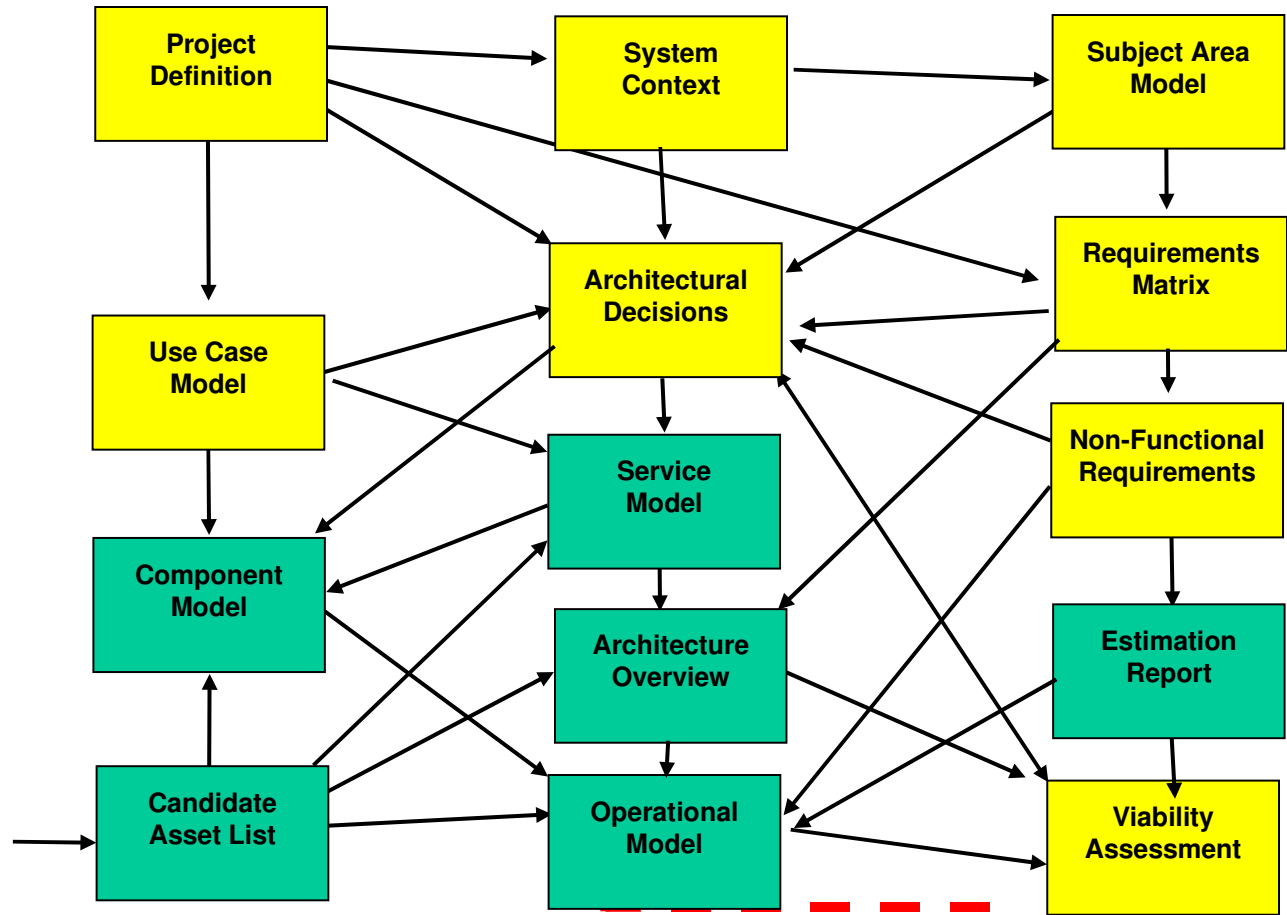


Work Product Dependency Diagram



Assets
 Reference Architectures
 ITT Solution Brief, Patterns
 Redbooks, etc

REQUIREMENTS

Definition

SOLUTION

Design

Phase: SOLUTION Design

Task : Develop Architecture Overview

▪ Purpose :

- Develop a high level abstraction of the proposed system or application.
- Provide a basis for discussion, explanation and evolution of the architecture.

▪ Description : The following are examples of information gathered in this task.

- What non-functional requirements exist?
- What system constraints or preferences exist? * What are the goals for this project?
- What application requirements have been defined?
- What are the system or application boundaries?
- What systems or subsystems are known to be a part of this system or application?

Work Product Started : Architecture Overview Diagram

▪ Purpose : The Architecture Overview Diagram work product is used to:

- Provide a high-level shared vision of the architecture and scope of the proposed IT system
- Explore and evaluate alternative architectural options

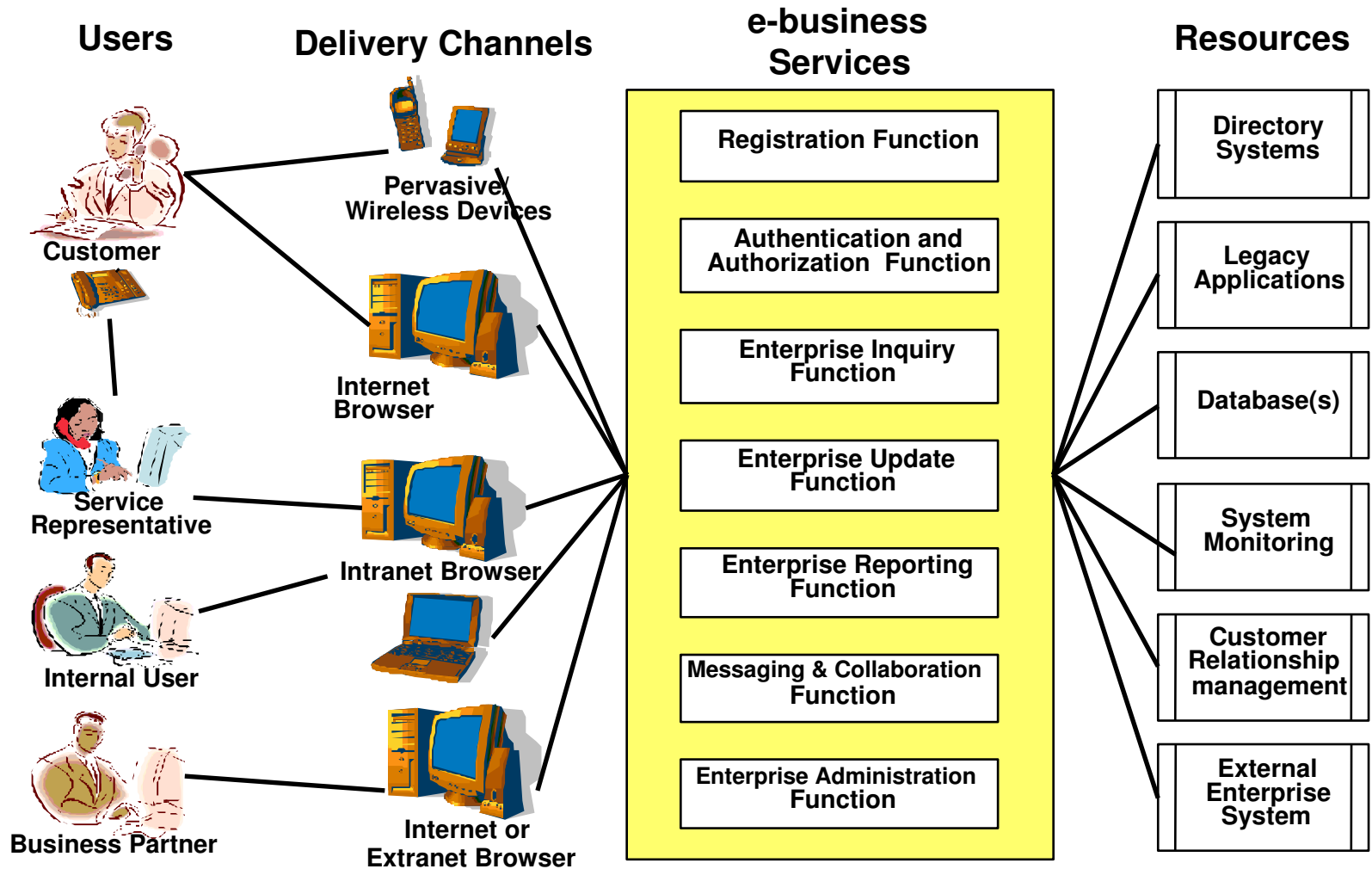
▪ Description :

- The Architecture Overview Diagram work product is a schematic diagram that represents the governing ideas and candidate building blocks of an IT system or enterprise architecture, typically including candidate subsystems, components, nodes, connections, data stores, users and external systems.

Work Product Input/Updated : Architecture Overview, System Context, Non-Functional Requirements

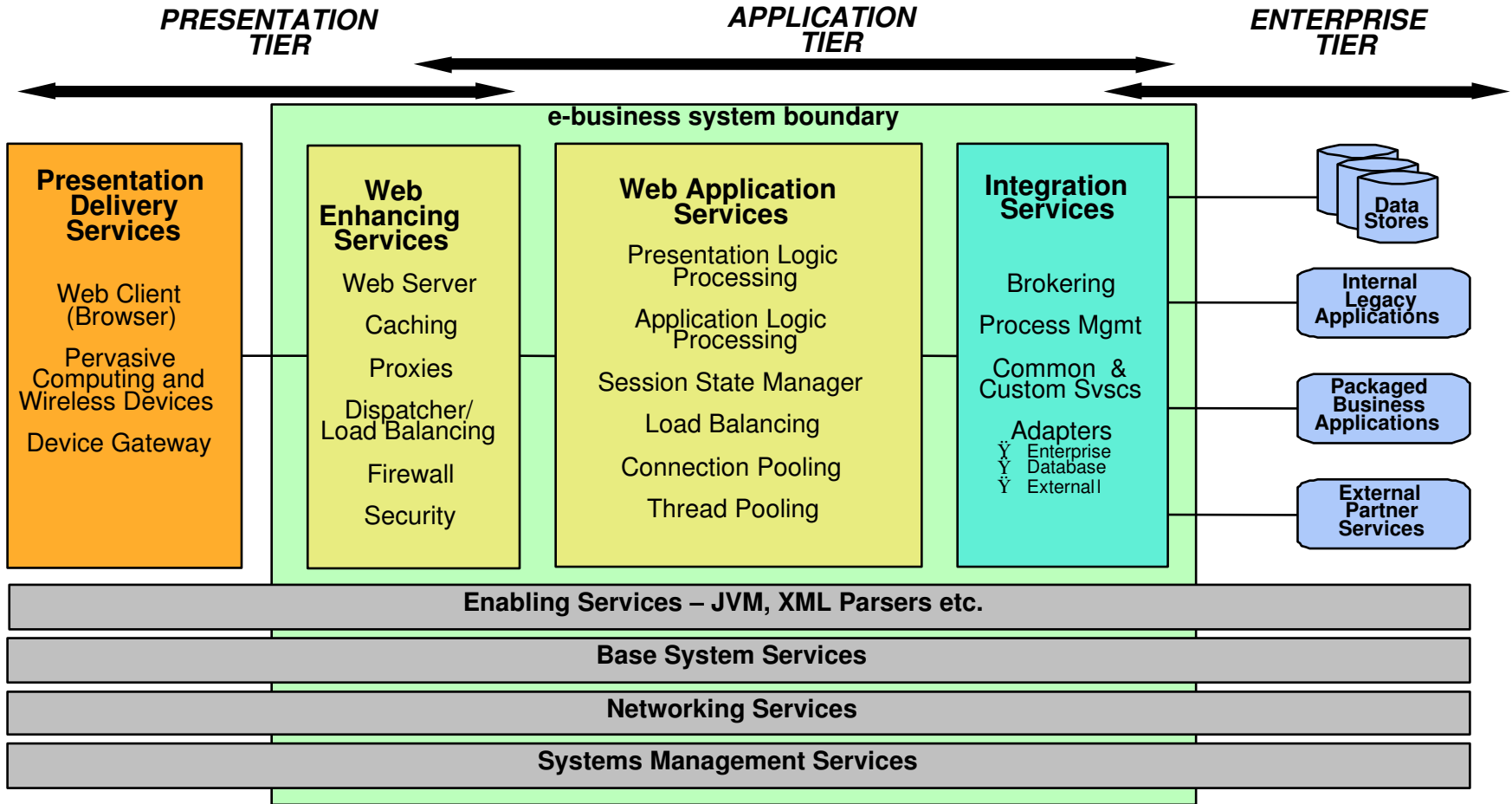
Phase: SOLUTION Design

Work Product : Architecture Overview Diagram



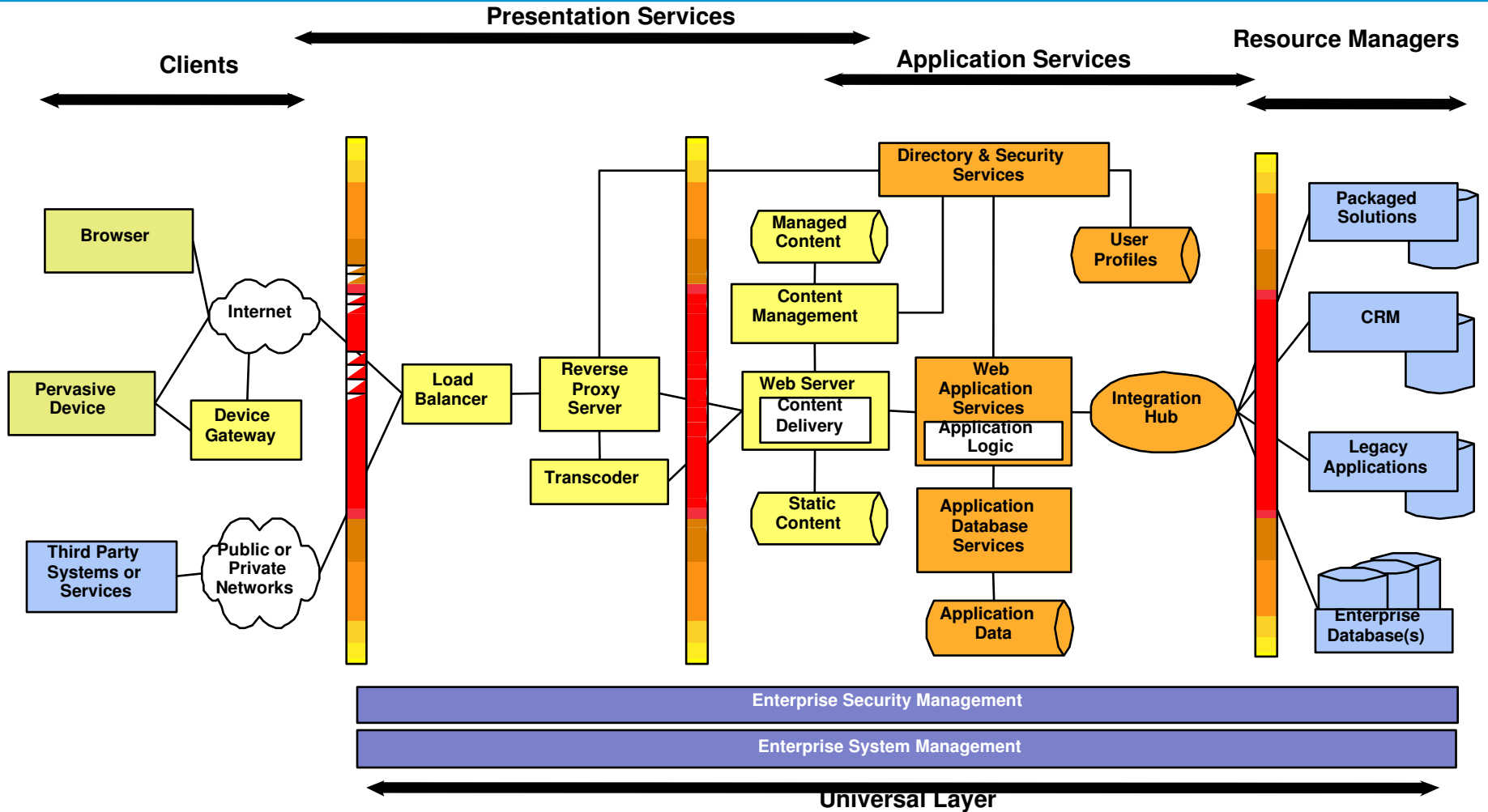
Phase: SOLUTION Design

Work Product : Architecture Overview Diagram



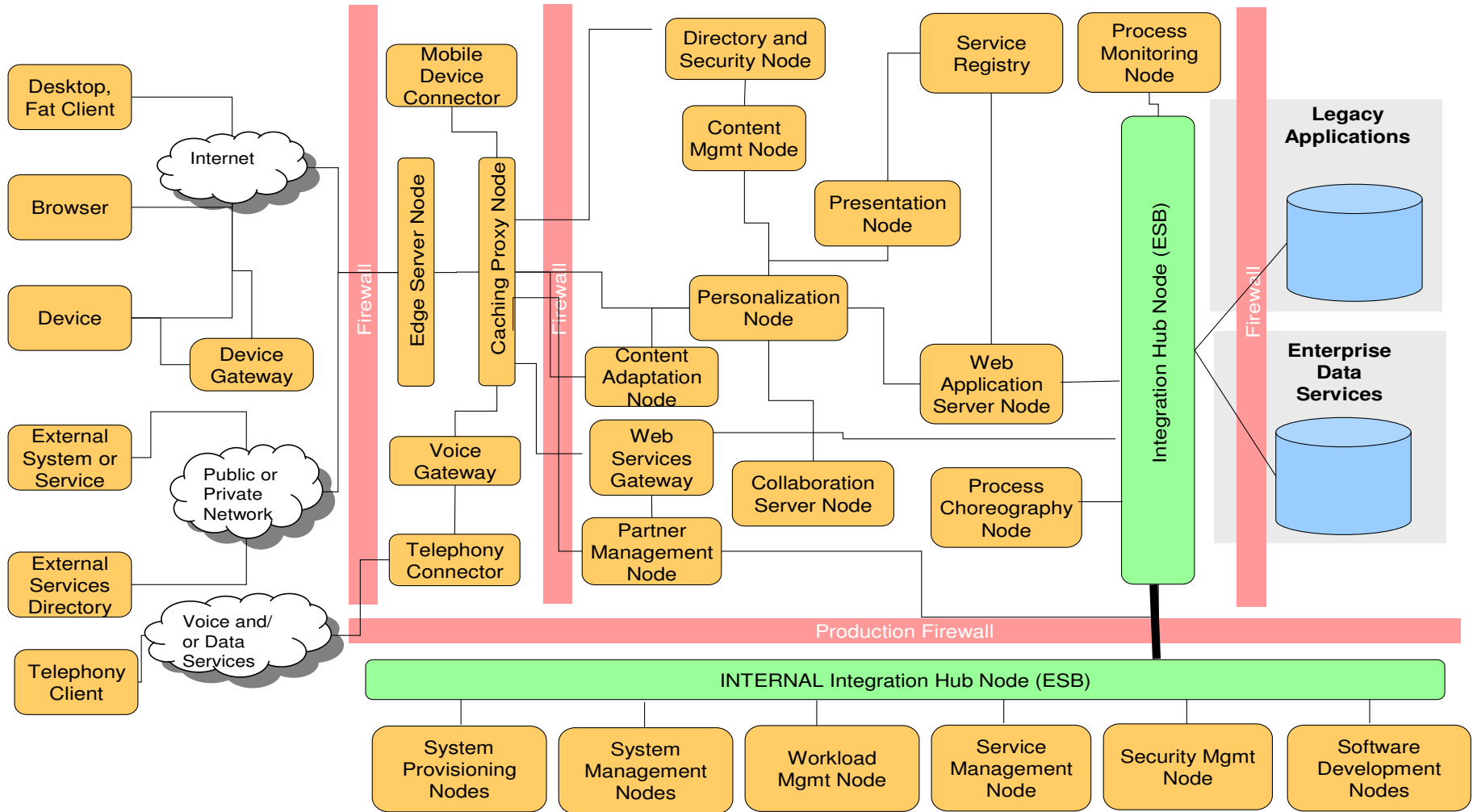
Phase: SOLUTION Design

Work Product : Architecture Overview Diagram



Phase: SOLUTION Design

Work Product : Architecture Overview Diagram



Phase: SOLUTION Design

Task : Survey Candidate Assets

▪ Purpose :

- Identify architectural assets that might be relevant for the project.
- Analyze the fit and gap between assets and project requirements.
- Decide whether to base areas of the solution on available assets.

▪ **Description :** Identify the need. Understand the project scope and the general functionality required. Find assets and analyze fit/gap.

▪ **Key Considerations :** If applicable, hold a Solution Optimization Workshop to maximize the attractiveness of the solution and minimize the cost to IBM.

Work Product Started : Candidate Asset List

▪ **Purpose :** to identify useful artifacts that can be helpful in design and proposal activities. This is in addition to identification of reusable assets such as software components that are used to complete the Component and Operational Models.

▪ **Description :** It shows what kinds of assets were searched for, what serious candidates were found, and what turned out to be useful.

▪ **Key Considerations :** See Guideline for list of assets.

Phase: SOLUTION Design

Work Product : Candidate Asset List

For "IBM Solution Design Method" (pre-sale) users: the simple table below is an example of the information you might capture in a Candidate Asset List work product.

Candidate Asset ID	Asset Name / Description	Related Requirements	Decision
CA01	GSC On Demand Contact Center prototype (http://w3.ibm.com/support/stss/odcc2.html)	FR30 - computer telephone integration	Use intelligent routing and IVR scripting architecture.
CA02			
CA03			

Sources of Available Assets

Patterns for e-business	http://www.ibm.com/developerworks/patterns/
Redbooks	http://www.redbooks.ibm.com
Developerworks	http://www-128.ibm.com/developerworks
IBM Partnerworld	http://www-1.ibm.com/partnerworld/pwhome.nsf/weblook/index.html
Solution Assembly Toolkit	http://rchgsa.ibm.com/~midmarkt/components/eecPages/SolutionAssemblyToolkit.html
IBM Solutions Builder Express	http://www-1.ibm.com/partnerworld/pwhome.nsf/weblook/pub_strategies_smb_sbe_getstarted.html
Solutions Consultant Express Tool	

Phase: SOLUTION Design

Task : Define Key Services

▪ Purpose :

- Identify a few key services (existing or new) that might be relevant for the project.
- Assess how these key services can address important functional and non-functional requirements.
- Determine how these services impact the overall Service Oriented Architecture solution

▪ Description :

- Identify, categorize the set of potential services that are within scope for the solution being proposed.
- Refine the set of services to ensure that they meet the requirements of the solution.
- Finalize the list of services that are within scope and create an architectural view of the services and their relationships.

Work Product Started : Service Model

▪ Purpose :

- Identify candidate services and capture decisions about which services will actually be exposed
- Specify the contract between the service provider and the consumer of the services
- Associate Services with the components needed to realize these services

▪ Description :

- The Service Model captures multiple elaborations of services. The first elaboration begins as a list of candidate services in the Service Portfolio created during service Identification activities.

Work Product Input/Updated :Service Model, Candidate Asset List, Requirements Matrix, Component Model

Phase: SOLUTION Design

Work Product : Service Model

- Purpose:
 - * Identify a few key services (existing or new) that might be relevant for the project.
 - * Assess how these key services can address important functional and non-functional requirements.
 - * Determine how these services impact the overall Service Oriented Architecture solution.
- Description:
 - * Identify, categorize the set of potential services that are within scope for the solution being proposed.
 - * Refine the set of services to ensure that they meet the requirements of the solution.
 - * Finalize the list of services that are within scope and create an architectural view of the services and their relationships.
- The primary output work product from this task is: SOA 101 Service Model
- The Service Model captures multiple elaborations of services. The first elaboration begins as a list of candidate services in the Service Portfolio created during service Identification activities. As soon as possible services in the list are organized into a hierarchy using a functional classification scheme (typically based on functional areas identified during domain decomposition). As additional information becomes known, the Services Portfolio is extended with additional attributes that show the mapping of services to business functions, goals and assets.

Phase: SOLUTION Design

Task : Develop High Level Component Model

▪ Purpose :

- Describe the high-level structure of the system
- Describe precisely the responsibilities, relationships boundaries and interactions of components
- Document how application/technical parts of the system are related

▪ Description :

- This task will help identify important information about components for the proposed system by creating a component model.
- Components depict the major subsystems and boundaries (interfaces) of the overall system.
- Components are described by responsibilities, required service levels, performance, capacity and availability.

Work Product Started : Component Model

▪ Purpose :

- Help define and document the structure of a particular IT System.
- Document the recurring interactions and dependencies between particular sets of components.

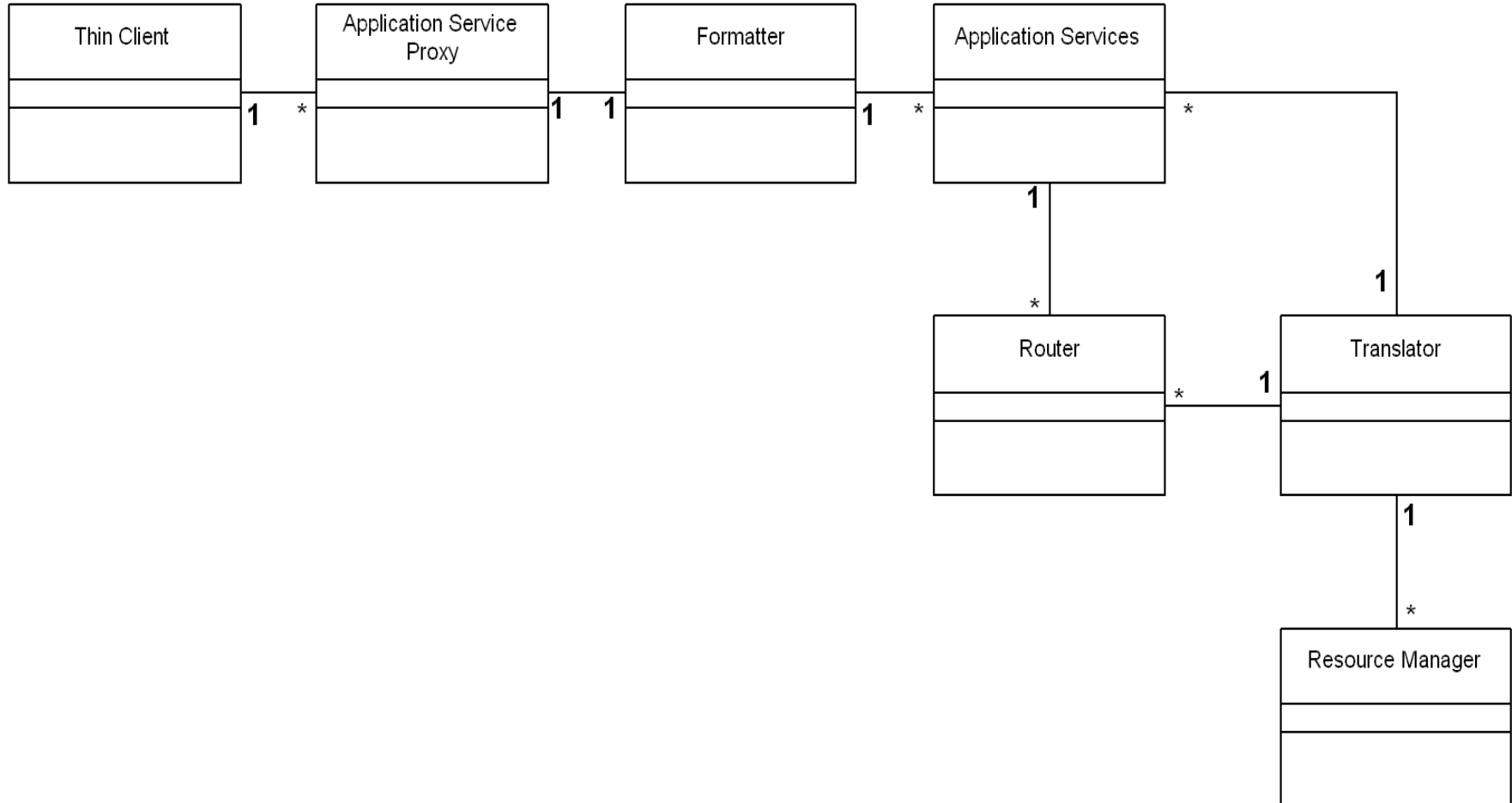
▪ Description :

- The component model work product describes the structure of an IT System in terms of its software components with their responsibilities, interfaces, (static) relationships, and the way they collaborate to deliver the required functionality.

Work Product Input/Updated : Component Model, Architecture Overview Diagram, System Context

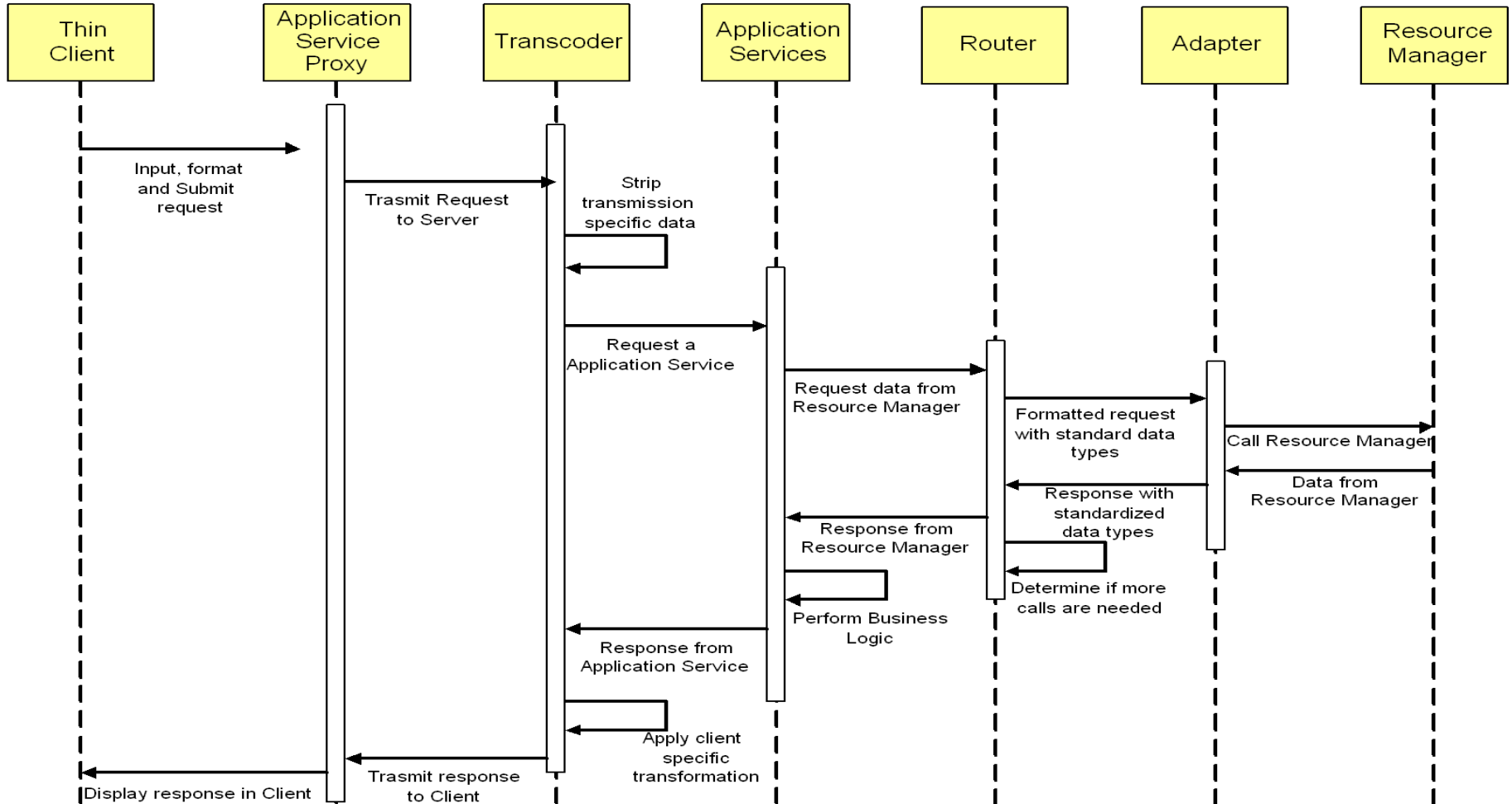
Phase: SOLUTION Design

Work Product : Component Model



Phase: SOLUTION Design

Work Product : Component Model



Phase: SOLUTION Design

Task : Develop High Level Operational Model

▪ Purpose :

- Develop a preliminary view of the system for use in understanding customer requirements and general architectural approaches.
- Gain understanding of major elements of the IT system to be built such as primary system nodes, connections, locations, major components (including technical infrastructure) and existing assets to be reused.

▪ Description :

- Develop a System Topology diagram (one or more) that shows the topology and geographic distribution of the system,
- Develop a set of node descriptions which include applicable nonfunctional requirements, and an inventory of components (grouped as a deployment unit) that will be deployed on this node.

Work Product Started : Operational Model

▪ Purpose :

- Illustrate major elements of IT system to be built such as primary system nodes, connections.
- Provide a mechanism for early discussion regarding functional characteristics of the system by enabling basic design walkthroughs.

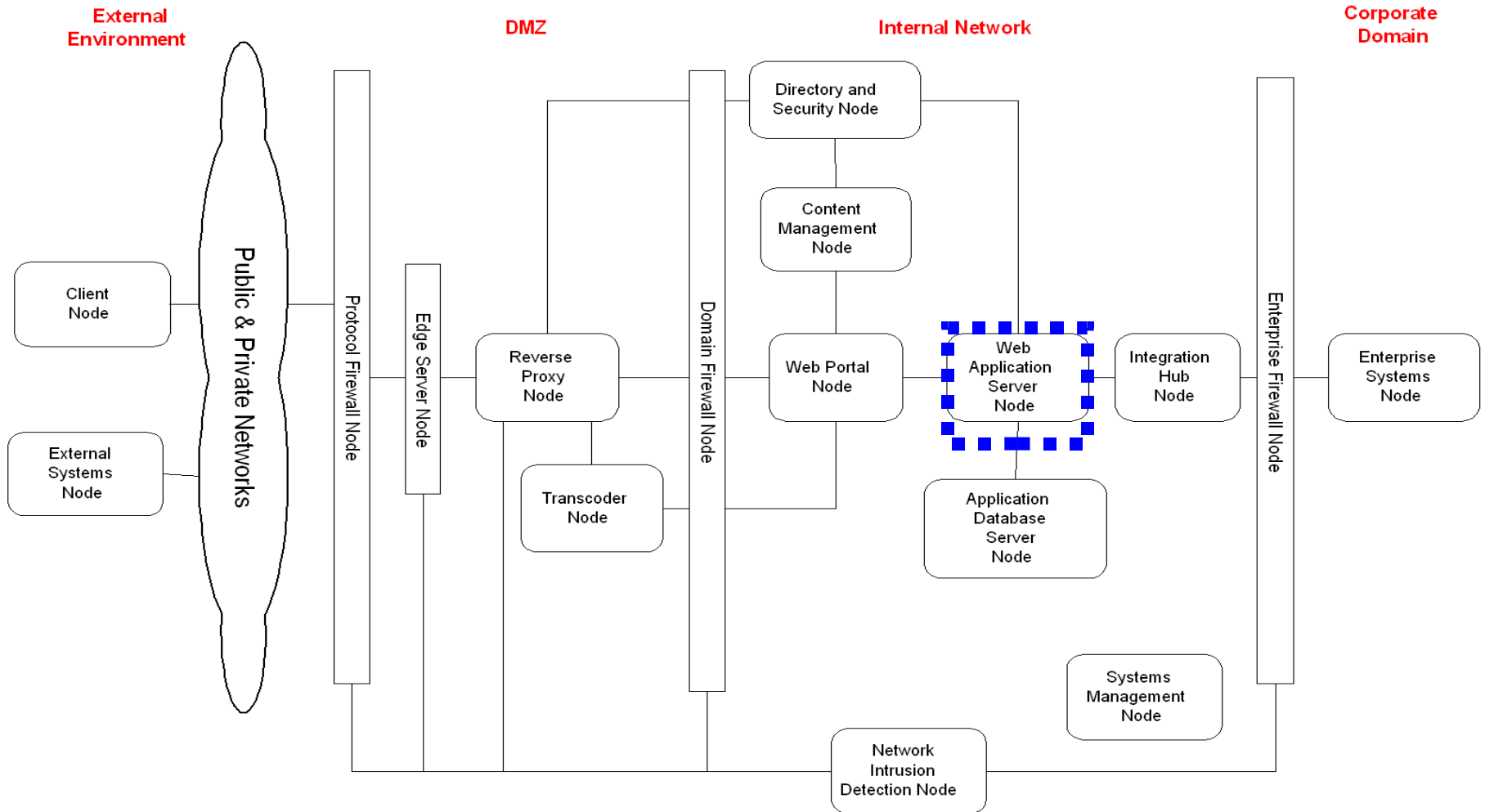
▪ Description :

- The Operational Model may include a system topology diagram, a set of node descriptions, an inventory of components (grouped as a deployment unit) and a description of connections arranged as a table or matrix.

Work Product Input/Updated : Operational Model, Component Model, Architecture Overview, System Context

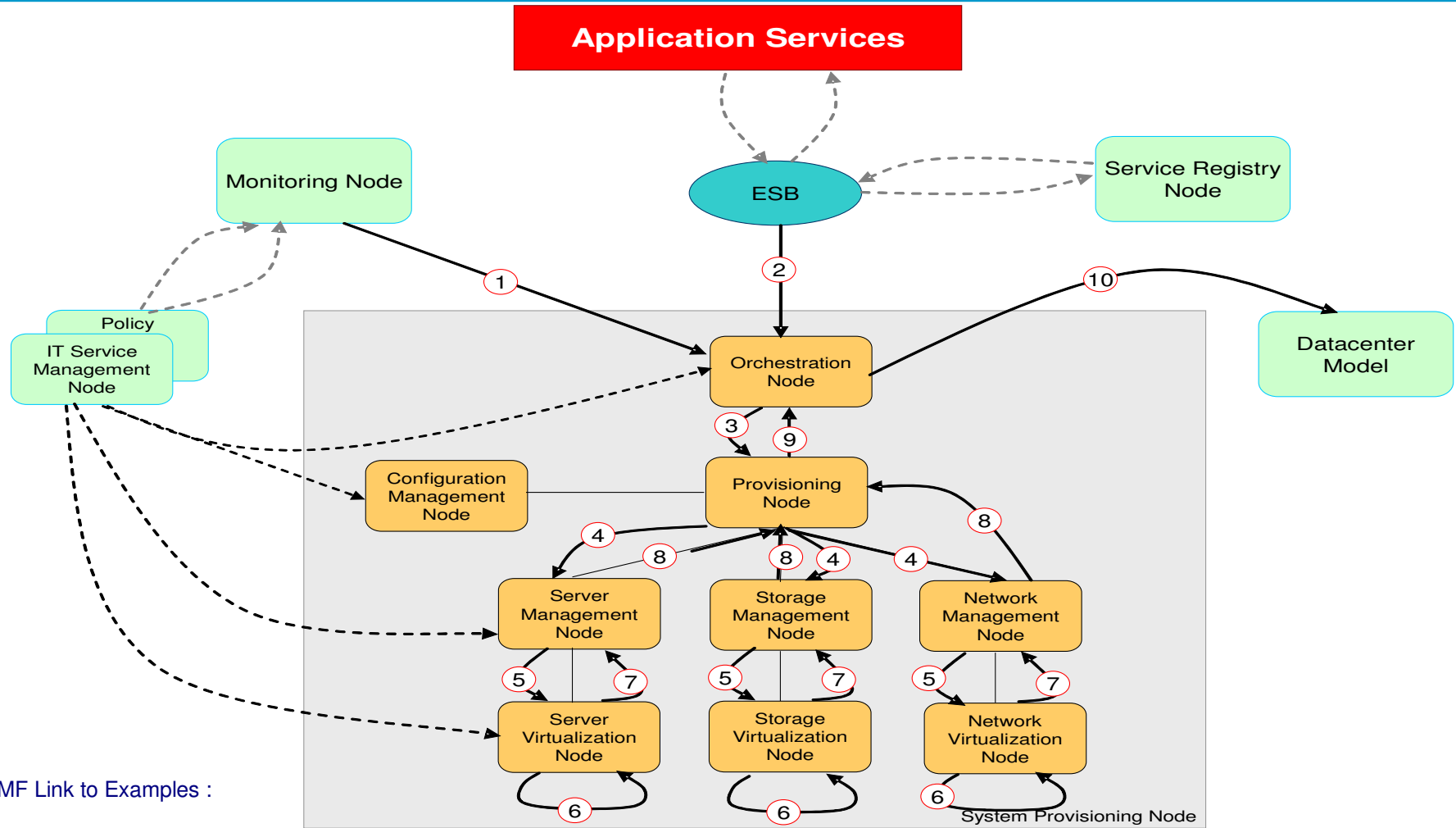
Phase: SOLUTION Design

Work Product : Operational Model



Phase: SOLUTION Design

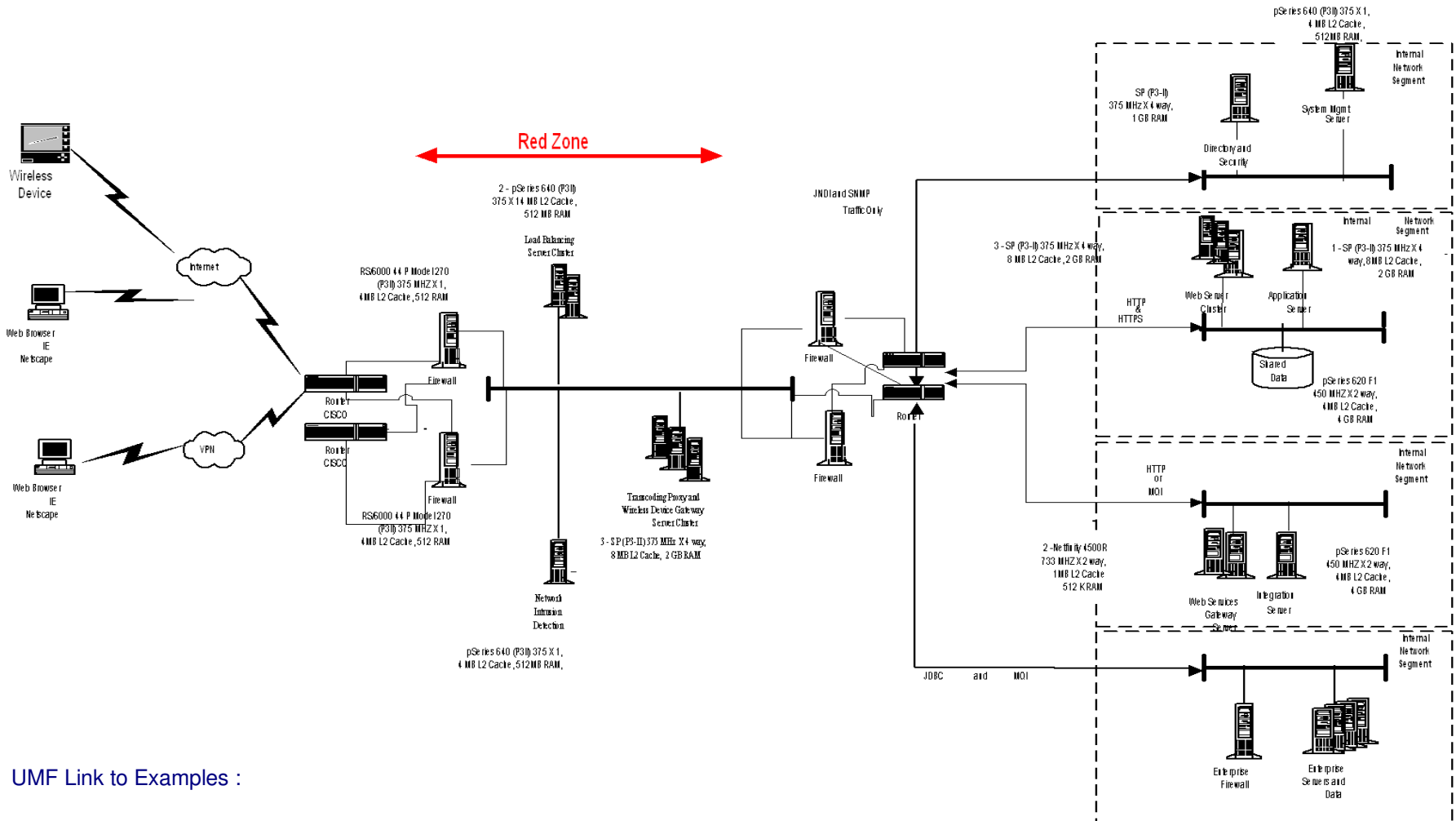
Work Product : Operational Model



UMF Link to Examples :

Phase: SOLUTION Design

Work Product : Operational Model



UMF Link to Examples :

Phase: SOLUTION Design

Task : Refine Viability Assessment

- **Purpose :** Although continually done, an "official" Viability Assessment:
 - Ensure that the solution still lies within the "art of the possible".
 - Identify unrealistic or challenging requirements, and re-negotiate them.
 - Evaluate the business and organizational impact of the solution.
 - Review the solution uncovering any risks that can't be mitigated.

- **Description :**
 - Review the current project work products. Use peers and other experts to review work.
 - Update the Viability Assessment based on the most complete and recent information.
 - A prototype, Proof of Concept or performance test may be required to validate the solution.
 - Identify any significant risks and issues.
 - If very serious inhibitors to success are discovered, reconsider the whole approach to the project.
 - Re-iteration of previous tasks may be needed.

- **Key Considerations:** Besides capturing project risks, the "IBM Solution Design Method" version of Viability Assessment documents issues, assumptions and dependencies (RAID log).

- The next chart shows when the various "proof of capability" activities are usually performed.

Work Product Input/Updated : Project Definition, Non-Functional Requirements, Viability Assessment

Phase: SOLUTION Design

Task : Evaluate Integrated Solution

▪ Purpose :

- To formally review the entire technical solution before it is proposed to the client.
- To assess the likelihood that the client will agree to the solution.
- To evaluate if it will be successful in meeting the client's success criteria.

▪ Description :

- One or more Technical Delivery Assessments (or Solution Assurance Reviews) are performed to assess major portions of the solution
- Project Definition and Viability Assessment are mandatory work products for these reviews.
- Other work products will be needed to explain the proposed solution and how risks will be mitigated.

▪ Key Considerations :

- For pre-sale solution design, ensure that the proposal is technically viable.
- Provide just enough detail to assure the client that requirements are understood and solution will address them.

Work Product Input/Updated : Project Definition, Non-Functional Requirements, Viability Assessment

Phase: SOLUTION Design

Work Product : Estimation Report

- Purpose:
 - * Develop estimates for hardware, software and technical and non-technical effort for the purpose of developing a solution proposal for the client.
- Description:
 - * Evaluate type of estimates required and select estimating approach
 - * Estimate project schedule and resource costs
 - * Estimate hardware and software costs
- The primary output work product from this task is: Estimation Report (ART 0533)
- This work product documents the results of following the estimation process by recording the values of the estimate, along with the approach used in creating it, at each governance point. The estimate itself is created using the standard templates, tools, or models chosen by the project team.
- It provides a historical record of the estimates and approaches with traceability and accountability on a project and can be used as:
 - * Basis for comparisons on future estimates and projects
 - * Key inputs to improving overall estimating processes

Phase: SOLUTION Design

Task : Propose Solution, Resolve Concerns

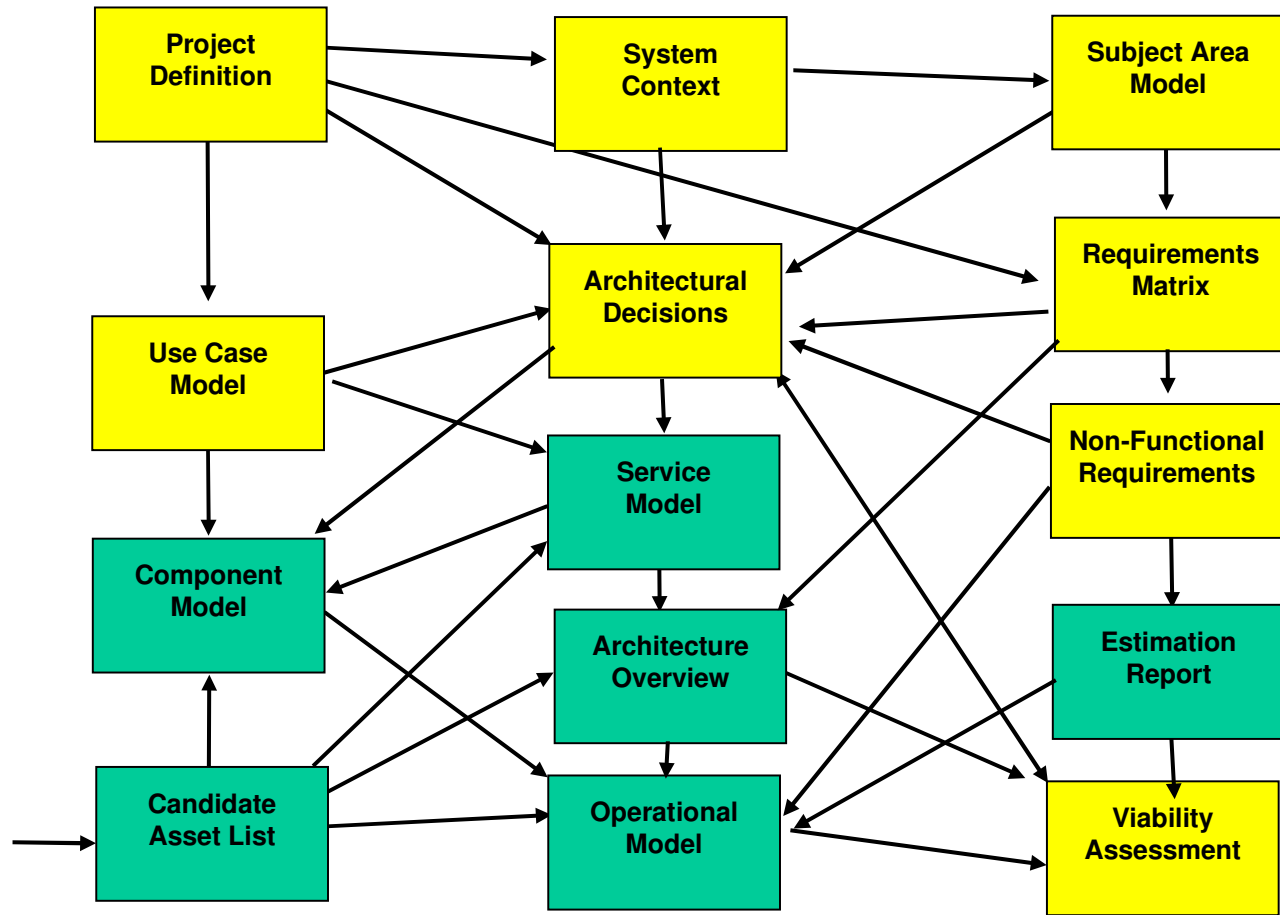
- **Purpose :** to ensure both the customer and IBM reach final agreement on how the solution will be implemented. The outcome of this activity includes a final proposal and a signed agreement.
- **Description :**
 - A review of the entire proposal including non-technical aspects.
 - If the project is large and complex, then a Proposal Baseline Assessment will be completed.
 - Technical Delivery Assessments (or Solution Assurance Reviews) and the Integrated Technical Review will be input to the PBA.
 - Client concerns might cause a change in scope or the phased implementation.
 - Changes will require a careful review to ensure that we have a viable project with value to the client.

Work Product Input/Updated : (ALL)

Summary - Design Principles

- 1. IBM Solution Design Method Activities drive design process. Work products should not drive process.**
- 2. Work product input should be captured when you get it -- you rarely control timing.**
- 3. Each work product has many inputs and is input to many others. Only primary inputs shown in teamroom.**
- 4. Each work product goes through multiple elaborations -- by you or others before and after the solution is "sold".**
- 5. Some work products have multiple views (e.g., AOD), some are for a specific audience (e.g., Component Model for developer).**
- 6. IBM Solution Design Method allows trace-ability of each decision back to requirements.**
- 7. IBM Solution Design Method encourages the reuse of assets where possible.**
- 8. IBM Solution Design Method adds value/framework for partial or brief activities (or part of the solution for specialists).**
- 9. IBM Solution Design Method will continue to evolve to meet our needs.**

Work Product Dependency Diagram



Assets
 Reference Architectures
 ITT Solution Brief, Patterns
 Redbooks, etc

