Infrastructure Architecture Principles Template

Client name

Project name

Version 2.0

Authors

[Name]	[Name]	[Name]

Version history

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1. Introduction

The purpose of this document is to provide guidance in formulating and validating a set of principles that will shape architecture decisions and choices about the technical infrastructure at *<Client Name Here>,* including that infrastructure which may be affected by or required to support the *<Project Name Here>* project.

<This document is to be used in conjunction with the Infrastructure Conceptual Architecture deliverable (see B2.11 Develop infrastructure conceptual architecture (optional>

A principle is a long-range guide for the organisation and will change very little over time. Architecture Principles govern decisions made and actions taken by organisations with regard to architecture, technology, configuration, vendors, etc. The development and acceptance of principles then influences the standards selected.

Architectural principles are consistent across organisations and it is best to suggest a list of principles to the client, which are then customised. These principles should support and be traceable back to *<Client Name Here>*'s business drivers, which were derived and documented earlier in the process (see TT5020 Critical Infrastructure Business Drivers Template).

By documenting architecture principles, this document is a key input to subsequent infrastructure architecture development activities [Develop Infrastructure Conceptual Architecture, Develop Future Logical Infrastructure Architecture, Develop Future Physical Infrastructure Architecture], and helps provide traceability of architecture decisions back to the organisation's business needs and priorities.

The scope of this document covers all aspects of the *<Client Name Here>* infrastructure that may be affected by the *<Project Name Here>* project, and is intended to promote consistent technology infrastructure choices that reflect the business context in which the IT program and its underlying architecture exist. It also provides a rationale for setting priorities and selecting options, and helps in developing a consolidated target infrastructure architecture that will support the business organisation for up to the next five years.

2. Architecture principles development process

<The following sections describe activities that are performed, the key types of work products produced, and resources that can be used to support these activities.>

2.1. Architecture principles framework

This section contains a discussion of the conventions and definitional structure used to formulate and organise Infrastructure Architecture Principles for *<Client Name Here>*.

<Architecture principles can be defined and organised in many ways, reflecting different levels of detail and specificity, expectations about how principles will be used, and client preferences for communicating policy and guidance information. The engagement team will need to determine a suitable format and structure for documenting these principles, taking into account the preferences and conditions at <Client Name Here>. Key elements to assess in order to establish the proper framework include the following:

- *Prevailing conventions and formats at <Client Name Here> for documenting policies and guidelines; the team should obtain and review existing IT guidelines/policies that represent accepted reference points;*
- *Scope and boundaries of the infrastructure environment affected by the architecture principles – specific infrastructure domains addressed, local vs. wide area, departmental vs. enterprise vs. extended enterprise;*
- *Level of detail/specificity for the principles, including possible use of a 2-level hierarchy for easier organisation in the event that principles encompass many different topics; the team should keep in mind that architecture principles are meant to provide decision guidance over an extended period, and thus should not be confused with specific vendor, product, or technology standards information that is subject to frequent and recurring change within an interval of months.*

The following is an example of a set of architecture principles applicable to the network domain. It reflects a particular format and notational convention.

Guiding principles for a Network Architecture

Principles	Definition
Manageables /Simple/ Supportable	All solutions should strive towards simplicity as long as it meets the business requirements.
End to End Management	The ability to measure and manage relevant network metrics from a business service perspective.
Cost Effective	Achieving cost efficiencies across people, processes and technologies
Tiered Service Levels	Differentiated levels of products and services are provided based on varying customer needs.
Managed Technology Lifecycle	Technologies within the NTS portfolio are appropriately introduced and sunset.
Adaptable/Scalable	The network infrastructure will be capable of supporting new services with minimal or no change, will accommodate growth seamlessly and allow faster integration of new technology.
Highly Available Backbone	The infrastructure is architected and managed to ensure an appropriate network availability.
Appropriate Security	The ability of the infrastructure to provide levels of protection of business and personal information form unauthorized access.
Network Disaster Recovery	To ability to have the network support business continuity plans by providing disaster recovery as a network service to SunTrust.
Qualified Access	Achieving cost efficiencies across people, processes and technologies Rules, governance and controls are developed and implemented to certify network access are within the purview of NTS.
Single Protocol Backbone	The network protocols should converge into IP only with some exception of IPX in campus distribution networks.
Corporate-wide Standards	Uniform architecture standards, principles and blueprints mandated b the Enterprise Architecture Board and within NTS.
Defined Interface with other Technology Areas	The ability of the system to allow for new or existing components to be efficiently integrated with internal and external services.
Tiering of Sites	The ability of the infrastructure to work independently within the core, distribution and access layers of the communication architecture.

2.2. Draft principles

<Using the framework and conventions outlined in the previous step, the team will draft a set of principles that addresses the domain and topic scope of the infrastructure project in question. It is advisable for the consulting team to begin with a set of commonly accepted guidelines and adapt them to the client's situation and needs, as a way to accelerate the development process. Successive iterations will lead to a suitable customised set.

In drafting and customising the principles, the engagement team will need to draw from key inputs that include the following:

- *Business drivers for <Client Name Here> (see TT5020 Critical Infrastructure Business Drivers Template);*
- *IT and infrastructure requirements for <Client Name Here> – these may be documented only at a high level at this point in the process; as they are detailed and refined during the Design stage, the team should review the principles and make appropriate refinements in the event of substantive additions or changes to the requirements profile;*
- *Existing planning/policy documents at <Client Name Here> – e.g., IT Strategy guiding principles, decision-making/project evaluation guidelines and criteria – that can shed light on the client's priorities (e.g., relative importance of customer service vs. cost-efficiency), approach to technology sourcing (e.g., preference for single-vendor vs. "best-of-breed" multi-vendor solutions), etc.*
- *repositories of infrastructure architecture best practices and relevant reference points or examples>.*

2.3. Validated principles

<An important step in completing the architecture principles development process is to validate the principles with the client, including IT planning staff, architects, and possibly key "IT-intensive" users within the business areas. This accomplishes two results:

- *Demonstrates that the team has achieved a good grasp of the client's needs and priorities;*

- *Obtains client buy-in at an early stage of the guiding principles that will drive architecture and technology infrastructure decisions, which will later help achieve client acceptance of the team's architecture recommendations>.*

<In addition to listing them, in some situations it may be valuable to assign priorities to the principles. These priorities should be assigned (or at least validated) by the client>

2.4. Architecture principles correlated to business drivers

<In some instances, and depending on the time allowed and the analytic rigor expected from the architecture effort, it may be advantageous to provide explicit linkage between the architecture principles and the previously documented business drivers. This provides traceability to ensure that the Enterprise Architecture is driven by the business needs.

One technique to accomplish this correlation is the Quality Function Deployment (QFD) analysis. Under this technique, each QFD transformation correlates a set of "what's" (left side) to "how's" (upper side). By starting from the business drivers, it is ensured that the resulting artifacts are ranked according to the business needs. Correlations and weightings provide a means of evaluating ideas and suggestions in a manner that encourages participation. The output of each matrix provides the input for the subsequent iteration, thus maintaining a strong link to the original set of requirements.

The following diagram illustrates at a high-level a QFD analysis for network architecture [additional details on QFD can be found in a separate technique paper – TBD]>

Quality Function Deployment Enables Transformations from "Whats" (Drivers) to "Hows" (Enablers). By Initiating the Analysis from Business Drivers, All Enables will be Ranked in the Order they Support the Business

Based on value economics theory, helps in the translation of customer needs into enables.

Correlations and weightings provide a means of evaluating ideas and suggestions in a manner that encourages participation.

The output of each matrix provides the input for the subsequently iteration, thus maintaining a strong link to the original set of requirements.

Architecture Principles

- Differentiate organisation from competition using technology
- Expand and "professionalise" the sales force
- Develop and implement an enterprise wide technology architecture
- Collect, organise and manage raw data to maximise business value, data mining (e.g., internal,value added provider, improve document managing)
- Optimise quality of service (web site, single invoice, automate calling centre)
- Provide and expand 3party servicing (Archimedes)
- Implement a customer information repository, being customer focused
- Develop and implement an IT methodology and approach for systems selection (COTS for private credit) and custom development
- Maximise campus "terminal connections"
- Reduce operating costs
- Monitor and possibly expand investment in technology fund

Business Drivers

- Grow loan volume
- Leverage the life-long learning trend
- Distance organisation from competition
- Increase market share
- Develop and maintain securitisation market
- Customer intimacy (voice of the customer)
- Reduce loan acquisition cost
- Focus on customer satisfaction
- Implement employee development
- Liquidate GSE status

3. Architecture principles review assumptions

<Optional – Include assumptions that directly drive, or could impact the principles documented for client's environment.>

Use this format for text in this area…

<The following section contains possible additional paragraphs you may wish to include in your document. Use any or all of these paragraphs, or if none, then delete the entire section.

Any of the information below may be provided in a list in the body of this document, as a reference to an appendix, or as a reference to another document.>

4. Additional information

4.1. Acronyms, abbreviations and definitions

<Provide an alphabetical listing of acronyms, abbreviations, terms and definitions needed to understand this document.>

4.2. Open issues and future considerations

<If there are known issues, risks or considerations: describe, give timeframe, possible resolution>

4.3. References and related documents

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5.1. Appendix A – Deliverable sub section heading

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