Introduction

In today's world, change is the only constant, and the ability to manage that change, is the *only* competitive advantage. Success and even survival is dependent upon knowing your enterprise, your stakeholders, your world, and how change affects them all.

Every enterprise has an architecture. Most enterprises simply let their architecture grow and evolve uncontrolled. It is always undocumented and is most often characterized by high maintenance costs, long development cycles, poor quality software, non-interoperable applications, lack of data sharing, limited strategic information, and difficult change management.
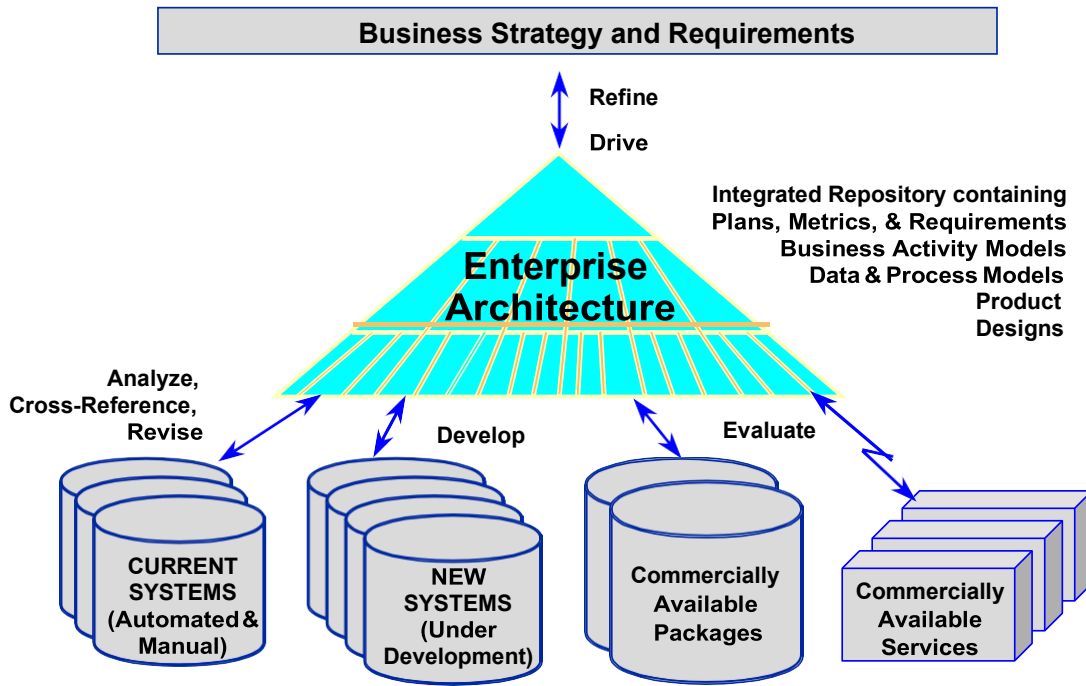
An Enterprise Architecture when properly documented reflects the "business of the enterprise" and becomes a guide for providing the information necessary to manage a successful business and transformation.

What is an Enterprise Architecture?

An Enterprise Architecture (EA) serves as an "business and technology blueprint." It is a repository for designs and specifications of technologies, physical data structures and computer applications, as well as business plans, data models, and process models. Furthermore, it serves as a map of all the linkages among business initiatives, data required to support those initiatives, business processes that use the data, and physical information systems that support data requirements and processes.

It is these links that make the EA a powerful vehicle for business transformation. For example, by providing a complete picture of data and processes – across information systems and functions – an Enterprise Architecture enables the integration between strategy and people, processes and data.

An Enterprise Architecture also enables impact analyses both prior to and during implementation of business or technology changes, to examine potential and actual effects of new business requirements on information resources, and impact of proposed or actual system changes on business plans and requirements. Below is a graphical representation of these various elements and their relationship to an Enterprise Architecture.

Business Strategy and Requirements

Refine

Drive

Enterprise Architecture

Integrated Repository containing
Plans, Metrics, & Requirements
Business Activity Models
Data & Process Models
Product
Designs

Analyze,
Cross-Reference,
Revise

Develop

Evaluate

CURRENT SYSTEMS (Automated & Manual)

NEW SYSTEMS (Under Development)

Commercially Available Packages

Commercially Available Services

How does one go about building an Enterprise Architecture?

What is needed is a set of models that represents an integrated view of National Marker's business with any gaps, redundancies and discrepancies found in the existing applications resolved and documented. The effort involved to build out an Enterprise Architecture involves two main steps.

To accomplish this, two key activities must be set in motion:

1. Build a conceptual model of forward looking, key activities which include business planning, ascertaining business requirements and understanding performance measures.

2. Build a conceptual model of evolving activities which include analysis and documentation of all existing systems, applications and data structures.

The need for a repository tool:

To be most useful, a conceptual model of the business is something that is developed and maintained by a model-based repository tool. The table below illustrates examples of architecture artifacts that can be captured in a conceptual model and managed in an Enterprise Architecture by a repository tool.

	DATA What	FUNCTION How	NETWORK Where	PEOPLE Who	TIME When	MOTIVATION Why
SCOPE Contextual (Planner)	Enterprise Data Dictionary	Functional Hierarchy Breakdown	Locations List	Organization & Stakeholder View list	Business Event	Strategic Plan Goals, CSF etc
ENTERPRISE MODEL Conceptual (Owner)	Enterprise Meta Model	Activities within Function & Costing	Location Hierarchy & Geography	Organization & Stakeholder Hierarchy	Business Event Hierarchy	Business & Operational Plan
SYSTEM MODEL Logical (Designer)	Logical Data Model	Process Model or Detailed Activities	Logical Network Model	Organization & Stakeholder Roles	Logical Process Model or Sequence diagram	Business Rules & Sys Requirements w/ Logical links
TECHNICAL MODEL Physical (Builder)	Physical Database Design	Object model/ Components or structured	Network Design*[3]	Security design for App/DB/Net*[4]	Job Scheduler*[5] & App Modules for Events	Rules for DB/App Components
DETAILS Implemented (Sub-Contractor)	SQL DDL/ DBMS Tables*[1]	Source Code/ Executable Applications	Network Cabling & protocols*[3]	Net/App/ DBMS Security	Scheduled Batch & Online apps	App modules & DB tables, Data and Function Details

The repository thereby becomes the single source for every conceptual model, composite model and report regardless of the tool that is used to create it. For that reason the underlying repository identifies metadata on your Data, Function, Network, People, Time, Motivation.

On the left, you will notice a list of statements, the first of which is "A New Asset is Received". These statements represent business events or requirements. By clicking on a statement (e.g., "A New Asset is Received") you will then see the data and processes upon which the statement depends.

Summary:

An EA enables you to see the relationship between a business strategy and the data and processes upon which the strategy depends. A well-documented EA reveals

- Strategic goals, objectives, and strategies
- Business rules and measures
- Information requirements
- Processes, systems and applications
- Relationships architecture elements
- Technology infrastructure

Enterprise architecture also establishes guidelines, standards, and operational services that define the enterprise's software engineering environment. When an enterprise's architecture is so documented, it can be used to accomplish the following:

- Facilitate change management by linking strategic requirements to systems that support them and by linking the business model to application designs
- Enable strategic information to be consistently and accurately derived from operational data
- Promote data sharing, thus reducing data redundancy and reducing maintenance costs
- Improve productivity through component development, management and reuse
- Reduce software development cycle time
- Evaluate commercial products and services
- Integrate enterprise applications
- Re-engineer applications

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