IT Services Management

INFRASTRUCTURE ARCHITECTURE PLANNING
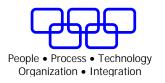
Service Brief

Prepared by:
Rick Leopoldi
August 4, 2009

TABLE OF CONTENTS

People • Process • Technology
Organization • Integration

INTRODUCTION

At present, companies are exploring radical changes to the ways they do business. Major advancements in technology, especially in networking and telecommunications, have had a large impact on virtually eliminating distance and time barriers. These advancements has been able to provide most companies with the opportunity to enable 24-hour operations on a global scale giving rise to business processing and competition in an international arena.

This has generated customer demands to provide the highest quality of service and specialized products that has necessitated new, service-oriented organization structures with a major focus on business requirements and processes. These demands have led to a number of trends in the information processing business for most companies such as down-sizing, client/server model, business process re-engineering, outsourcing, open systems, high speed networks, and strategic planning across multiple platforms.

The old information services model that has evolved over the past 40+ years is no longer capable of adapting to the current pace of change. This model was characterized by:
- Vendor-determined architecture or "product-ecture"
- Vertical or "Stovepipe" applications
- Technology driven versus business driven innovations
- Limited automation implementation with fragmented information
- Difficulty in setting and enforcing standards

Most industry analysts agree that linking business strategies, people, processes and IT is one of the most challenging problems facing most businesses today.

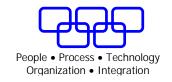## DESCRIPTION OF THE SERVICE

In order to survive and attain competitive advantage, business enterprises must adapt to change rapidly and as effectively and efficiently as possible. Infrastructure Architecture Planning was developed to meet these clients' business requirements. This service integrates strategic business planning and technology planning into a single framework to establish an enterprise-wide infrastructure architecture that enables and supports a client's business functions.

Infrastructure architecture planning is an on-going process, not a single static concept, that:
- Starts with a business and an end-user focus
- Provides evolutionary transition phases to a selected business and technology environment
- Is driven by both short- and long-term business plans
- Identifies standard platforms, terminologies, and technologies

It is a methodology for identifying and documenting current business and infrastructure environments, projecting information requirements to meet planned business needs, and providing logical transition planning for migrating to the target environment. Throughout this planning process, together with the client it will be jointly determined:
- How well current infrastructure architecture meets the objectives of the client's business operations,

People • Process • Technology
Organization • Integration

- What infrastructure architecture best meets the requirements of client's long range business plans,
- The best transition strategy to migrate from the current business environment to the planned business environment.

This methodology specifies the elements of the client's target environment infrastructure technology architecture in the form of **templates**. During the delivery of this service, templates will be developed for each of the following target environment elements:

- End-User Services Architecture - defines major, common applications and infrastructure technology tools needed by various classifications of end-users throughout the enterprise. This includes standards and specifications for:
  - Desktop processing
  - Infrastructure delivery strategies and devices
  - End-user interfaces
  - End-user service classifications
  - User, i.e., infrastructure, applications and tools
- Data Architecture - identifies and defines properties of major categories of data that are inherent to the enterprise business functions. This includes standards and specifications, by data category, for:
  - Logical and physical data locations
  - Data properties
  - Data base affinity
  - Data base management
- Server (Processor) Architecture - specifies the logical and physical hardware and software capabilities for business function servers. This includes standards and specifications for servers at each of these business levels:
  - Desktop
  - Work group
  - Department
  - Enterprise

- The standards and specifications for each business server level that includes attributes, connectivity requirements, application dependencies and characteristics, and performance characteristics, e.g., price/performance ratios, and capacity

- Communications Architecture - identifies and defines the connectivity requirements for all servers and end-users to support an enterprise-wide network of data sharing. This includes standards and specifications for logical and physical hardware and software capabilities for the communications network including:
  - Topologies
  - Protocols
  - Bandwidth and capacity requirements
  - Media requirements and assumptions

- Application Development Architecture - identifies and defines standards for methodologies, tools, software engineering, and infrastructure. That includes the following:
  - Development
  - Maintenance and enhancement

People • Process • Technology
Organization • Integration

     - Application programming
     - End-user programming

- Operations, Administration, and Management Architecture - identify and define requirements for managing across a multiple platform-computing environment. This includes standards and specifications for logical and physical capabilities relating to:
    - Security
    - System management
    - Network management
    - Production control
    - System support
    - Environmental factors

- Organization-Ware Architecture - identifies requirements for skills and training necessary for the client in the target environment. This includes any appropriate changes that may be required in the organization culture to help ensure the target environment implementation to be successful.

Objectives

The objective of the Infrastructure Architecture Planning Service is to develop a business and technology based *information architecture* for the client. This information architecture must be fitting, suitable, and sufficient to both enable and support specified future objectives and operations of the enterprise. A second objective is to develop a transition strategy and plans for moving from the current environment to a future, target environment.

The *transition plan* will be designed to be implemented immediately, such that little or no intermediate planning steps should be necessary. It will be based upon a change management strategy for the transition effort, and it will be presented as a series of detailed tasks, with rigorous interrelationships, interdependencies, time lines and milestones. In addition, it will provide the best effort estimates of resource requirements for each task.

Methodology

Infrastructure Architecture Planning uses a four-phase approach:
- Phase I - Project Infrastructure
- Phase II - Baseline Assessment
- Phase III - Target Architecture
- Phase IV - Transition Planning

Each phase consists of multiple tasks and concludes with an executive review session. This enables a phase checkpoint, to ensure that the phase activities are complete and to prepare for entering the next phase.

Phase I: Project Infrastructure

Establish Client Core Project Team - The core project team consists of the client project manager, and one or two additional people who will be on the project throughout the project life cycle. The client and the Service

Provider will jointly agree the exact number of people on the project team. These people must have an overall understanding of the business (extensive knowledge is preferable to intensive) and should know what tasks are performed by which organization functions. In addition, they must know who in the organization will have the information necessary to complete the project. They will have primary responsibility for liaison with other client's organization entities when needed.

Establish Steering Committee - The steering committee should consist of management representatives of the client business functions that have major influence in infrastructure technology decisions. They have such influence, either because they are users of the technology, or because they provide strategic direction for the business. Their role will be to review project progress periodically and to insure that their respective organization functions' needs are met by the target architecture.

Identify Additional Project Team Resources - The additional project team members should be those with specific subject matter expertise relevant to project tasks.

Refine Project Plan - After the steering committee and project team resources have been identified, the project plan will be revised to insure compliance with business operations and individual schedules.

Checkpoint - The revised project plan will be presented to the executive sponsor for review and approval.

Phase II: Baseline Assessment

Assess Client Strategic Plans - The project team will review the client's strategic plans and vision documentation to ensure: (1) that such plans have been made and approved; (2) that a viable target time frame has been defined; and (3) that business objectives have been defined in sufficient detail that an infrastructure architecture can be defined.

Develop Current Business Model - The project team will develop a functional specification of the current client business organization.

Assess Current Infrastructure Technology Resources - The project team will assess how information technology is used, extensively and intensively, for each of the client's business functions.

Checkpoint - The Enterprise Information Business Baseline will be presented to the executive sponsor and steering committee for review.

The tasks in Phase II construct an Enterprise Infrastructure Business Baseline that specifies, in detail, the current business environment. It provides primary input to the development of the target architecture and transition planning that occurs in the next two phases.

Phase III: Target Architecture

Develop Enterprise Information Business Model (EIBM) - This is an organization-entity model representing how the client will be structured in the target environment. It is developed from the client's strategic plans and business vision statements. This model provides the basis for specifying the information technology architecture necessary to enable and support this target business and environment.

People • Process • Technology
Organization • Integration

Develop EIBM Information Architecture - This information architecture is an array of architectures of the following components: end-user services; data; server; communications; application development; operations, administration and management; and organization. These architectures will be thoroughly interrelated with each other and the EIBM.

NOTE: The EIBM Infrastructure Architecture will be specified in the form of **templates**. Each template will specify the requirements, functionality, and characteristics of each architecture component, and how they interrelate to other components.

Checkpoint - The Enterprise Information Business Model and Infrastructure Architecture will be presented to the executive sponsor and steering committee for review and agreement that they are compatible with the client's strategic plans and business vision.

Develop Technology Options - After executive approval of the target business and infrastructure architectures, this next task is to assess the availability of technology solutions in the target time frame defined by the client. This will include assessing costs and benefits of possible implementation scenarios and developing decision parameters for solutions.

Decision Checkpoint - The technology options will be presented to the executive sponsor and steering committee for review and to decide on an implementation solution.

Phase IV: Transition Planning

Transition planning begins after the target business and infrastructure architectures have been defined and accepted, and the client management has approved an appropriate implementation solution. The approved target infrastructure architecture represents the output design of the transition-planning framework.

The transition-planning framework that has been developed is consistent in the areas of terminology and specification across the existing and target environments. This is necessary to help ensure a viable change strategy and consistency in the transition-planning framework that will be developed.

Develop Transition Planning Framework - The transition-planning framework consists of change and management strategies, that include a critical path action items time line, resource-based Transition Plan.

The Transition Plan will provide a detailed framework for the entire migration process that will enable the client to begin implementation immediately. It is designed to be flexible enough to accommodate any necessary client changes, such as time or resources. In addition, the plan will assist the client in understanding the effects that any changes could have on the entire planning cycle.

Checkpoint - The Transition Planning Framework will be presented to the executive sponsor and steering committee for review and approval.

Produce Final Report - The final report will be a comprehensive summary of the project and a detailed description of the deliverable items.

People • Process • Technology
Organization • Integration

Time Requirements

The total project life time is expected to be between four and six months, depending upon the operational needs of the client and individual schedules during the time frame. This estimate is based upon the assumption that the project team will devote no more than half-time per week to the project activities. Any additional commitment could interfere with the client's business and IT operations, and will thus have an overall negative effect on project progress.

The time commitment for the client core project team is estimated to be between 40 and 60 man-days over the course of the project. The estimated time commitment for other client resources is between 10 and 30 days each, depending upon the needs of specific tasks.

It should be noted that these are estimates only. Actual time requirements for the Service Provider and client resources are subject to the size and scope of the particular project.

The Consultants

The Service Provider has access to an extensive set of resources that specialize in tracking technology trends and futures. These include, but are not limited to, research organizations (e.g., Gartner Group, DataQuest), university research networks, our own research and development organization, and a number of external associates who have expertise in various information systems disciplines.

In performing this project, the Service Provider will include whatever subject matter experts from available sources as is appropriate and necessary to meet the client requirements.

This will be a joint effort between the Service Provider and the client. Each will supply a core project team -- consisting of two to four appropriate client personnel, and two consultants -- for the duration of the project. The client and the Service Provider may each provide additional resources (estimated to be four to six each) according to the needs of individual tasks and subject matter expertise, throughout the project.

Some of the major roles and responsibilities for the client and Service Provider participants in a typical project are described below. Actual staffing of the roles will be subject to mutual agreement.

Client Participants

Client Executive Sponsor

This is a client executive to provide executive leadership for the project and commitment to project success.

Client Project Manager

The primary liaison for coordinating client work team efforts, establishing liaison with other client departments involved in the project, resolving issues, and insuring logistics are provided. They would be the task manager for appropriate client resources required on this project.

©RL Information Consulting LLC

People • Process • Technology
Organization • Integration

Client Core Project Member(s)

The appropriate client personnel with extensive knowledge of most client business functions and how infrastructure technology is used should be included. These members should be dedicated to project activities throughout the project time frame.

Client Additional Project Member(s)

Additional client persons, with particular knowledge about current or planned operations, may be required from time to time, but they will not necessarily have to be active throughout the project time frame.

Service Provider Participants

Service Provider Project Director

A management consultant highly skilled in large account planning, project management, and team facilitation. The project director will have primary responsibility for the following:
- Directing the project flow,
- Enabling all project team planning and working sessions,
- Insuring that technology and architecture subject matter experts are available at appropriate times in the project time frame to address specific requirements.

Project Consultant

A management consultant highly skilled in large account planning and project management will be used. This consultant will be responsible for day-to-day project operations, and will insure that proper resources will be made available and project commitments are completed on schedule.

Technology And Architecture Subject Matter Experts

The Service Provider has a number of internal and external associates who are experts in various technology and infrastructure systems disciplines, with knowledge of both current implementations and future trends. Appropriate subject matter experts will be part of the Service Provider project team as needed to meet specific requirements of the client target environment.

The Service Provider will be receptive to including client personnel and/or recommended external associates as technology and architecture subject matter experts, in addition to their associates.

DELIVERABLES

The following will be the deliverable items of this project:

1) Specifications for the target environment Enterprise Infrastructure Business Model that is a representation of the client's target environment business functions and their data processing dimensions. The data processing dimensions consist of the business-based processing involved in accessing data categories for viewing, altering, or creating. The specifications for the Enterprise

Infrastructure Business Model will be based on the business vision and strategic plans as provided by client and refined during the project.

2) Specifications for elements of the client's target environment infrastructure technology architecture presented in the form of **templates**. Templates will be developed for each of the following target environment architectural elements:
   - End-User Services
   - Data
   - Server /Processor
   - Communications
   - Application Development
   - Operations, Administration, and Management
   - Organization-Ware

3) A Transition Plan to direct the transition from the current business and infrastructure technology environment to the target environment that includes:
   - Detailed descriptions of the tasks to be performed, their resource requirements, the results, and their dependencies
   - A time line showing the order, starting and completion dates, and interrelationships among tasks
   - Resources required by task.

4) A final presentation in a format to be jointly determined.

5) A final report in a format to be jointly determined.

RESULTS OF THE SERVICE

The following highlights the results and client benefits of this service:
- A determination of the extent that the client's IT supports and empowers its business functions. This includes a clear picture of the scope of the client's existing systems and the IT environment required to support these systems.
- A detailed definition of the client's current IT configurations and effectiveness
- A detailed business-based requirements baseline to enable valid comparison of the current IT environment with the target IT environment
- A detailed configuration model of the client's current hardware, software, and telecommunications
- A detailed cost effectiveness profile for technology and personnel
- An established management steering committee for the client's infrastructure strategic planning processes and an established core client project team
- An assessment of the client's existing strategic plans
- Familiarization of the methodology and a knowledge transfer of this methodology from the Service Provider to the client
- A detailed business functional model of how the client is currently doing business at an Operational, Management, and Strategic levels
- A highly specific definition of the client's future IT vision, expressed both in an enterprise infrastructure business model and then as an infrastructure architecture for that model

People • Process • Technology
Organization • Integration

- An effective template methodology for specifying the client's requirements of a complex, multi-platform future IT environment
- A definition of how the client's end-users will do their work in the target IT environment that is based on business and IT requirements instead of technology
- A method for determining where data and the applications that access it, should be placed within the target multi-platform environment such that anyone, anywhere, given the appropriate authority, can access any application and its associated data at any time
- The detailed project plan that describes the tasks to be performed for the transition from the client's current IT environment
- A migration to the target IT environment designed to help ensure an evolutionary transition and provide for minimal disruption to the client's IT and business process functions that is designed to meet the client's current and future IT and business strategies
- Necessary provisions for contingency planning and risk assessment
- Optionally designed to assess the client's organizational effectiveness for operating in the targeted multi-platform IT environment that includes basic, technical, and innovation skills

People • Process • Technology
Organization • Integration