IBM Software Group

e-business access to CICS Strategic Options

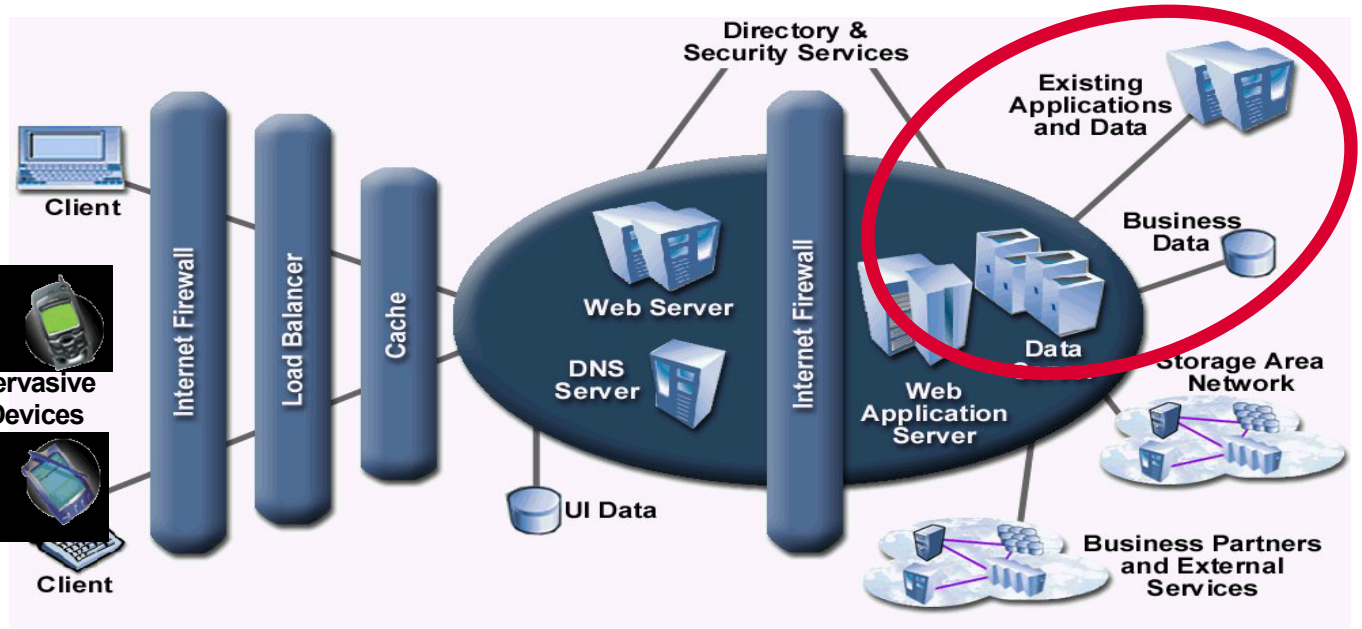
March 2005

e business software

Agenda

- e-business Introduction
- CICS Assets and Implementations
- Summary

The Big Picture - CICS

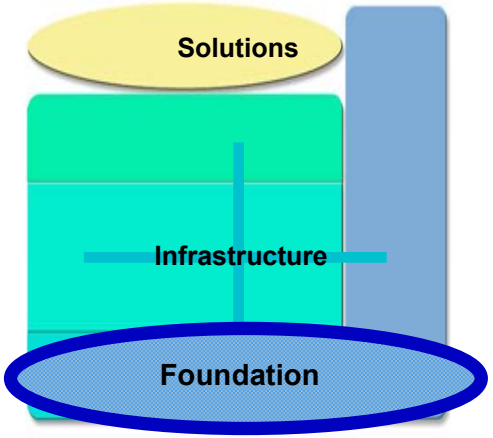


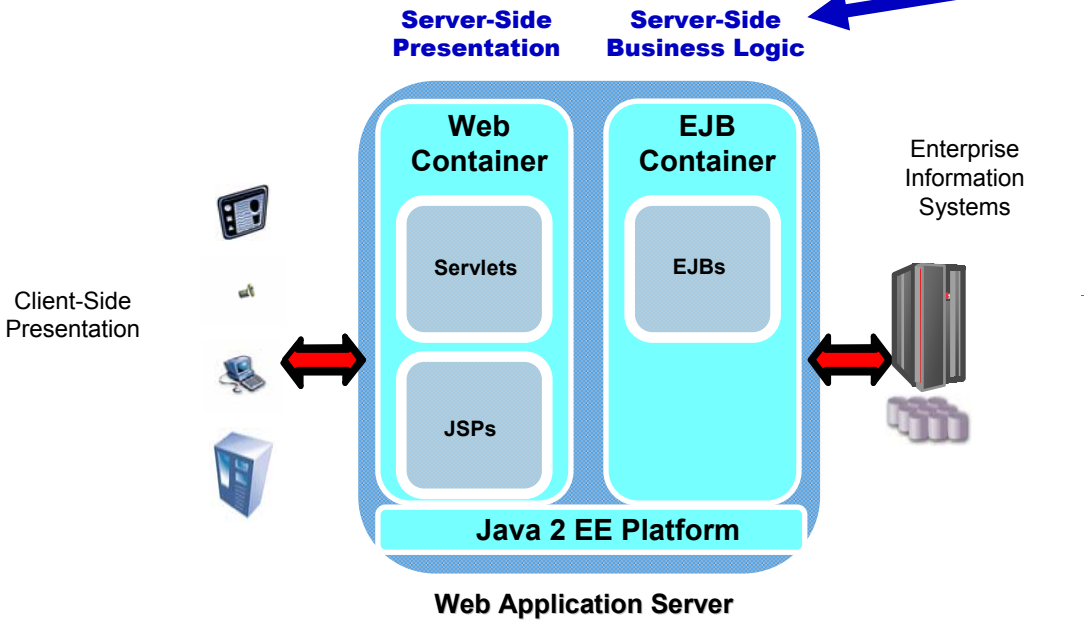
- ✓Over 30 years and $1 Trillion invested in Applications ... IDC
- ✓Over $1 trillion processed/day
- ✓Over 30 billion transactions/day
- ✓Most people use CICS

Combining the reliability and security of CICS software with the flexibility of e-business technology

The WebSphere Software Platform

- Web infrastructure software that helps companies at each stage of e-business development
  - from startup,
  - to integrating and exploiting business processes,
  - to handling high volume Web transactions.





Application developers focus on business logic (components)

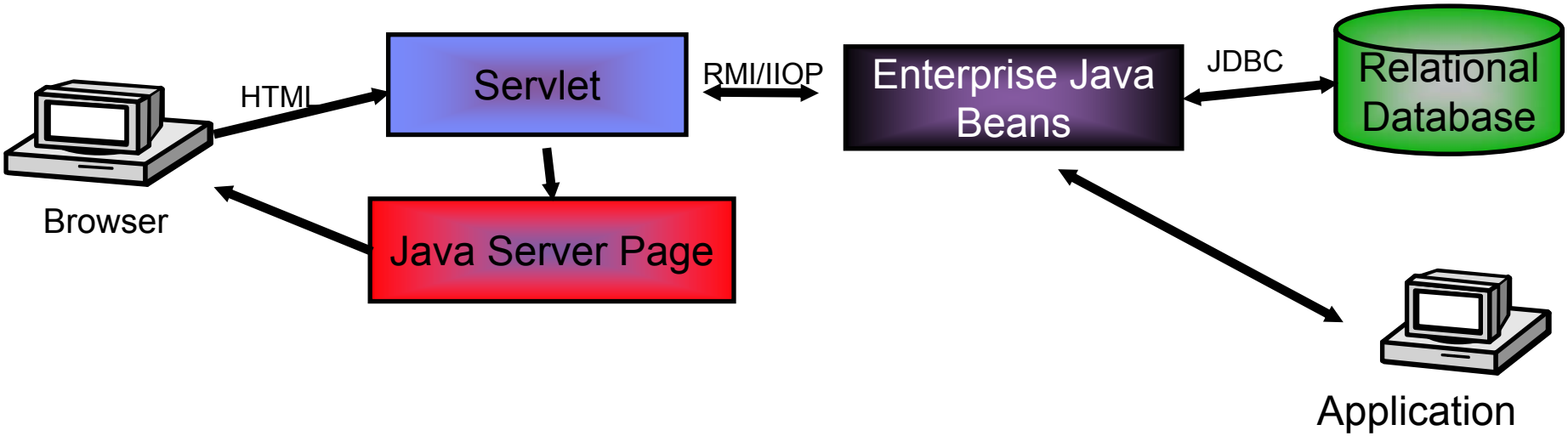
Containers and connectors conceal complexity and promote portability

Components inherit qualities of service of the underlying platform

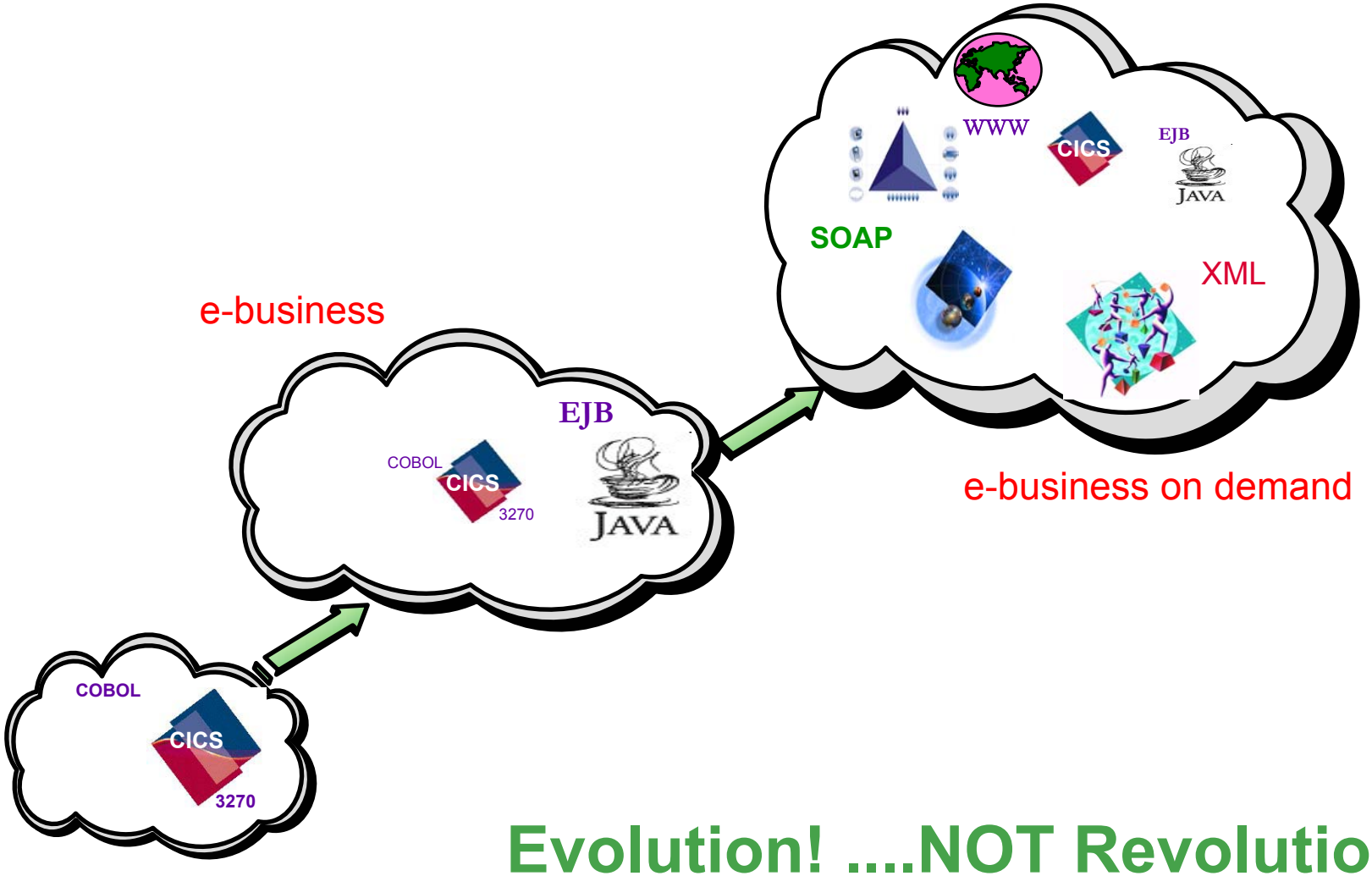
Architecture of a typical J2EE application

- Servlet
  - Request handling logic
- EJB
  - Business logic
  - Reusable components
- Java Server Page
  - Just presentation - mostly HTML

- An e-business application is made up of components that can run in one or more physical computers
- Using java for such an application removes portability issues
- But such applications require system services such as
  - security
  - access to legacy systems
  - distributed syncpointing



CICS e-business Strategy



Evolution! ....NOT Revolution

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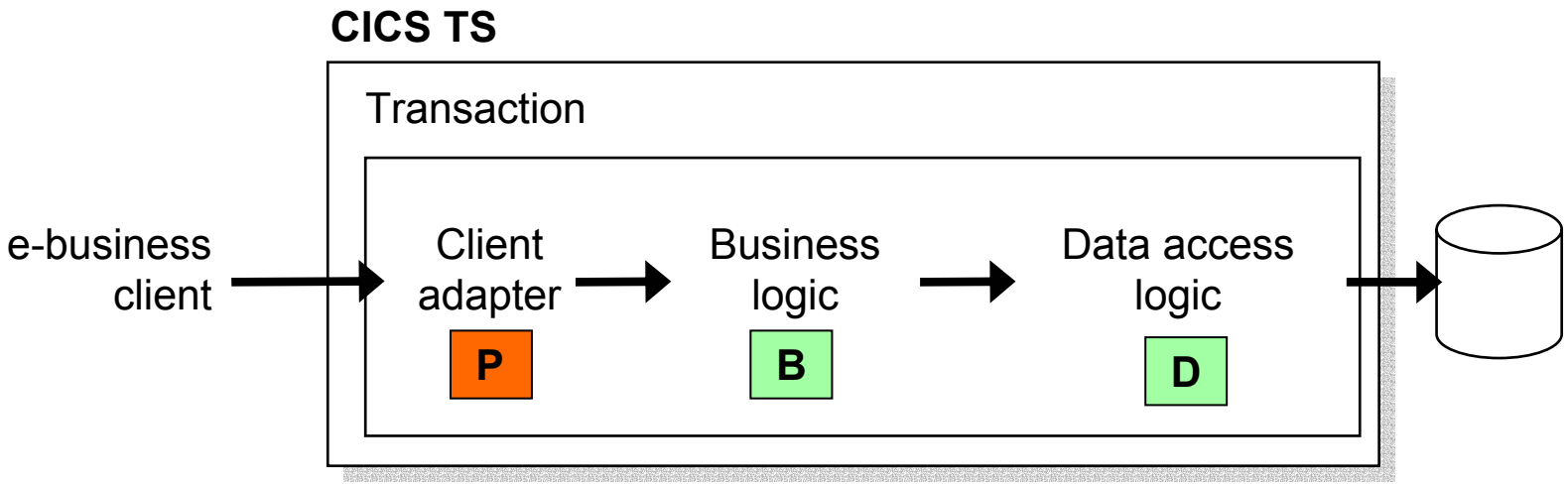
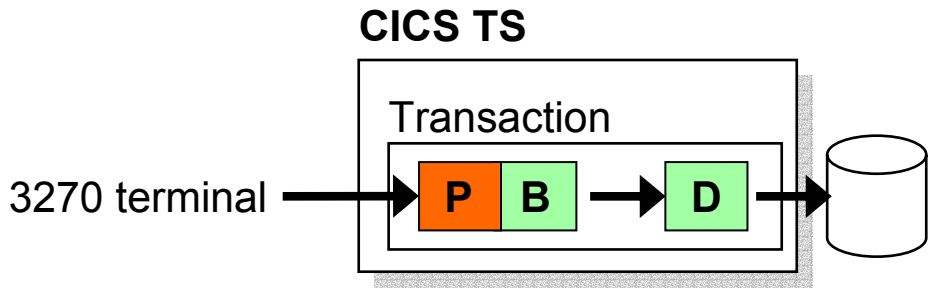
What assets in CICS can be transformed?



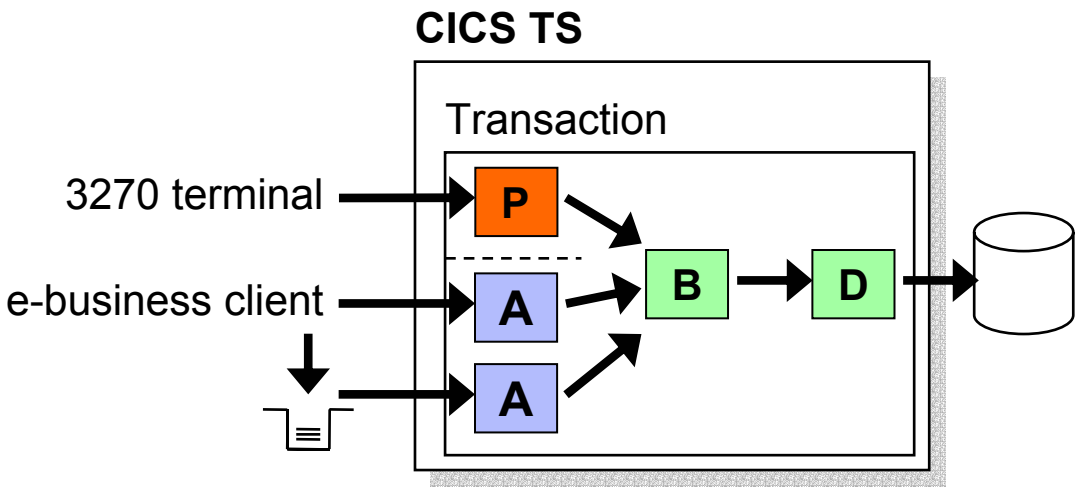
- Best practice in CICS application design is to separate key elements of the application, in particular:
  - Client adapter or presentation logic
  - Business logic
  - Data access logic

Reusing 3270 Presentation logic with the Link3270 Bridge



- However, there remain some customer programs that combine presentation and business logic
- Link3270 Bridge is a technology in CICS TS that provides a COMMAREA interface to many BMS and terminal-oriented programs
  - Information in the COMMAREA is passed to the BMS application without having to emulate 3270 terminals
  - No changes required to existing BMS application

e-business access to CICS programs



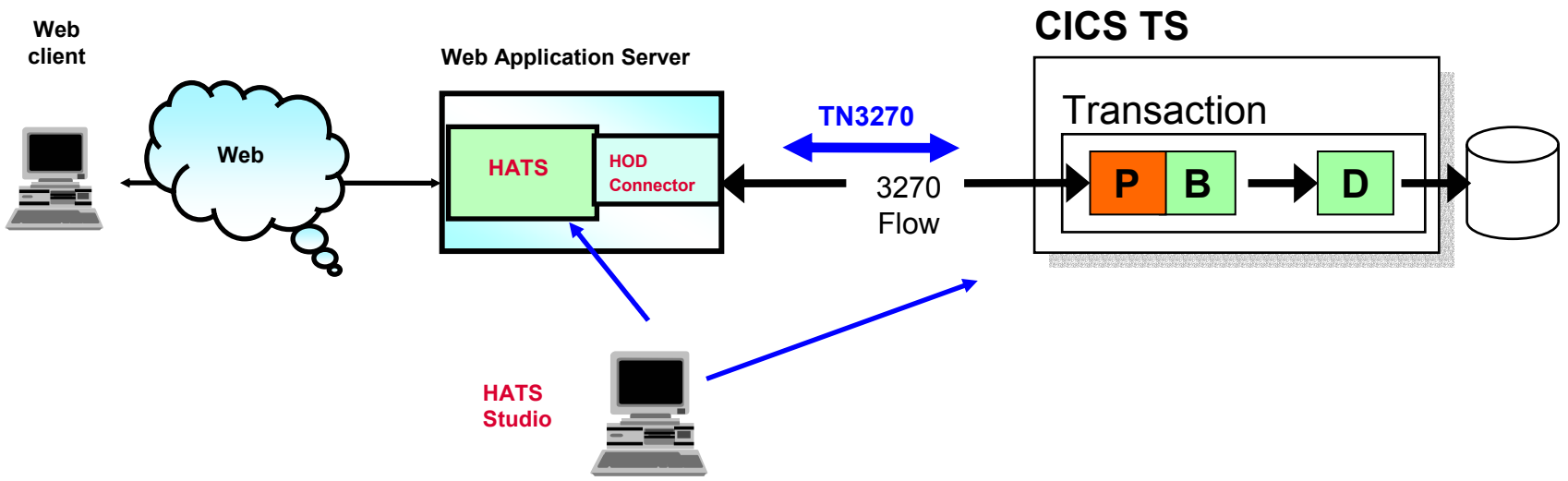
- Typical e-business clients
  - Web browser
  - Java servlet or EJB
  - Web Services SOAP client
  - C# client in Microsoft .NET
  - WebSphere MQ client

- Adapters
  - An external connector
  - **A** An internal adapter (written or generated by tools)
  - A standard IP-based protocol

Strategic ebusiness Connectivity Options

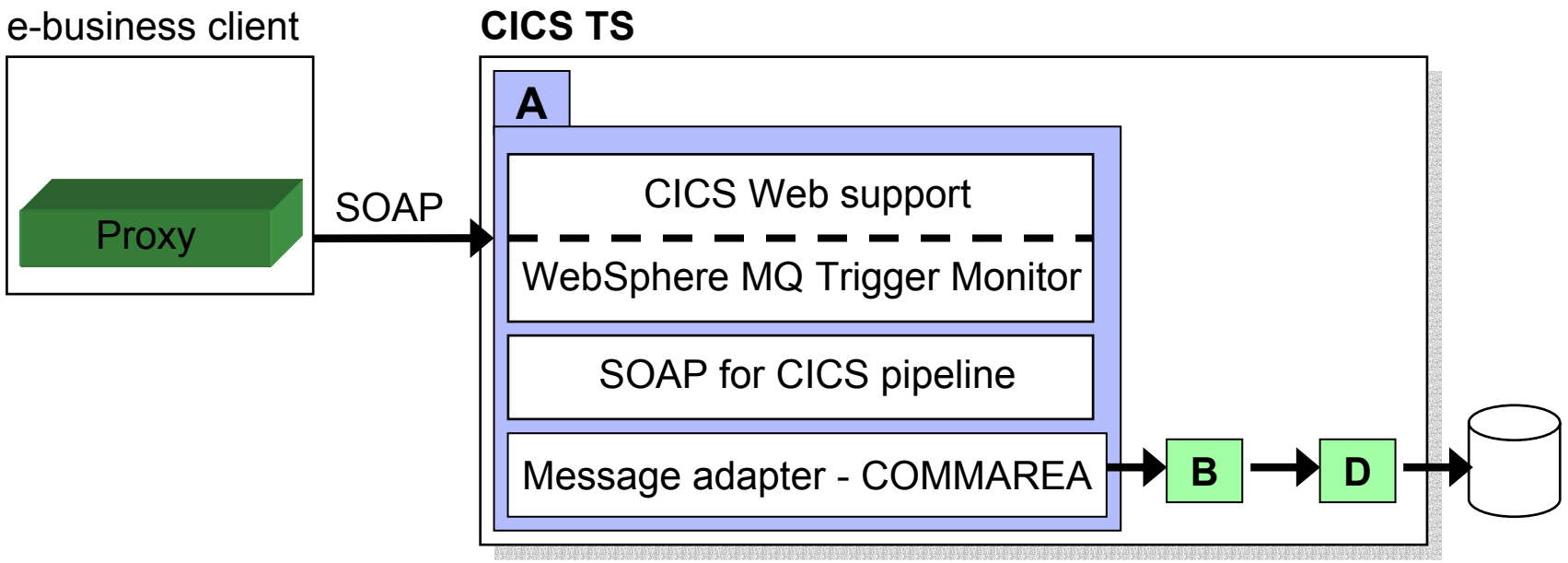
- Web-to-Host First Step
  - 3270 Revamping
- Standard architectures
  - SOAP (Simple Object Access Protocol) with CICS Transaction Server V2.3
  - JCA (J2EE Connector Architecture) with CICS Transaction Gateway
  - Java RMI (Remote Method Invocation) with CICS Transaction Server V2
- Standard transports - Typically used for applications that require greater control of the protocol
  - JMS (Java Messaging Service)
  - HTTP (HyperText Transfer Protocol)
  - CICS sockets

Web-to-Host using HATS



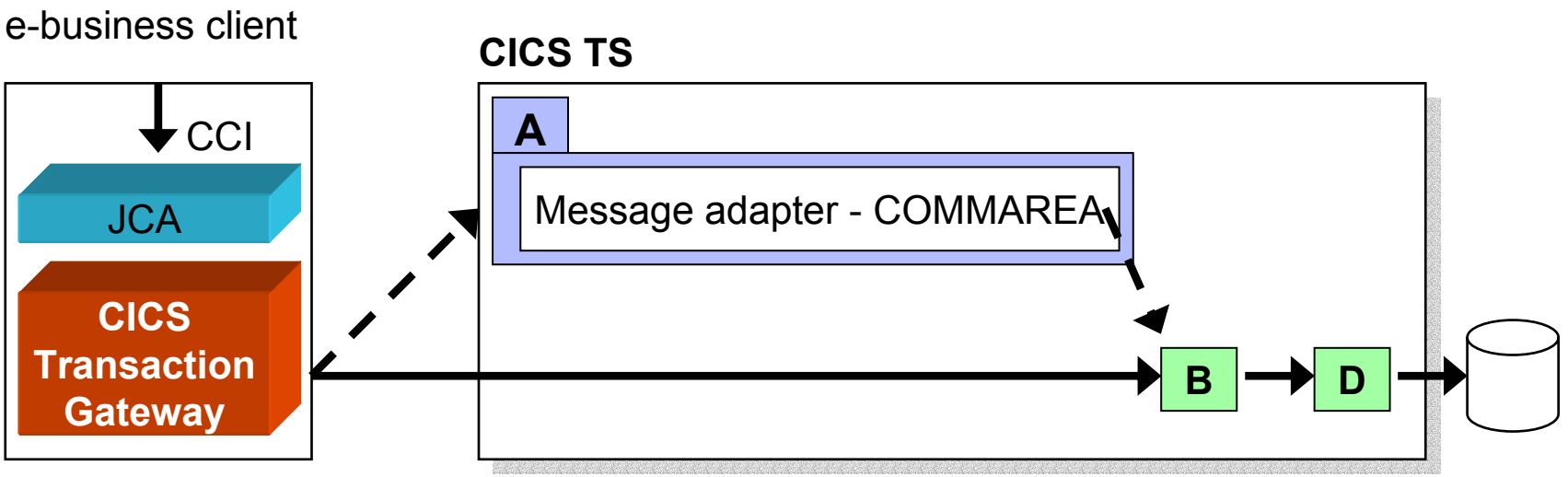
- Host Access Transformation Server (HATS)
  - Rules-based Web-to-Host transformation engine which dynamically converts 3270 screens in HTML pages
  - Can generate Web services or other Java objects from host transactions
  - Server based on WebSphere and 3270 HOD Connector
  - HAST Studio based on WebSphere Studio (WSAD)

Standard architecture – SOAP – Web Service



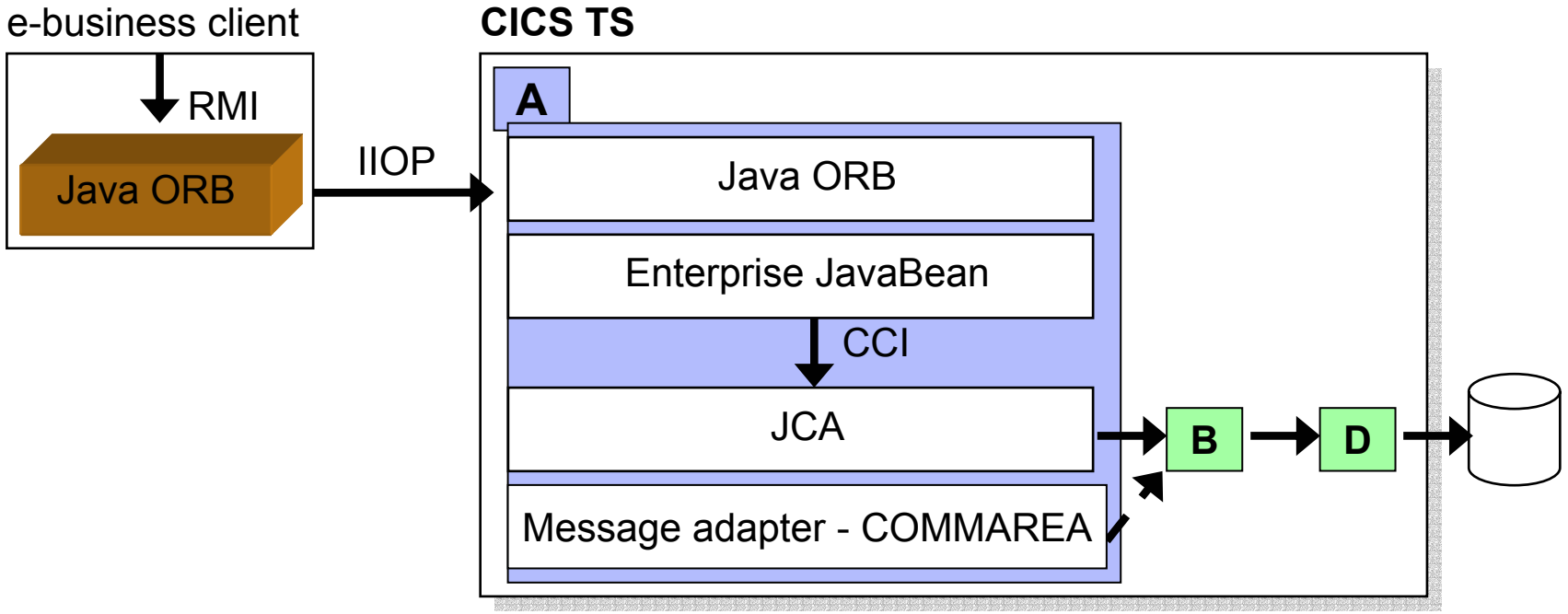
Standard architecture – JCA

- Implemented using the CICS Transaction gateway
  - The J2EE Connector architecture (JCA) connector
  - Common Client Interface (CCI) for the e-business client

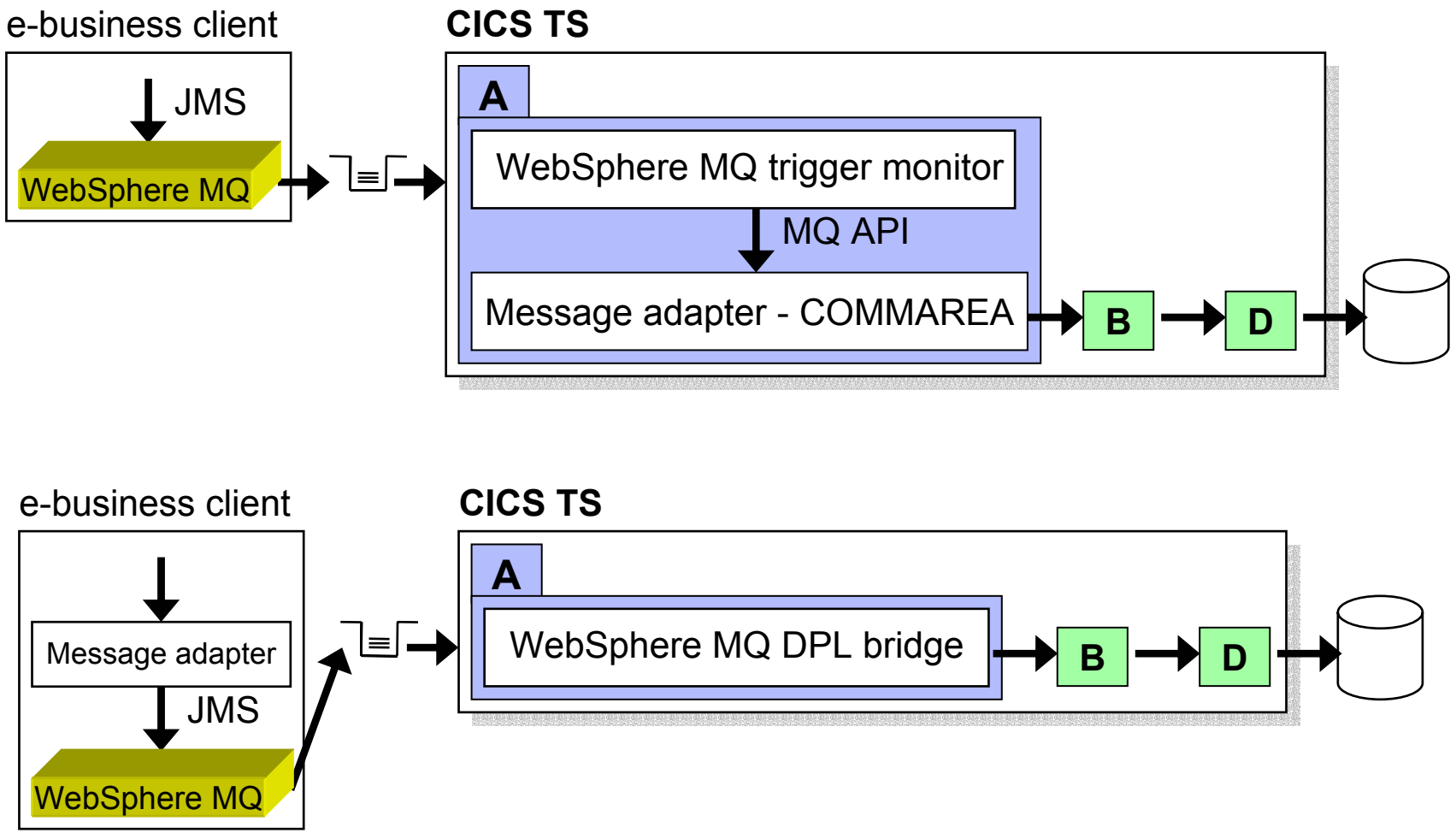


Standard architecture – Java RMI

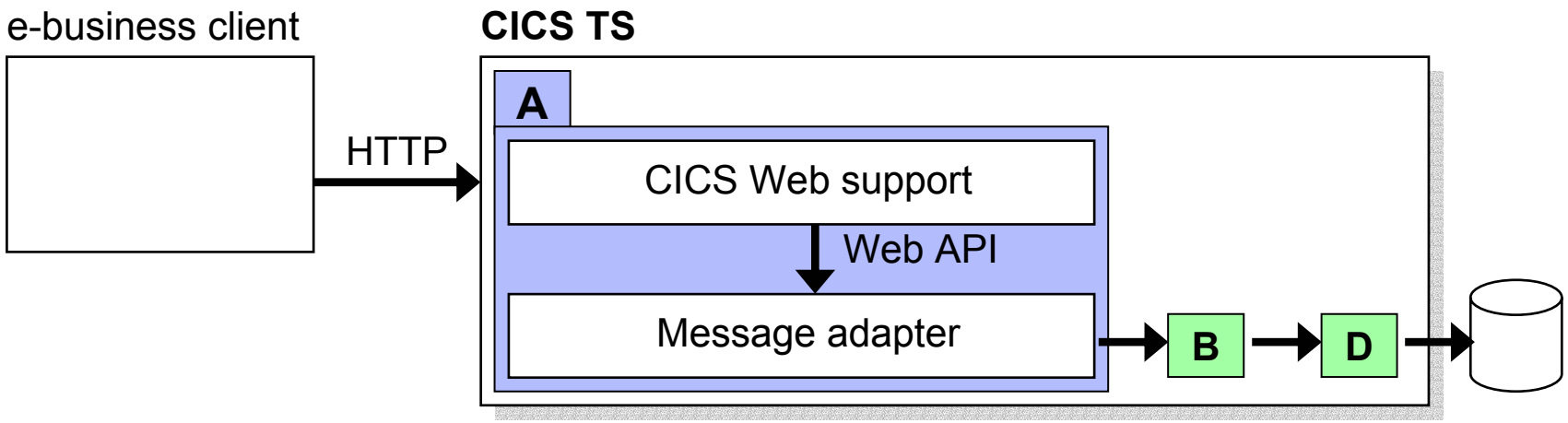
- CICS Transaction Server supports RMI over IIOP.
  - EJB to EJB communication



Standard transport – JMS

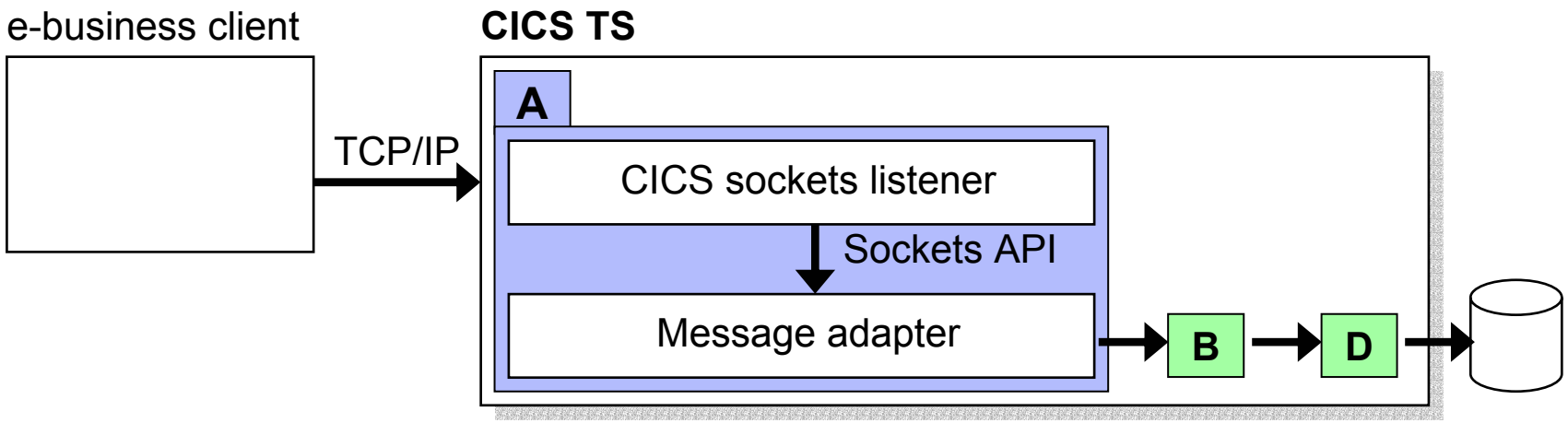


Standard transport – HTTP



- HTTP listener in CICS

Standard transport – CICS sockets



CICS Strategic Options Table

Standard architecture	Capabilities	Architecture	Interface	Coupling
0. 3270 Revamping		HATS or Link3270bridge	3270 flow	None Medium
1. SOAP	SSL HTTP (synchronous) WebSphere MQ (asynchronous)	CICS TS V2	XML in a CONTAINER COMMAREA	Low
2. JCA	2 phase commit User security context 32K max message size SSL Inbound only Synchronous	CTG	COMMAREA	Medium
3. Java RMI	2 phase commit State management User security role SSL Synchronous	CICS TS V2	Enterprise JavaBean (session bean)	High
4. JMS	SSL Asynchronous	WMQ	WMQ API or COMMAREA	Medium
5. HTTP	SSL Secure HTTP Synchronous	CICS	CICS WEB API	Medium
6. TCP/IP sockets	Synchronous or Asynchronous	TCP/IP for MVS	CICS Sockets API	Very High

Agenda

- What is e-business and why should I be interested in it?
- CICS Assets and Implementations
- Summary

Which architecture should I use ?

- Functional requirements that may influence your choice…
- Network requirements - SNA or TCP/IP
- Application requirements
  - Direct connection model vs. Messaging and Queuing model
  - Synchronous versus Asynchronous
  - Access to transactions versus direct access to data
  - Inquiry (read-only) or Update
  - Security
  - Performance
- Development requirements
  - Programming language
  - Skill
  - Cost - Build versus Buy and Modify Toolkits