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IT Service Management

A Practical Approach
To Defining an IT Infrastructure

White Paper

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May 25, 2002

IT Infrastructure Complexity

Today organizations have multiple IT (Information Technology) platforms and many are experiencing difficulties in managing this mixed environment. The extent to which companies have invested (or will invest) in multiple platforms varies, but all will agree it is going to continue, and the management issues are the same:

- to what extent will users make their own platform decisions?
- how many layers of platform will there be (typically two or three)?
- will there be different strategies for locating an application to a platform, as opposed to strategies for locating data to a platform?
- must applications and the data they need be located on the same platform?
- what level of portability for applications and data, platform to platform, is required?
- what "blueprints" or "templates" will be needed to describe and manage each platform in the total systems infrastructure?

Some companies assume that their multi-platform environment will simply be two tiers, mainframe/workstations, mainframe/servers, or servers/workstations. Others assume an three tier with mainframe, servers, and workstations. Clearly with the architecture of LAN's and WAN's, distributed systems as simple as a network of workstations can be a reality. Typically one or more of the workstations is designated as a server, or a gateway (or both), and devices such as printers are shared. This serves to show that even where a company believes it has correctly worked out the content of its platforms, they must be periodically reviewed. The technology available moves at a bewildering pace.

Regardless of the number and content of the platforms, most companies will have striven to set some standards with relation to servers and workstations. While these can serve as a useful adjunct to systems architectural standards, they are not the same thing. Very typically, but not always, there will be standards for which hardware and software is recommended at these levels. These are standardized because of the costs involved, and the users' inability to make these acquisitions without corporate IT involvement. Standards of this kind however do not usually address issues of "on which platform should a given application or data base be located?". At the workstation level, many organizations have "preferred hardware" and/or "preferred software" standards but these again do not address inter-platform architectural issues. Historically it is been shown that it is relatively easy, in most companies, to circumvent the "preferred" standards.

Given the existence of multi-platforms and the need to effectively manage them, IT in most organizations is faced with developing an architecture that provides the following basic promise:

> ***Anyone, anywhere in the organization, assuming they have appropriate authority, can get to any application or any data; regardless of where the person accessing them is located and regardless of where the application or data is located***

This target goes well beyond the concept of standards for hardware or software technology. It has to embrace interface perspective issues such as people, process, integration, and organization, in addition to the technology infrastructure. Standards will help and the discipline and rigor provided by ITIL/ITSM is preferred however an organization that does not have them will have even more issues. The alignment between business strategy and requirements is a critical component in defining and developing ITSM methods that includes the various perspectives and subsequently managing IT infrastructure complexity.

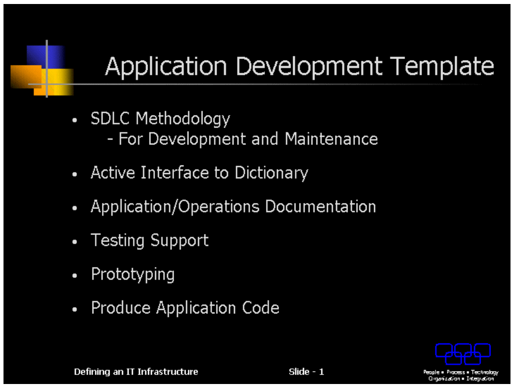
Practical Approach to Defining a Technology Infrastructure

This involves the use of **templates** for defining and developing the managing criteria of hardware, software and functionality of the platforms. The content is based on critical business success factors using ITIL/ITSM principals and methods with the perspectives of people, process, technology, organization, and integration. The content of each template is customer-specific requirements that define what functionality is needed.

Templates for the following core set IT infrastructure components are recommended. They are a good starting point since they encompass a basis of areas of functionality:

- Workstations
- "Departmental" system servers
- Mainframes
- Data base management systems
- Data (Corporate, Public, Departmental, Private)
- Applications development
- Networking
- Organizational

Depicted below is an example of what an Application Development template might look like.



Application Development Template

- SDLC Methodology
  - For Development and Maintenance
- Active Interface to Dictionary
- Application/Operations Documentation
- Testing Support
- Prototyping
- Produce Application Code

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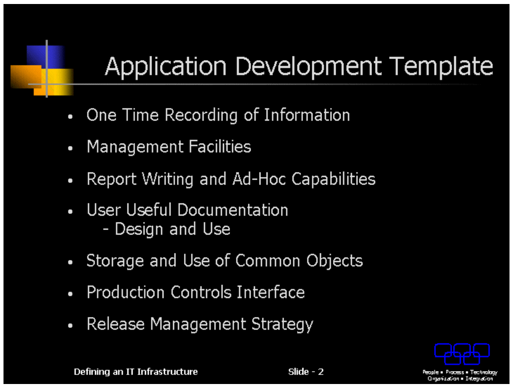

Application Development Template

- One Time Recording of Information
- Management Facilities
- Report Writing and Ad-Hoc Capabilities
- User Useful Documentation
  - Design and Use
- Storage and Use of Common Objects
- Production Controls Interface
- Release Management Strategy

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Necessary input to these templates are:

- Organization, business unit and IT mission statements
- Associated organization, business unit, and IT critical success factors
- Hardware, software, network, and applications technology infrastructure for all appropriate platforms (mainframe, server, and workstation)
- Existing IT processes and methods
- Data modeling and profile information (where appropriate)

The following guidelines should be followed when developing template content:

- It is high level (detailed information can be developed from the templates)
- It will continuously change over time
- Each entry must support a critical success factor of either the organization, business unit, or IT
- There will be overlap between templates and the overlap will change over time

The template approach is a simple yet effective means to manage the multi-platform environment and those developed are unique to the organization's requirements. It should be noted that the templates are not for selecting hardware and software technology infrastructure; it is a support technique to the acquisition process. That is, the templates are used to indicate what functional needs should be available on a given platform for various areas. As a secondary step, there is some consideration of which applications and which data should reside on a given platform. However, the primary purpose is to determine what functionality is needed at each platform layer.