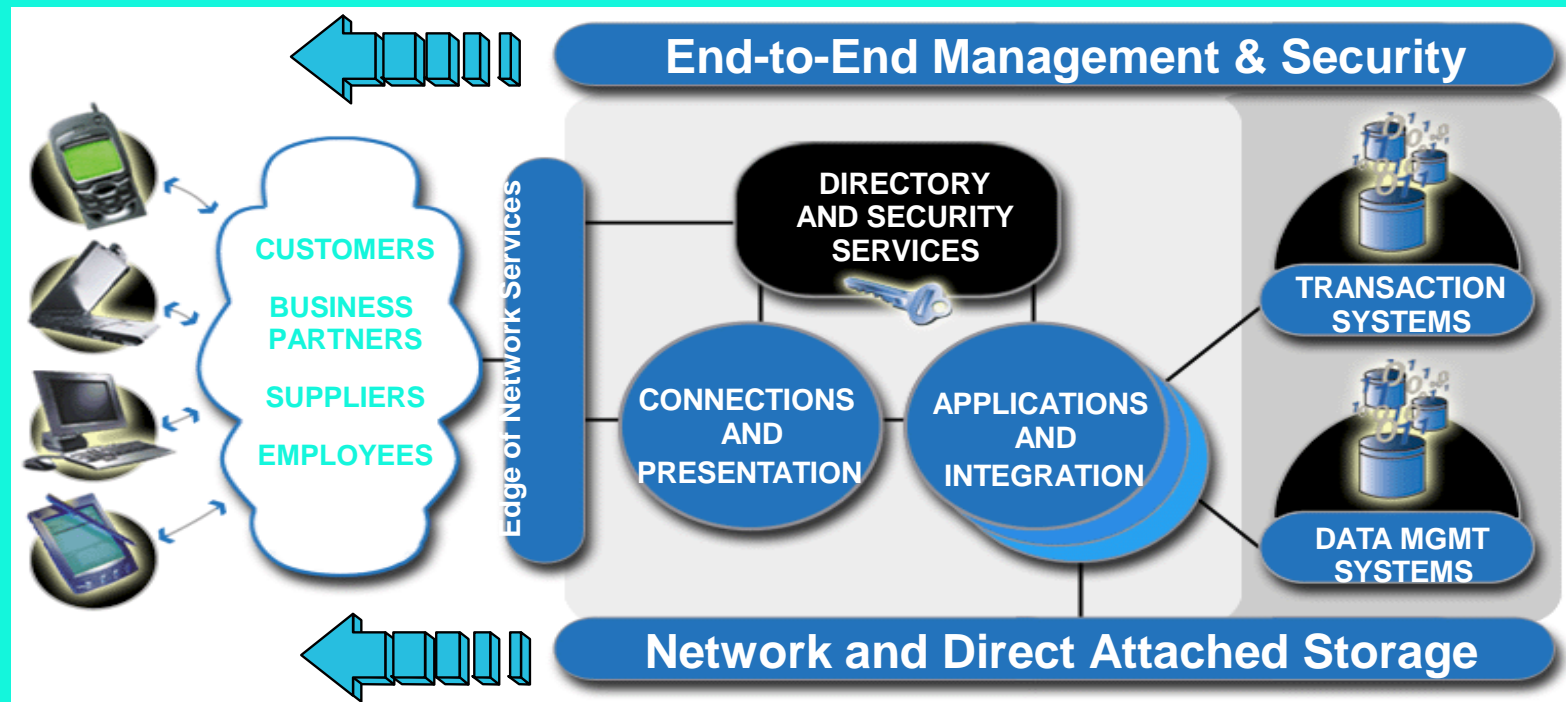
WSFL	Service Flow	
Direct ... UDDI	Service Discovery	
	Service Publication	
WSDL	Service Description	
SOAP	XML- Based Messaging	
HTTP, FTP, e-mail, MQ, etc.	Network	

Security/Trust/Privacy

Management

Quality of Service

Current Industry View of Web Services

CUSTOMERS

BUSINESS PARTNERS

SUPPLIERS

EMPLOYEES

Edge of Network Services

DIRECTORY

CONNECTIONS AND PRESENTATION
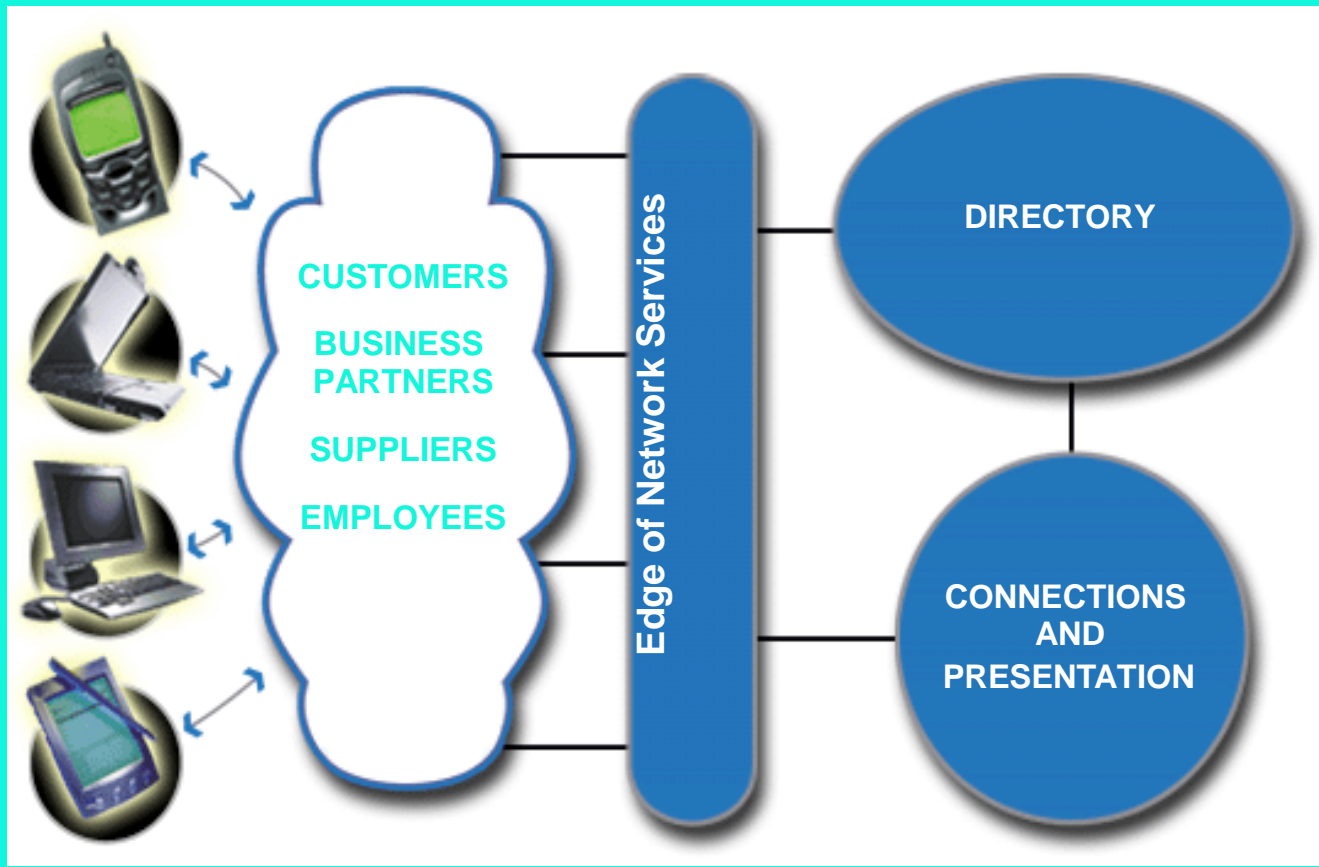
Dynamic e-business Topology

- **IBM is providing software infrastructure beyond minimal requirements:**
  - New standards enable greater flexibility in connecting business processes
  - New levels of flexibility for application integration
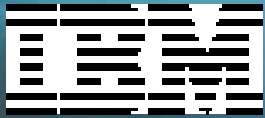 - Simplified connections drive business transactions

When Can Web Services Be Used?

■ *Connection makes sense over a network*
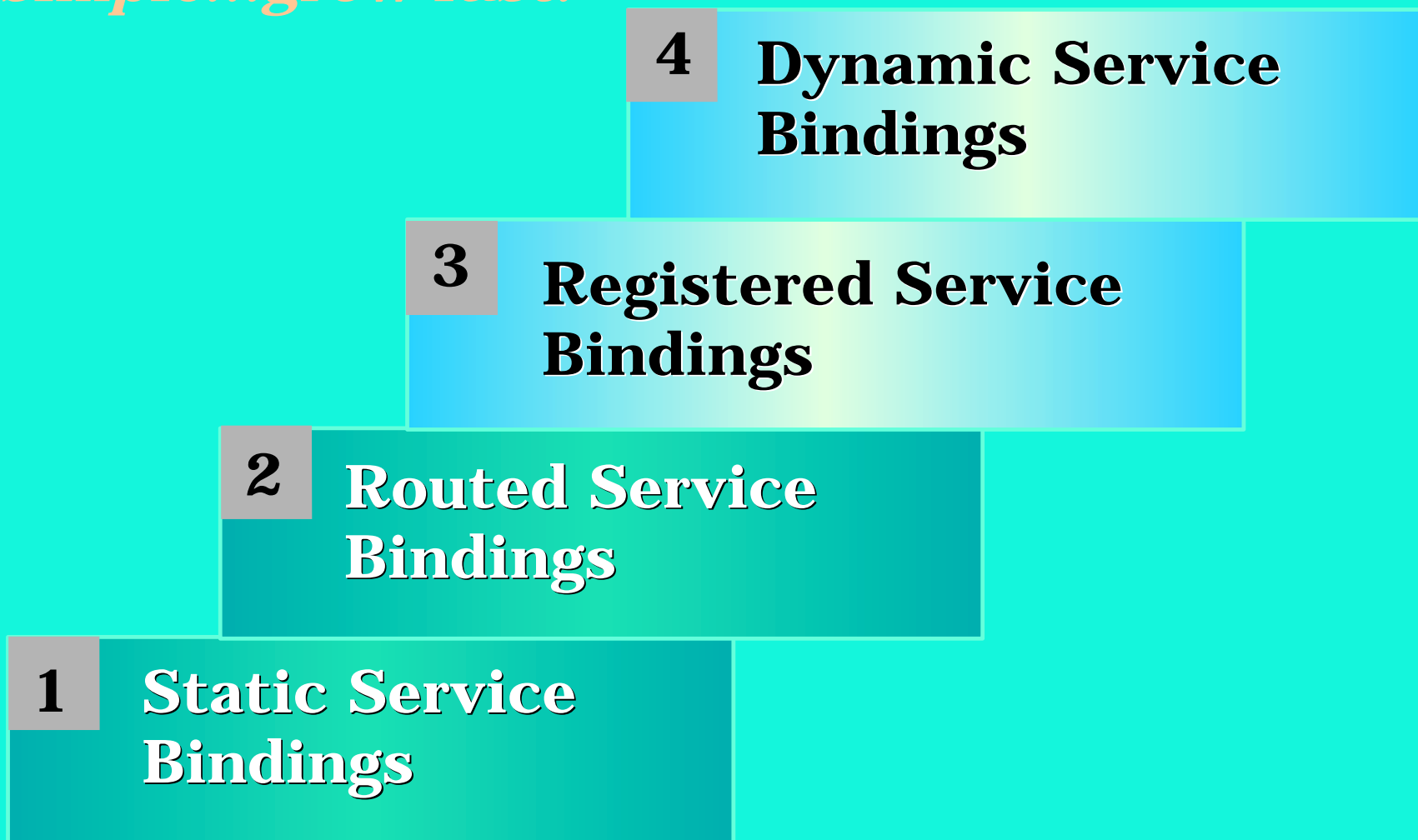
- ► over a LAN
- ► over the Internet
- ► over any network

■ *Loose coupling is desirable*

- ► heterogeneity across technologies used
- ► extended teams
- ► application does not require 2-Phase commit and other synchronous, tightly coupled processing

Implementing Web Services

Start simple...grow fast!

4 **Dynamic Service Bindings**

3 **Registered Service Bindings**

2 **Routed Service Bindings**

1 **Static Service Bindings**

How Can Web Services Be Used?

- *Between a business and end-users*
  - ► Deliver a better user experience
  - ► Integrate diverse content
 - ► Reduce the cost of content delivery

- *Within a business*
  - ► Accelerate and reduce the cost of integration
  - ► Save on infrastructure deployment and management costs
  - ► Reduce skill requirements
  - ► Improve reuse

- *Between businesses*
  - ► Providing service to your customers
  - ► Accessing services from your partners and suppliers
  - ► Standards and common infrastructure reduce the barriers
  - ► Simplicity accelerates deployment
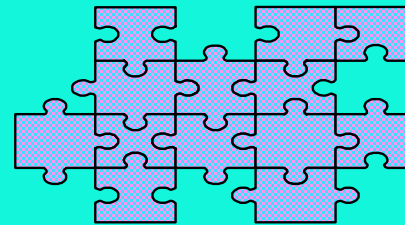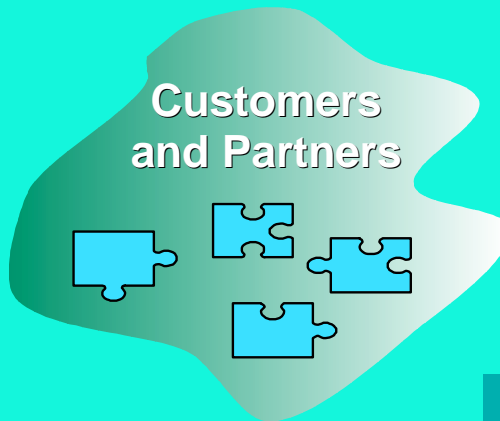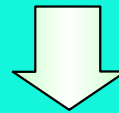 - ► Dynamism opens new business opportunities

Improving end-user experience

Tightly Coupled

Search Servlet

Search Service

Loosely Coupled

Search Proxy
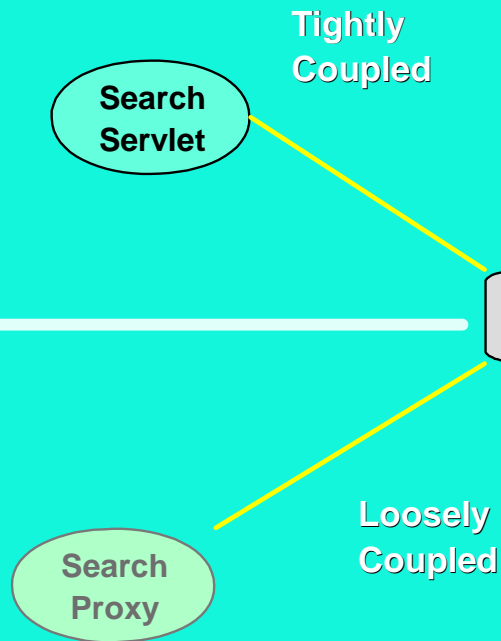
- **Web services reduces the provisioning problem**

Unbundling I/T

Customers and Partners

Outsource

Web Services Value

- Neutral: Language, OS, hardware, app design
- Leverages existing network infrastructure
- Standards based
- Loose coupling
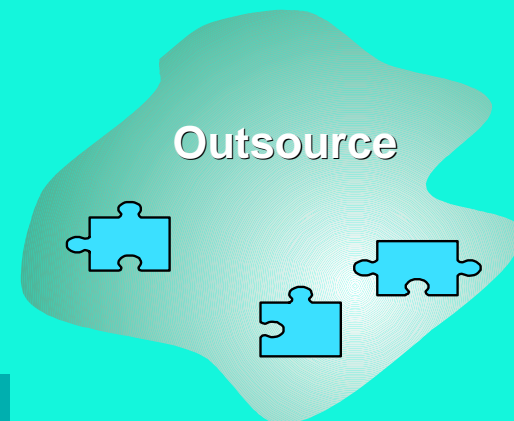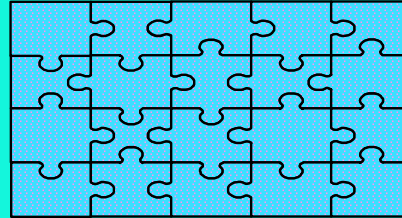
Benefits

- Get more value from assets
- Strengthen relationship with partners

Benefits

- Reduce noncompetitive investment
- Stay up-to-date

Business Process Extension

- **Simplified B2B Infrastructure - loose coupling, common protocol and messages**

- **Simplified Deployments - SOAP, platform and language neutral, late binding**

- **Trusted - Private UDDI**

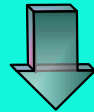- **Automated**
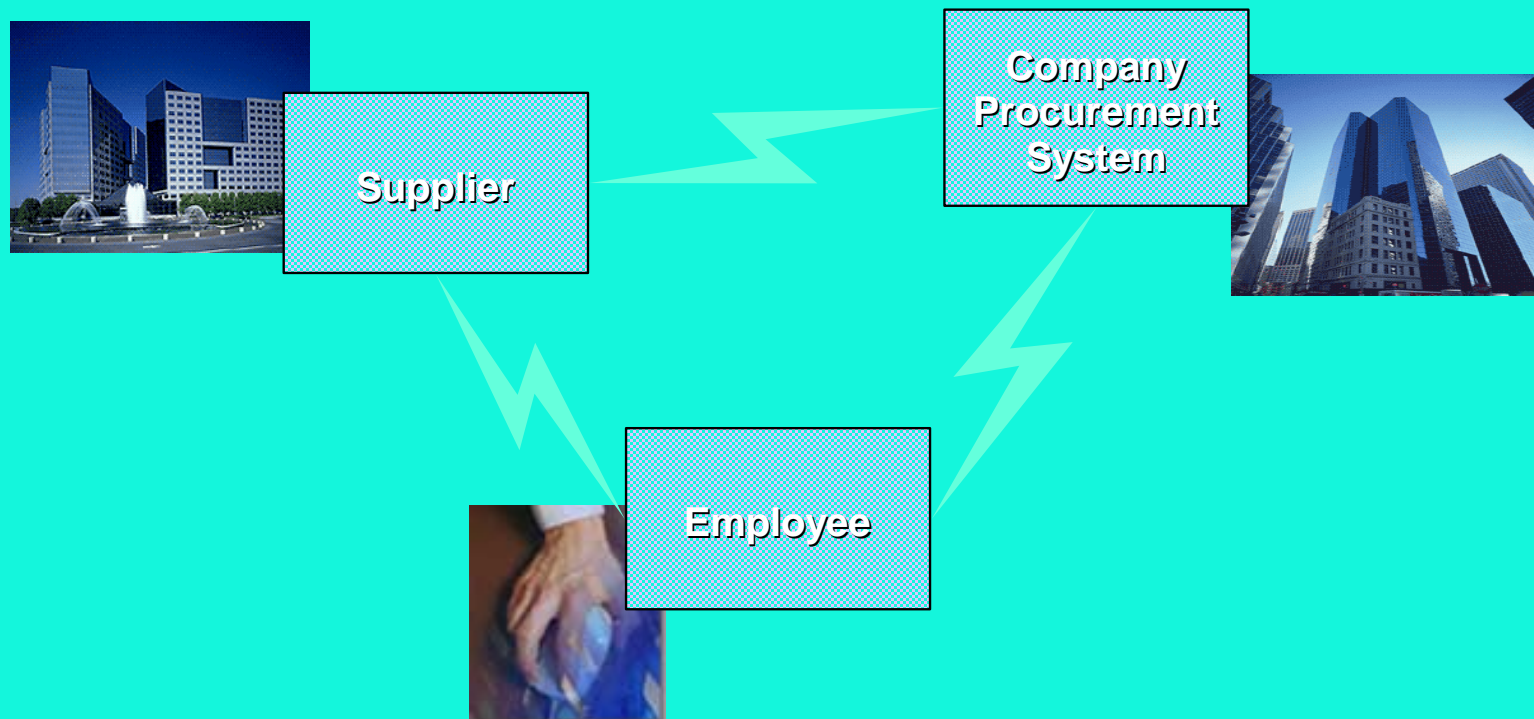
Web Services Network Providers

Simplifying net-based collaboration, delivering an easily accessible, affordable service with a fast deployment time
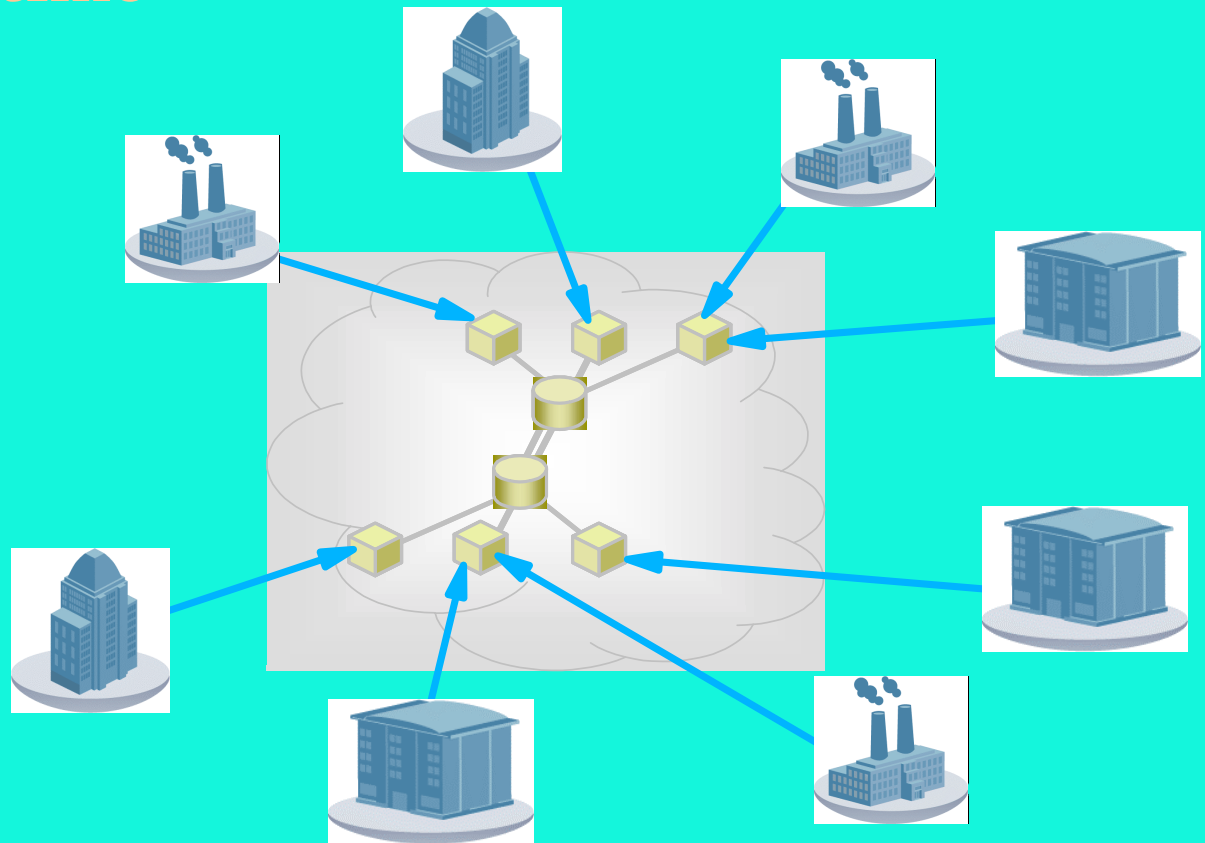
Web Service enabled Operations

Service Providers

Service Requesters

Service Management

Management Services
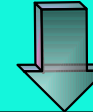Access Control, Service Publishing,
Service Availability, Billing Services

Monitoring Services
Reporting, Audit Trail,
Exception Management

Security Services
Authentication,
Security Policy Management

Business Process Orchestration

Discovery Services
UDDI/WSDL Service Directory

Orchestration Services
Point- to- Point, WSFL,Conditional Routing,
Service Chaining

Transformation Services
XML - XML, XSLT, Flat -File, EDI
Web scraping, Web presentation,
FAX, WAP, SMS, SMTP

Connectivity Services

Messaging Services
XML, SOAP standards based

IBM's Web Services Strategy

- *Continue to lead development of industry standards*

- *Enable software platform and tools*

- *Allow customers to leverage existing investments*

- *Help customers and business partners leverage IBM's Web services infrastructure*

- *Support customer initiatives with world-class consulting services*

Web Services

An IBM-wide initiative

- *IBM's Web services support is a natural next step in the evolution of its e-business strategy*

- *IBM is first to deliver an open, integrated platform to build, test, deploy and publish Web Services*

- *IBM is extending it's entire software product line so that customers, partners and developers can develop, assemble and deploy Web Services*

- *IBM has combined skills from several Global Services practices to address the complete needs for Web Services consulting*
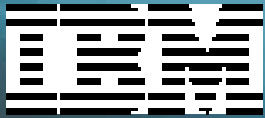
IBM Leadership in Web Services

- **SOAP—Simple Object Access Protocol**
  - ► Co-author of specification
  - ► Chair of XML Protocol working group in W3C
  - ► Lead the industry effort to donate SOAP to W3C
  - ► Donated SOAP4J toolkit to Apache.org

- **WSDL—Web Services Description Language**
  - ► Co-author of specification
  - ► First WSDL toolkit implementation on alphaWorks

- **UDDI—Universal Description, Discovery and Integration**
  - ► Leader in creation of UDDI project
  - ► Host of UDDI Business Registry

IBM Leadership in Web Services

- **WSFL—Web Services Flow Language**
  - ► Published draft standard for industry approval
  - ► Describes how Web Services can be assembled to describe business process or partner interactions

- **HTTPR—Reliable Hypertext Transfer Protocol**
  - ► Reliable one-time delivery of messages designed by IBM MQ Series team
  - ► Planned for submission to standards body

Web Services Software Portfolio:

WebSphere	**Development Tools and Application, Transaction and Workflow Servers**	**Enabled for UDDI, SOAP and other Web services standards** **WebSphere MQ** **Private UDDI Registry in WebSphere Studio Workbench tools**
DB2	**Data Management**	**Deliver query services via SOAP** **Support for stored Web services procedures**
Tivoli	**Systems Management**	**Tools to manage Web application servers. Will add SOAP support**
Lotus	**Messaging and Collaboration**	**Will enable Domino services as Web services** **Lotus Enablement toolkit on Alphaworks**

Industry-standard and multi-platform

Resources - Standards

- **XML**

  www.w3.org/XML/

  ibm.com/XML

- **SOAP**

  www.w3.org/TR/SOAP/pens new business opportunities
  xml.apache.org/soap

- **WSDL**

  www.w3.org/TR/wsdl/

- **UDDI**

  uddi.org

  ► **IBM's registry**

    www.ibm.com/services/uddi/
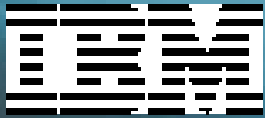
IBM Resources

- *IBM Web Services*
  - ibm.com/webservices/

- *Technical - Technology and Information*
  - ibm.com/developerWorks/webservices

- *Web Services Test Area*
  - demo.alphaworks.ibm.com/browser

- *alphaWorks - Toolkits and Technology Previews*
  - ibm.com/alphaworks

- *JStart - Quick Start Services*
  - ibm.com/software/jstart, jstart@us.ibm.com
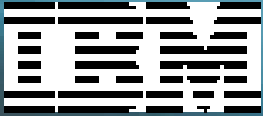
IBM Web Services

One stop resource:

w3.ibm.com/ebusiness/webservices

IBM jStart Program

- **What is *jStart*?**
  - A program offering from IBM's jStart emerging technologies team
  - A proven approach for developing a <u>dynamic e-business</u> application utilizing <u>web services</u>
  - Work in partnership with IBM to design, develop, and deploy a production application
  - Provides industry visibility to deployed application
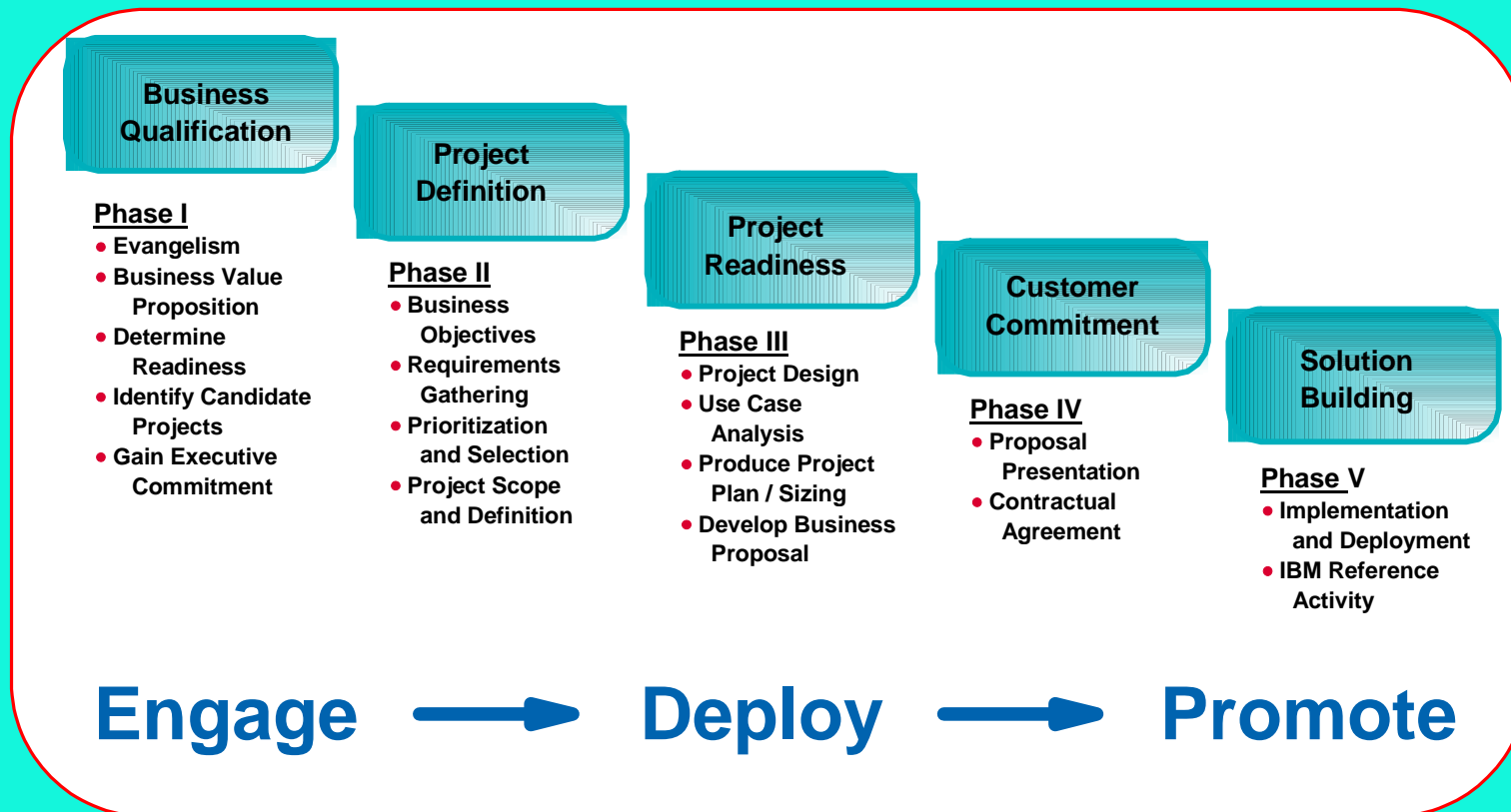
- **What are the benefits of *jStart*?**
  - Accelerates client skill development
  - 5-step engagement methodology lowers risk
  - Utilizes services teams experienced with emerging technologies
  - Inherent benefits associated with early adoption

  jStart@us.ibm.com or ibm.com/software/jstart

jStart Program Model

Business Qualification

Phase I
- Evangelism
- Business Value Proposition
- Determine Readiness
- Identify Candidate Projects
- Gain Executive Commitment

Project Definition

Phase II
- Business Objectives
- Requirements Gathering
- Prioritization and Selection
- Project Scope and Definition

Project Readiness

Phase III
- Project Design
- Use Case Analysis
- Produce Project Plan / Sizing
- Develop Business Proposal

Customer Commitment

Phase IV
- Proposal Presentation
- Contractual Agreement

Solution Building

Phase V
- Implementation and Deployment
- IBM Reference Activity

Engage ⟶ **Deploy** ⟶ **Promote**

jStart@us.ibm.com or ibm.com/software/jstart

IBM Global Services Capabilities

Strategy	• Help you develop an integrated business/technology strategy to exploit web services opportunities
Architecture	• Assess your existing architecture for web services capabilities • Develop your web services technical architecture • Develop your component business architecture to support web services
Application Development and Integration	• Provide full lifecycle support for the development of web services applications
Skills Transfer	• Train and mentor your technology staff in web services design skills and development technology
Outsourcing	• Develop, host, and support your private or public UDDI directory

IBM Toolkits

- *IBM Web Services Toolkit*
  - ► **alphaworks.ibm.com/tech/webservicestoolkit/**

- *Lotus Web Services Enablement Toolkit*
  - ► **ihttp://www.alphaworks.ibm.com/tech/webservices4lotus**

- *IBM UDDI Registry for developers*
  - ► **ihttp://www.alphaworks.ibm.com/tech**
    - – **Look under *Uncategorized***

- *The IBM XML and Web Services Dev Env*
  - ► **http://www.alphaworks.ibm.com/tech/wsde**

Recommendations

- *Build on your investments, don't redo everything.*

- *Insist on industry standards and open architectures.*

- *Leverage Web Services for better integration possibilities.*

- *Start Now.*

- *Find out how IBM can help you succeed.*

The Next Horizon for e-business

Thank You.

David Cavallero
10/25/01

IBM.