CORBA Investment Reuse

Strategies for Deployment of Web Services and Reuse of CORBA Business Applications

Agenda

- Business Concerns
  - Business Focus
  - Limiting Enterprise Complexity
  - Agile Systems
  - CORBAConnect
- Components for Success
  - Hierarchy of Patterns
  - Application Patterns for Web Services
  - IONA Methodology
- Practical Examples
  - IONA Reference Architecture
  - Web Services at work

Business Concerns

- Solution Focused
- Become and Remain adaptable
- Implementations of business processes and Access to them must be flexible and extensible.
- Optimization and Economy

Enterprise Complexity

- A Competitive Enterprise is composed of:
  - Resource Management
    - Resources of people, services, & product
  - Knowledge Management
    - Markets, Strategic Relations, Technologies, etc.
    - Data Management, Trend Analysis, EIS
  - Business Solutions
    - Based on conclusive market analysis
    - Supported and encouraged by Knowledge Mgt

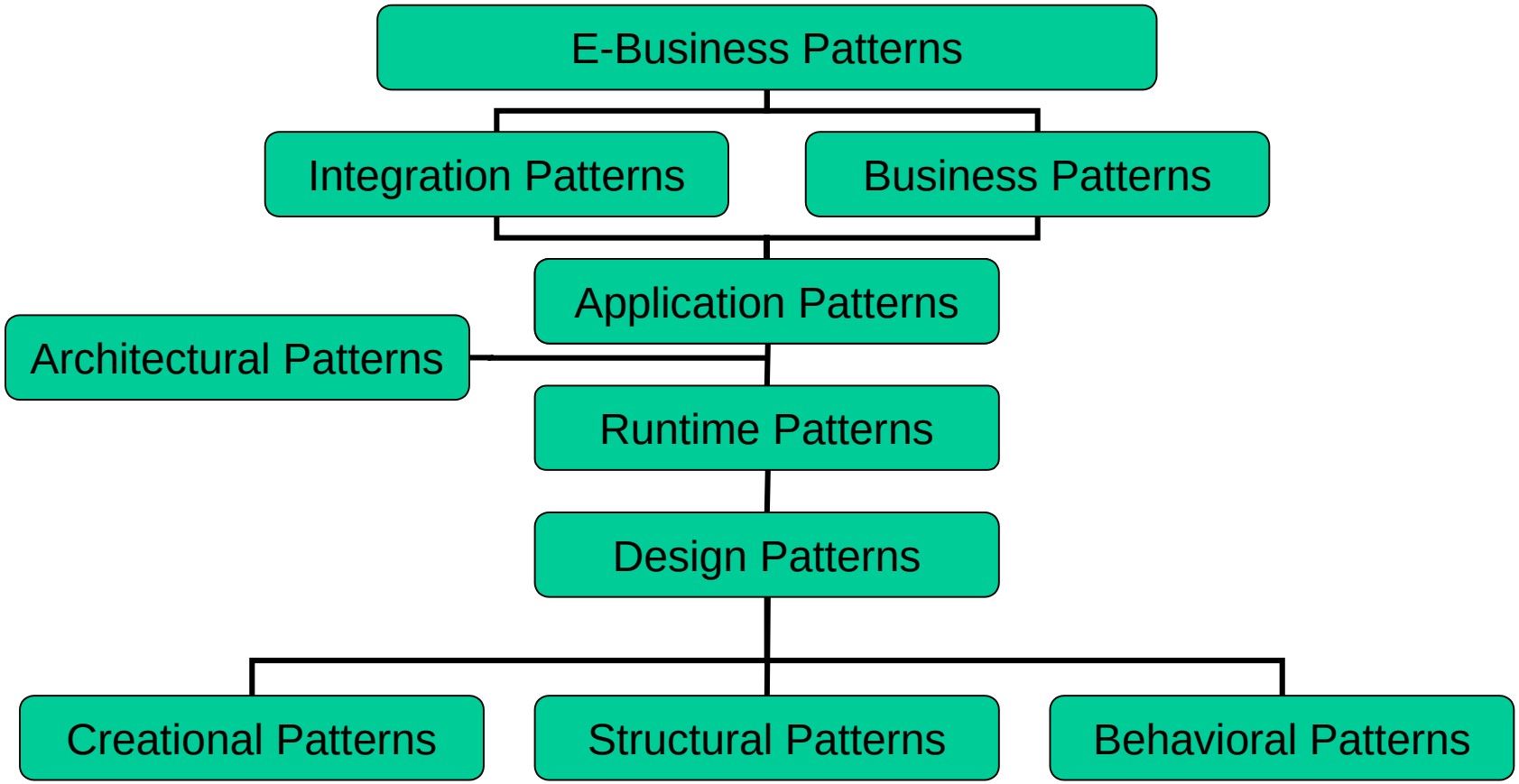
Flexible Systems

- Facilitating the Business Concerns
  - Use existing business systems
  - Build on existing architecture
  - Use existing skills
  - Prepare for business extensions
  - Expose business process to wider audience
- Address Enterprise Complexity
  - Use existing business systems
  - Prepare for business extensions
  - Prepare for technology evolution
  - Manage business latency

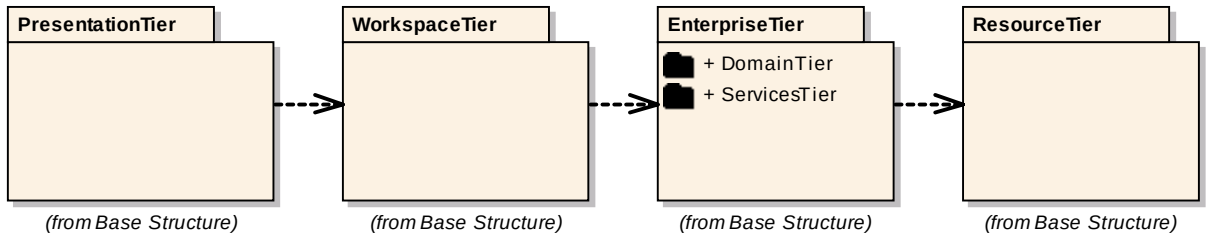
Components for Success

- Hierarchy of Patterns
- Patterns for Web Services
  - Access & Application Integration
  - Solution depends on required complexity
- Practical Examples
  - IONA Reference Architecture
  - Web Services in Finance
  - Web Services in Telecommunications

Hierarchy of Patterns



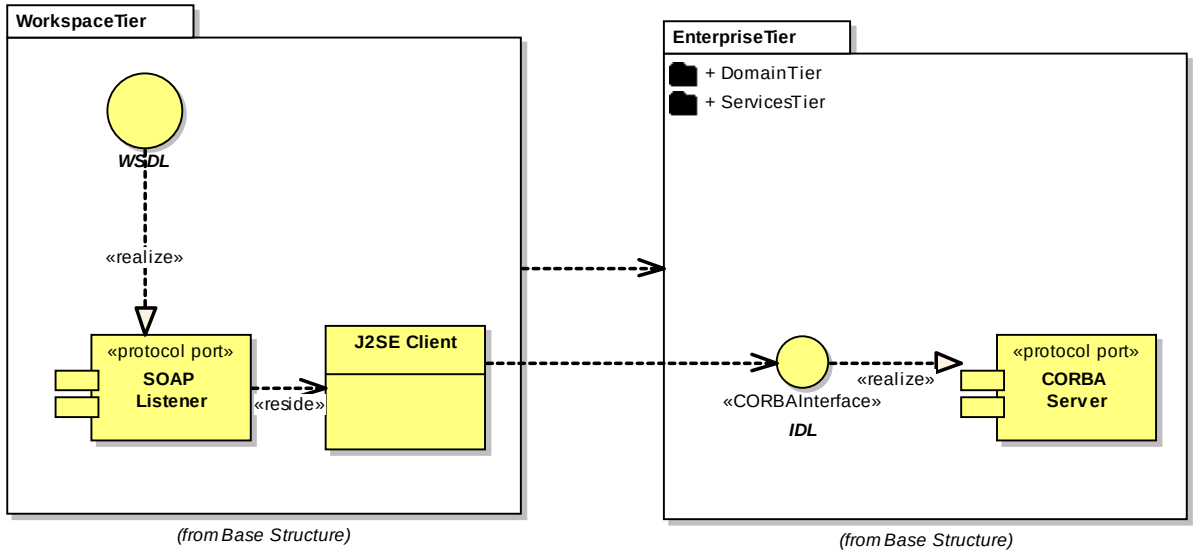
IONA Reference Architecture



Patterns for Web Services

- Two Integration Patterns
  - Access Integration
  - Application Integration
- Solution depends on requirements
- Four scenarios – Four solutions – Four application patterns
  - Direct Connection
  - Router
  - Broker
  - Managed Process

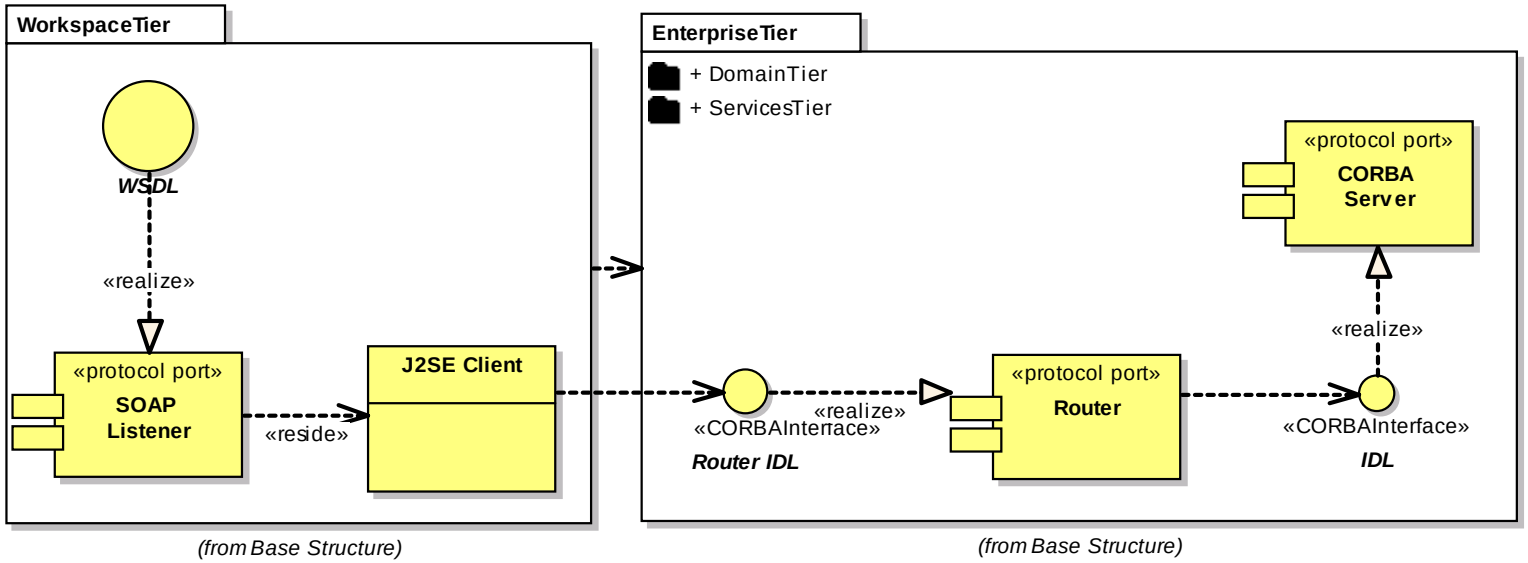
Direct Connection



- Used when:
  - There is a single application to integrate
  - Typically synchronous mechanism
  - Data types are simple
  - Interface contract is simple

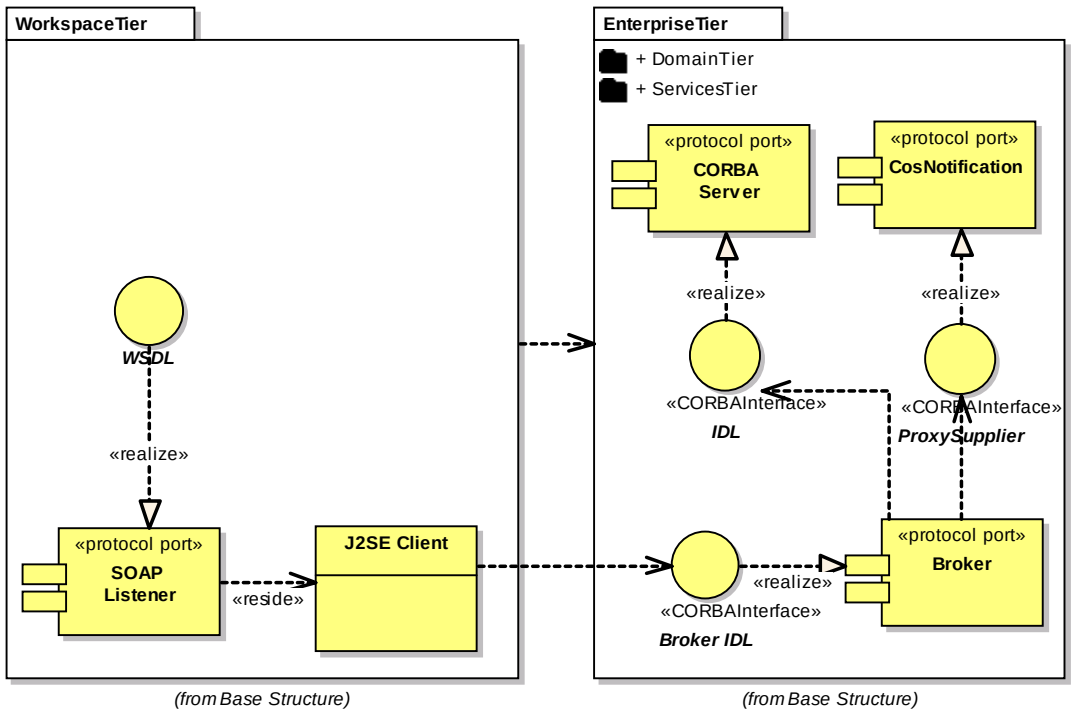
- Benefits:
  - Supports a structured exchange
  - Leverages existing skills
  - Minimizes application complexity
  - Leverage legacy investment

Router



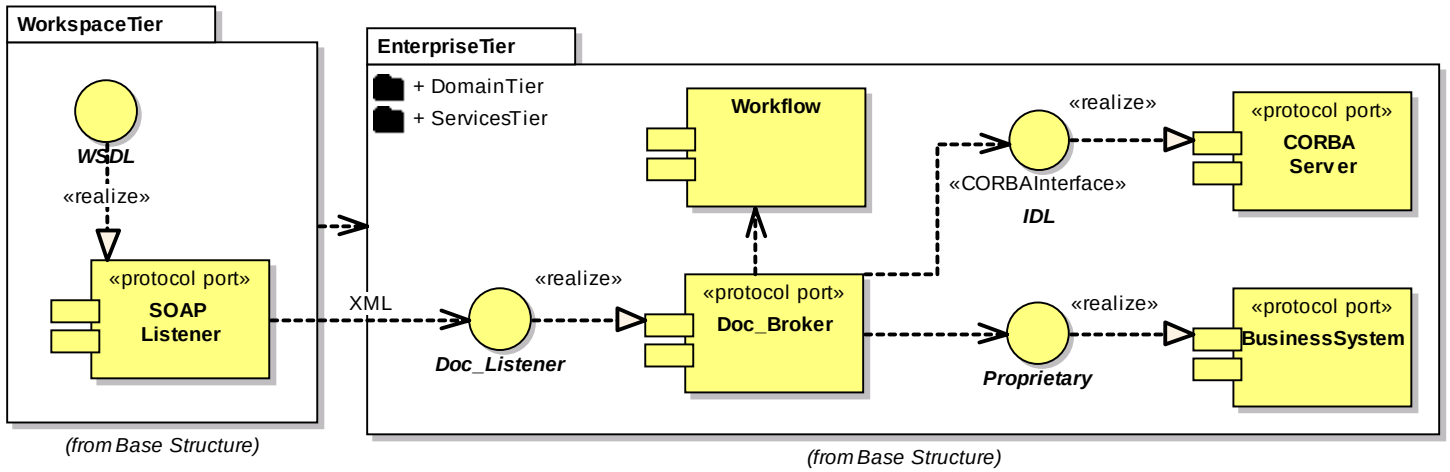
- Use when:
  - CORBA version or vender impedance
  - Complex or nested data types require transformation
  - Impedance of interface granularity
  - Single application integration
- Benefits:
  - Leverage existing skills
  - Leverage legacy investment
  - Minimize application complexity
  - Minimize enterprise complexity

Broker



- Used when:
  - Multiple interfaces or systems
  - Request decomposition
  - Complex data type transformation
  - Simple business rules
- Benefits:
  - Leverage existing skills
  - Leverage legacy investment
  - Minimize enterprise complexity
  - Hide complexity of back-end systems
  - Decompose complex requests

Managed Process



- Used when:
  - Support for long running transactions
  - Complex data type transformation
  - Multiple step business transactions
  - Request decomposition
  - Multiple system & multiple interfaces
  - Complex business rules

- Benefits:
  - Automate long running transactions
  - Decompose complex requests
  - Leverage existing skills
  - Leverage legacy investment
  - Hide complexity of business transactions

Practical Examples

- Web Service example in Finance
- Web Service example in Telecom

Web Services in Finance

- Scenario
  - Established Brokerage
  - Large mainframe/CORBA investment
  - Wants to expose business systems
    - Advisors and Managers
  - Doesn’t want to do the “Branding”

Web Services in Finance

- Requirements
  - Reuse existing mainframe and CORBA investment
  - Leverage existing skills
  - Expose existing systems with minimal effort
  - Expose existing systems using uniform technology
  - Allow for growth (extensible and scalable)

Web Services in Finance

- Strategy
  - Single point of access
    - Uniform access
    - Authentication, etc.
  - SOAP Listener
  - Expose existing CORBA interfaces
  - New components limited
    - Data Transformation
    - Exception management
    - Handling complex data types
    - Increase granularity of existing interfaces

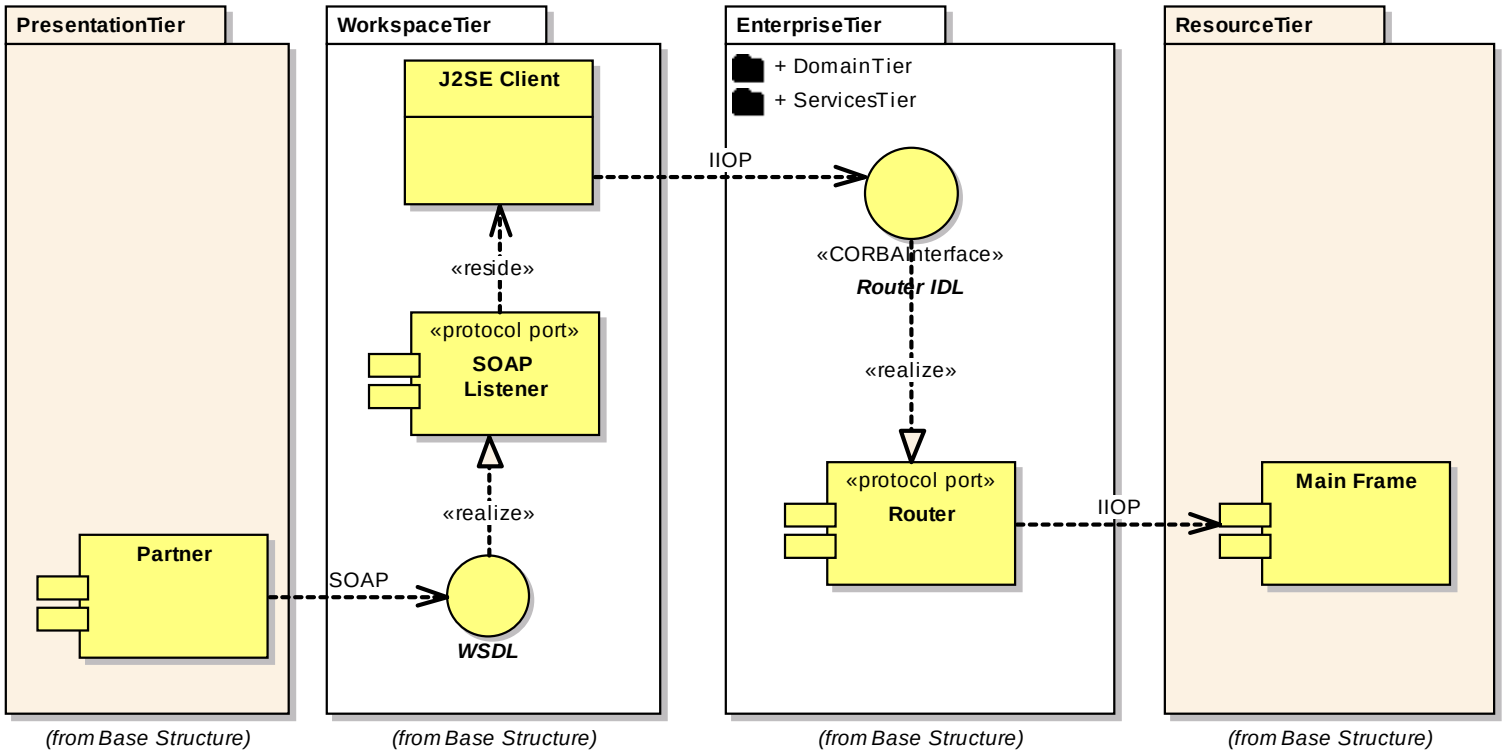
Web Services in Finance

- Elaboration
  - Analyze existing CORBA IDL
    - Data Types
    - Exception handling strategy
    - Granularity and Sequence
  - Determine integration strategy
    - Insulating interface (WSDL design)
    - Exception handling strategy
    - Sequence design
  - Implement integration strategy

Web Services in Finance

- Implementation
  - J2SE SOAP-CORBA adapter
    - Implements WSDL
  - Use Router pattern to insulate complexities
  - No changes to existing CORBA investment

Web Services in Finance



Web Services in Finance

- Benefits
  - Router makes solution extensible
  - Re-uses existing investment
    - No changes to mainframe components
    - No changes to existing CORBA components
  - Leverages existing skills base
  - Simple implementation introduces new skills
    - Short learning curve

Web Services in Telecom

- Scenario
  - Customer call center
    - .NET client
  - Web based customer support
  - Existing CORBA provisioning systems
  - Wants to use existing systems for .NET and Web

Web Services in Telecom

- Requirements
  - Reuse existing business systems
  - Provide a single access point to existing systems
  - Provide .NET integration
  - Reuse existing JSP investment

Web Services in Telecom

- Strategy
  - SOAP access port can support both Web and .NET access
  - Web framework will require very few changes
  - Reuse existing CORBA investment
    - No changes
  - New Components limited
    - Access integration via SOAP broker
    - Broker distributes calls to existing components

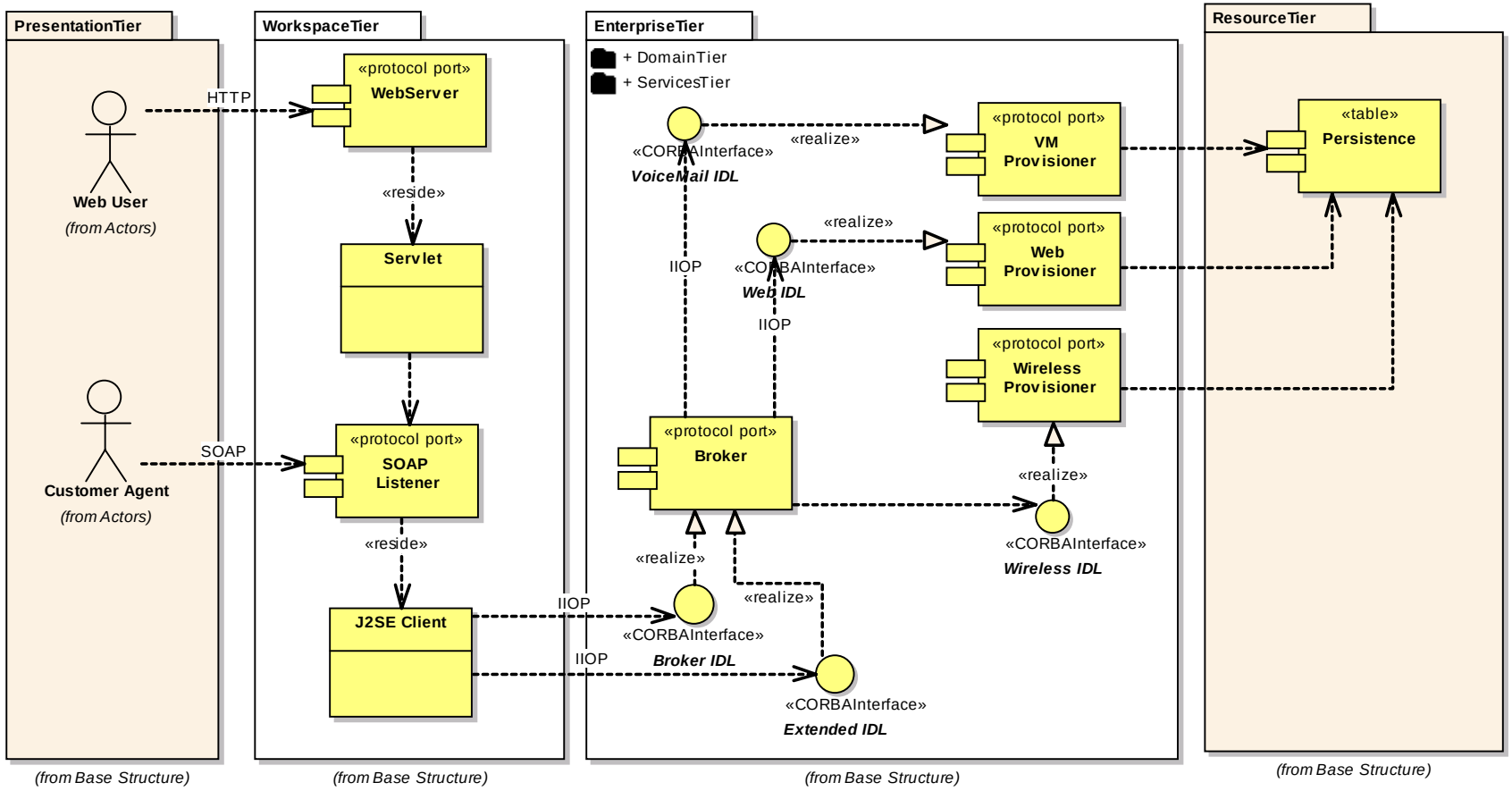
Web Services in Telecom

- Elaboration
  - Analyze existing CORBA interfaces
  - Analyze transaction sequences
    - .NET sequences
    - Web sequences
  - Define WSDL
  - Define Broker responsibilities
    - Exception handling
    - Sequence and System Collaborations

Web Services in Telecom

- Implementation
  - SOAP Listener
  - Broker simulator
  - Implement WSDL
  - J2SE CORBA client integrated with SOAP Listener
  - .NET integration
  - JSP integration
  - Broker implementation

Web Services in Telecom



Web Services in Telecom

- Benefits
  - Extensible and Scalable
  - Uniform access to business services
  - Reduces enterprise complexity
  - Reduces IT redundancy
  - Leverages existing skills
  - Leverages existing CORBA investment

Conclusion

- Web Services for Access Integration
- Web Services for Application Integration
- Patterns for increasing complexities
- Uniform access to existing business systems
- Uncouples presentation components from business systems
- Enables extensible services and flexible integration points
- Reduces enterprise complexity
- Opportunity for increased return on investment

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