# A BRIEF TOUR OF INFORMATION ARCHITECTURE TERMS AND CONCEPTS

*By Jon Blunt*

The following is a definition of some of the key issues and terms in the field of Information Architecture, starting with "Information Architecture" itself. The list and the definitions are mine. I have no doubt that there are other interpretations and usages, though the ones used here are largely consistent with those used by Digital in its DART[SM] program, and by PRISM[SM].

At the round table we will see how consistent companies are in defining the purpose, scope and structure of their Information Architecture activities.

## Information Architecture

> " If you want to keep a man from starving, give him a fish. If you want to make him independent, give him a fishing rod."

Information Architecture follows a version of this aphorism:

> " If you want to meet a need, build a system. If you want to improve the capabilities of an enterprise, give it a process for deploying better systems faster."

Information Architecture is an enterprise specific framework for deploying information technology to enable the enterprise to build and maintain the strategic capabilities it needs to achieve its mission.

For many years companies have operated without such a framework, with the mode of computing tied to specific proprietary vendor products. The history is not glorious, including as it does both triumphs and disasters. While the triumphs seem to dominate in the long run, transforming the workplace and the structure of industries, each disaster has destroyed a number of careers and created cynicism and distrust of the technology. Overall, the waste of money, people and opportunities suggests that there must be a better way. Indeed, significant new technologies that break many of the old IT paradigms are becoming stable enough for organizations to use in critical applications. If companies are to benefit from these changes they need an information architecture to specify a set of IT capabilities that:

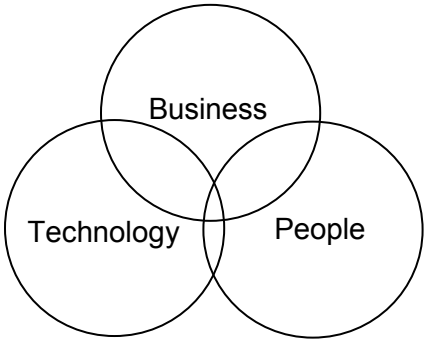
1) the enterprise is capable of developing and deploying;

2) if implemented and used will significantly enhance the organization's capability of achieving its mission; and

3) is consistent with the enterprise's culture and core values.

Recognizing that much of the wasted investment in IT is caused not by the technology itself but by the inability of the organization to change and absorb the process, information architectures tend to take a holistic approach, looking at both the technology and how it will be used, administered, and managed. A distributed database is of no use if the organization has no effective process for ensuring the system is available and accurate.

Additionally, the IA describes a set of processes that can be used to create the capabilities and to integrate them into finished products. This may include conversion or isolation of legacy systems and other strategies for managing a mixed environment.




The concerns covered in an information architecture, therefore, range across technology, people and business domains. These are inevitaably interrelated; changes in one area lead to consequent changes in the others. One of the reasons that organizations have started to emphasize information architecture is the realization that these issues ccn no longer be managed independently, but that there has to be a forum where planning for technology-mediated change can be assessed as an intergated activity.

Yet this large scope is a source of some of the problems information architecture efforts face internally. Most IA projects report to I/S Management and are staffed by I/S professionals, but the concerns of IA range much wider than the traditional mandate of I/S organizations.

## Information Architecture Contents

The basic contents of an information architecture fall into four categories:

**Principles** General rules for making trade-offs and establishing priorities that are of wide applicability

**Models** Determine the vocabulary and structure of acceptable solutions. Can be used to test solutions for conformance to architecture and to predict performance characteristics.

**Standards** Specific protocols, procedures, and interfaces that are used to ensure integrity and high levels of interoperability. Standards can be technical e.g. X.400, organizational processes and procedures, or business rules, e.g. DOD accounting rules.

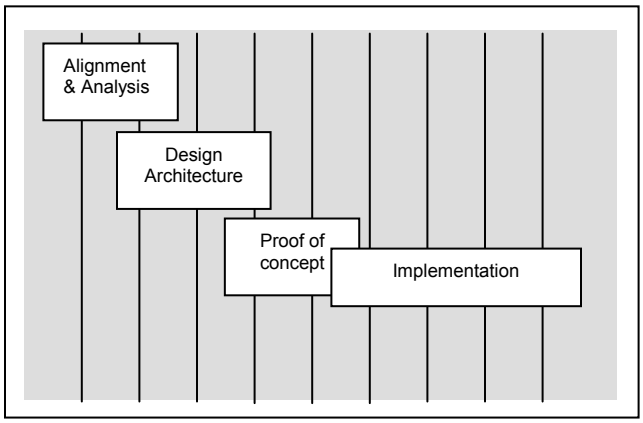
**Inventories** Snap-shot pictures of technology in use that can be used for identifying opportunities capturing current capabilities and migration planning.

Principles are characteristic of architectures that have been influenced by the work of PRISM while other traditions emphasize standards as the core component. In either case, the architecture can be based upon open or proprietary solutions or a mixture of these.

In their architecture work, Digital took the PRISM concepts but de-emphasized inventories. Rather than developing extensive documentation of the existing systems while working on the future vision, Digital scans the existing technology base to identify key opportunity areas and constraints. When undertaking migration planning during implementation these insights are developed into a detailed project plan as the existing systems are analyzed and documented.

## Information Architecture Project Life Cycle

When an organization undertakes the development of an information architecture there are two distinct sets of deliverables. First is the architecture framework itself. A set of principles, models and standards that describe how the organization intends to use IT to enable it to better meet its goals and objectives. Second, there are the systems created by applying this framework as IT investments are made over the years to move from the current status to the new environment. The architecture work is finished when the precepts of the architecture framework have been accepted to such a degree that they have become commonplace and adherence to them can be ensured through the normal processes and procedures of the organization.




These two tasks, design and implementation are linked. The ease of making the transition from current use of technology to the desired modes described in the architecture depends on: the design of the framework, its alignment with current processes, and the investment the organization is willing to make in managing the transition.

The full IA Life Cycle can be described as four phases:

**Alignment and Assessment** Setting the objectives of the exercise, gathering enough information to scope the task, setting up the process for identifying and measuring costs and benefits.

**Design** Creating the architecture framework that captures the high-level priorities and trade-offs that the organization wishes to see carried through into the use of IT.

**Proof of Concept** Working with the framework and designs to confirm their validity to develop an understanding of what programs and changes are needed to get to move through implementation.

**Implementation** Delivering to the production environment business processes and information systems that realize the architecture design.

In reality both proof of concept and implementation phases will reveal information which leads to modification of the architecture framework. However, after the end of the proof of concept the framework should change little if it meets the goal of being robust in the face of technical, business and organizational changes.

## Architecture Layers

There is considerable work in developing a comprehensive framework for the successful mutual adaptation of IT and an existing organization. Currently there is a focus on two areas, reengineering business processes and moving to a new information technology infrastructure that, often, is based on distributed computing and client-server models. These are interlinked. Many of the opportunities to redefine business processes depend upon simultaneous access to real time information, and many of the benefits promised by distributed computing are not obtainable without concomitant changes in business processes and organization structure.

As Information Architecture addresses precisely those issues that inhibit an organization exploiting IT effectively, there will be aspects of IA that speak to both the organization of the technology and people — the hard and the soft infrastructure — and the mapping of that technology onto the business processes. For a large enterprise it is often useful to recognize these two roles and to structure the IA project as two parallel activities: Technical Architecture and Business Architecture.

**Technical Architecture** Describes the infrastructure and how applications can get services from it.

The TA fixes a certain style of technology use for the organization. Some TA's are very prescriptive, leading to a high degree of standardization, while others emphasize the effective management of diversity: giving individuals and departments a range of choices while maintaining easy access to corporate services.

**Business Architecture** Describes the business processes, identifies where technology can leverage these and what information capabilities are required.

Some organizations include in the architecture a detailed description of specific key processes, while others define proto-processes that are templates to be mapped onto specific instances in the organization.

While these activities are often parallel a high level of consistency is required. For example, a technical infrastructure that exclusively focuses on linking the desktop to the enterprise repositories will not effectively support processes that depend upon giving field support equivalent access to those repositories. Looking the other way any feature in a technical architecture that does not support a real business need is gilding on the lily.

Two other levels of description may be needed to fully capture the information architecture.

**Systems Architecture** The systems architecture is the high level description of the design for an application or the information systems component of a business process.

The SA is the link between the architecture and the applications. The SA captures the capabilities and services needed by a function or process and provides a model of how these combine to meet the objectives. In companies where most applications are developed internally this is a key quality control element.

**Product Architecture** The Product Architecture describes the current best tool set that is compatible with the architecture together with guidelines on where and how to use each tool. The PA is a handbook of current best practices and is updated as new technology and products are evaluated.