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IBM SOA Architect Summit

GET PRACTICAL HELP TO MEET THE DEMANDS OF YOUR BUSINESS.

Extracting Value From What is Already There

Potential Issues and Expected Value From Reusing Existing Applications

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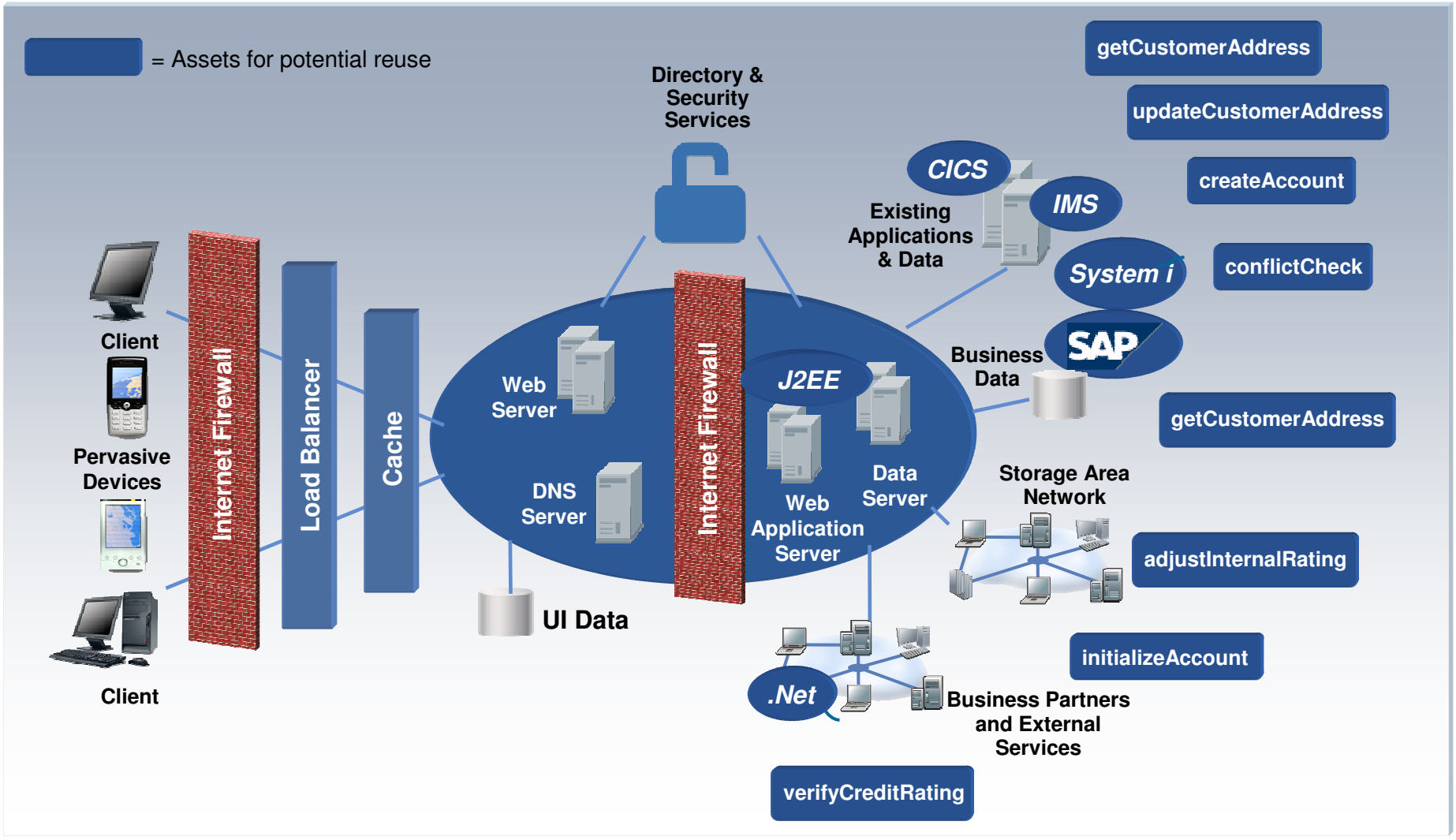
SOA Enables Greater Reuse of Existing Assets



Application Architecture Considerations

- Analyse business processes to discover services
  - Identify services required to perform the individual tasks defined by a given business process
  - Analyse existing applications to identify service providers
- Creating services
  - Use externally provided services to support commodity tasks
  - Use best practices (patterns) to create services from existing assets
  - Fill in gaps by creating new services
- Connecting to service providers
  - Enable "any-to-any" linkage between services inside and beyond the enterprise
  - Simplify connectivity by providing infrastructure that ensures Qualities of Service (QoS) including security, reliability, and scalability

Service-enable Mainframe Assets

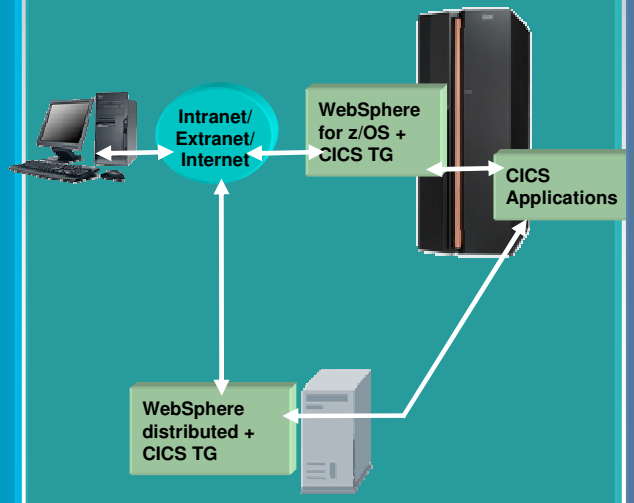
Make Better Use of CICS & IMS Investments

Enterprise Service Bus

- Messaging provides loosely coupled connectivity with assured delivery and reliability
- Advanced ESB Solutions can convert from any format (including SOAP) to COMMAREA format
- No changes required to existing application

Adapters

- J2EE to Mainframe adapters provide tightly coupled connectivity with two-phase commit support



Native Web Services

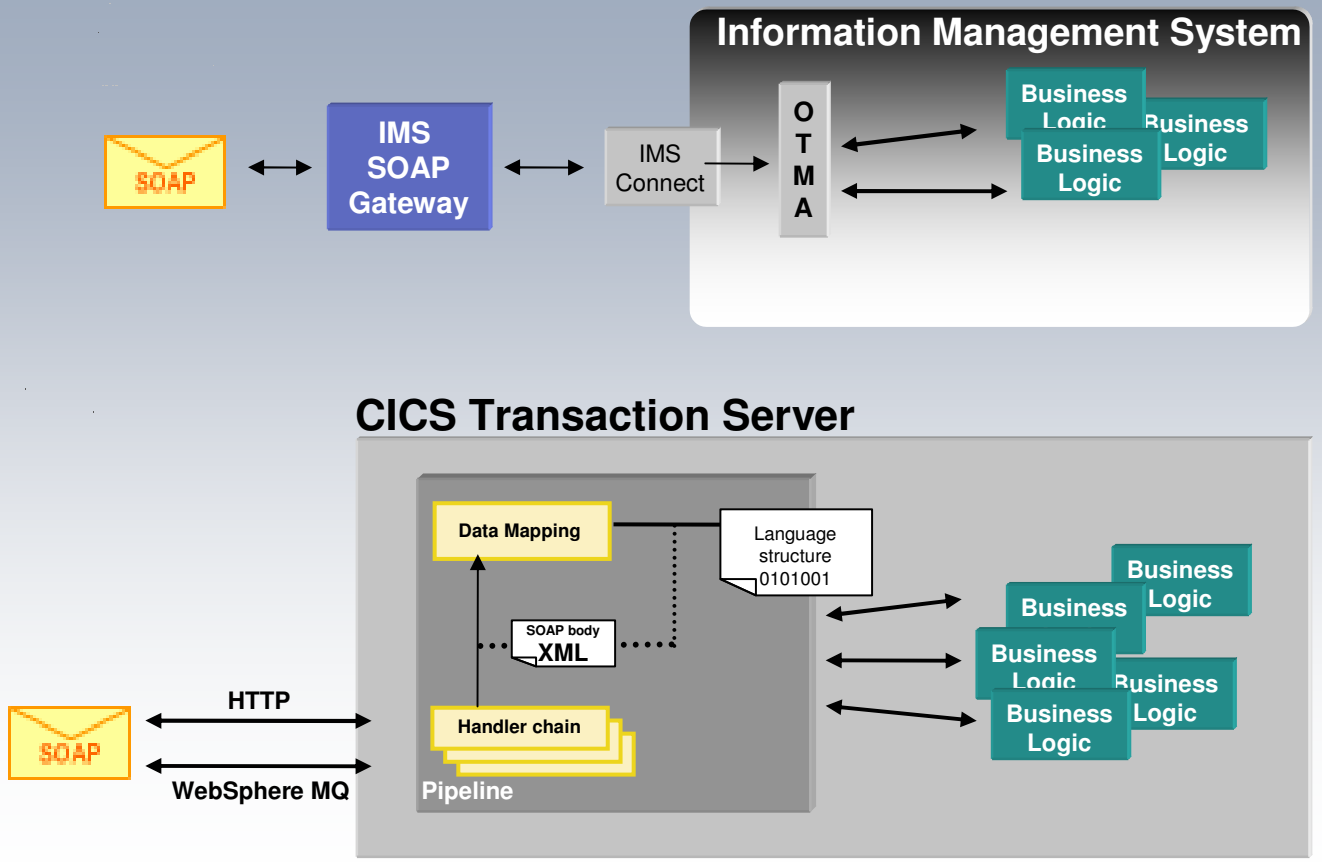
- CICS & IMS can both expose transactions as native Web Services
- No other runtimes required

So many options…

… let's focus on patterns

Direct Access Pattern Example

CICS and IMS Native Web Services



Direct Access Pattern

Benefits:

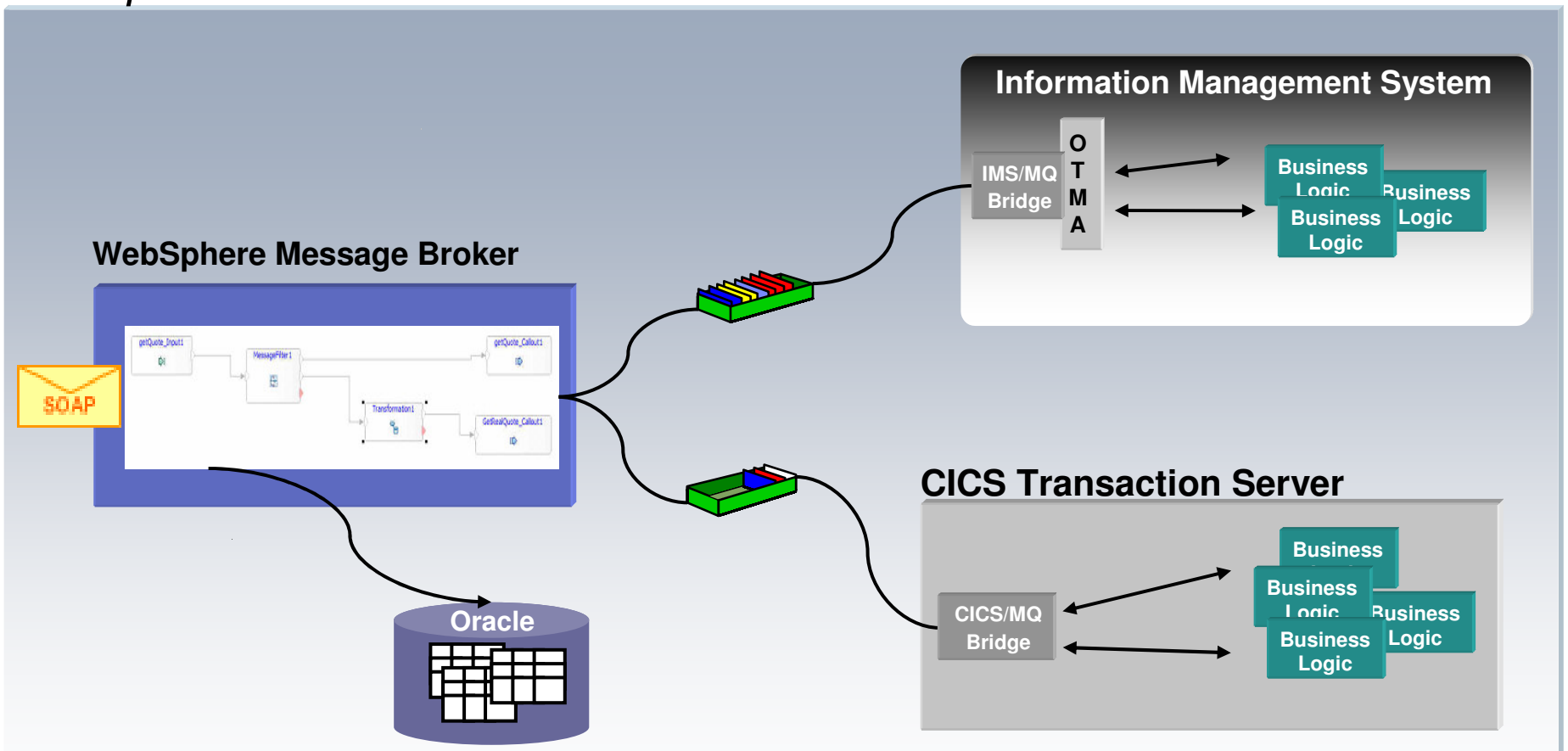
- Shorter deployment cycle … compared to indirect access
- The service interface is defined by the asset
  - No analysis required to determine the interface
- No knowledge of other runtimes (Java, Message Broker, etc.) is necessary
- Fewer platforms/moving parts

Issues:

- Consumers become coupled to the asset environment
  - Difficult to substitute the asset for an alternate
- Requires the asset runtime environment have support for service invocation
- Asset capability needs to match the service requirements
- Places an XML processing burden on the asset runtime
  - Systems that are often paid for on a “MIPS consumed” model

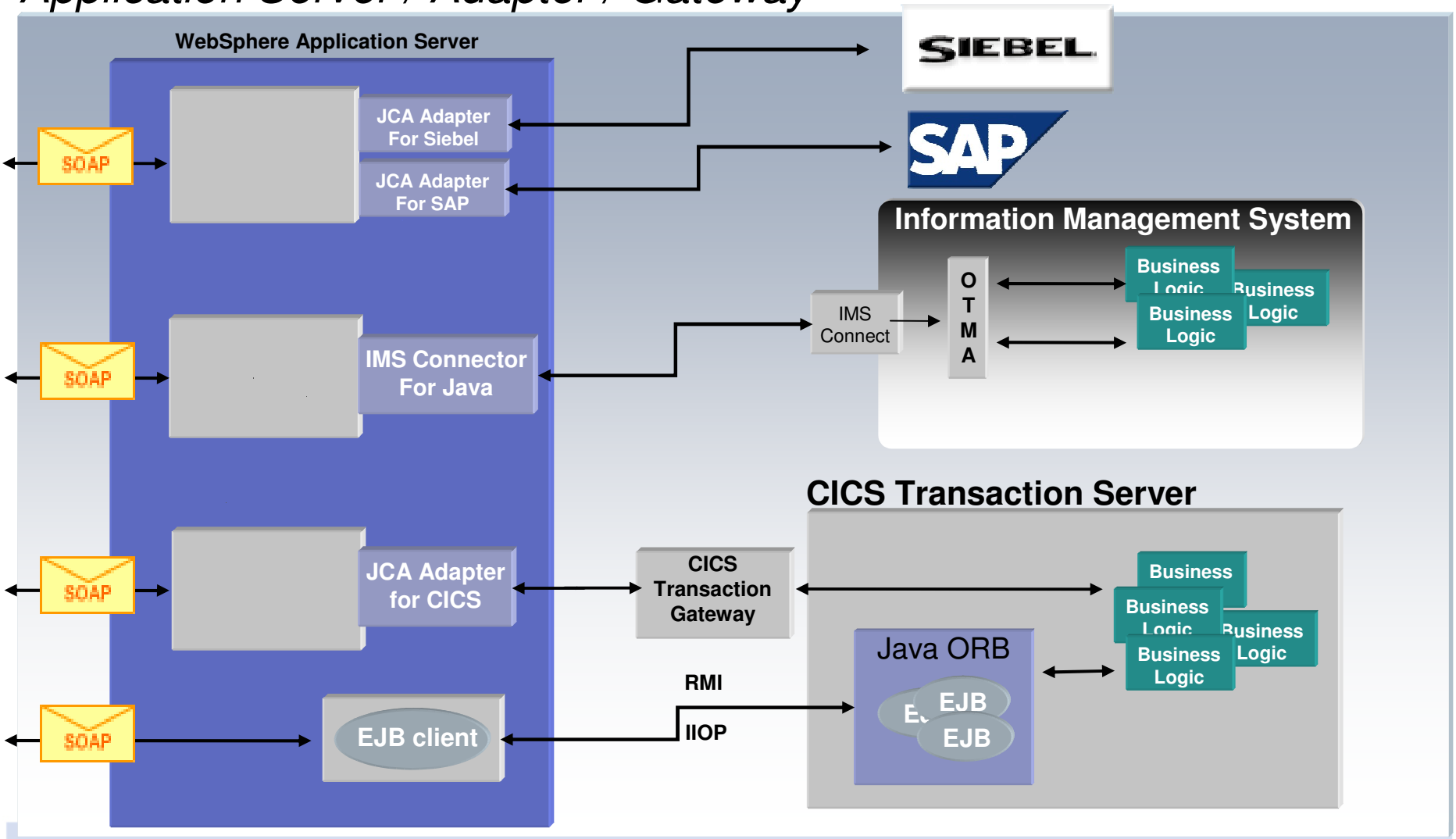
Indirect Pattern Example

Enterprise Service Bus



Indirect Pattern Example

Application Server / Adapter / Gateway



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Indirect Access Pattern

Benefits:

Business alignment is maintained

- Service interface that suits/aligns with the business view and not with existing legacy assets
- Service component maps between the two worlds

Straightforward to substitute the asset

- Service component may be replaced without impact on the consumer

Offloads the XML processing burden

- Many systems account for resources using a “MIPS consumed” model

A service may be implemented using behavior from more than one asset

- Service component aggregates the behavior to realize the service
- Enables additional capability to be added

Issues:

Longer deployment cycle than Direct Access

- Consideration must be given to the definition of the service interface
- Time spent developing the service component

More complex than Direct Access

- Generally involves the use of connector/adapter technology between the service component and the backend systems
- Usually introduces a middle tier

Patterns Selection Guide

Comparison of Indirect vs Direct Access

Decision Criteria	Indirect	Direct
Implementing an existing or business driven service definition	■	
Many requestors or requestors outside of providers domain	■	
Aggregation or business logic applied across multiple existing functions	■	
Need to enable service provider/implementation replacement	■	
Return subset of information available in the existing function	■	
Cost of MIPS on existing platform is key concern	■	
Several assets to be aggregated together	■	
Skills only available on existing platform		■
Existing platform is strategic platform		■
Expediency is key driver		■

Summary

There is significant value in reusing existing assets
- Faster time to value
- Cheaper to re-use than to re-write
- Existing assets are tried and trusted
  - *Isn't that spaghetti really 40 years of accumulated knowledge?*

Well defined approaches to discovering high-value assets for reuse
- Analysis done as part of service design methodology (e.g. SOMA)
- Existing asset analysis through tools

Two primary architecture patterns for reusing existing applications
- Indirect access to target asset through service component
- Direct access to target asset through service interface

Need capabilities to support connecting and using existing assets
- (Next Presentation)