

The Challenge Is Change

by

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How do you intend to assimilate ever increasing rates of change?

Change is happening. Few thoughtful people would argue with this observation as multitudes of people are being impacted personally as well as organizationally. Virtually every enterprise is being stretched to the limit, attempting to maintain its viability and/or profitability in the face of unparalleled uncertainty and change in every dimension of its environment ... from consumer to supplier, from competition and regulation to its own culture ... and, there is no respite in sight. Credible social and business prognosticators, notably Alvin Toffler (“Future Shock” 1970) and Peter Drucker (“Managing in Turbulent Times” 1980) have been anticipating this ever-increasing rate of change for decades, so no enterprise, no manager, no person should allow themselves to be caught by surprise.

Paradoxically, it seems that few enterprises have developed strategies for addressing change as an issue in its own right, not merely change in its products, but change in the enterprise itself. It can be convincingly argued that unless an enterprise has developed an explicit strategy to accommodate the dramatically increasing rate of change, the enterprise is likely either:

- a. banking on “more of the same” ... that is, depending for survival on working harder and faster, or
- b. hoping beyond hope that some technological “silver bullet” will appear and (mystically) remove the complexity and trauma of assimilating radical change.

Working harder and faster leads to organizational burn-out, and chasing after “silver bullets” only leads to disillusionment, both of which further complicate the enterprise’s ability to accommodate change, neither of which is realistic for addressing an issue of such significance that it effects the very destiny of the enterprise.

There is substantive precedent for assimilating high rates of change.

Learning from Airplanes and Buildings

Conclusions can be drawn about strategies for managing change that are not merely based on theoretical speculation, but on proven experience with how change is managed in complex *physical* products (like airplanes or buildings.) Some substantive effort has been invested in observing the process of building complex engineering products, studying the disciplines of Architecture and Construction as well as Engineering and Manufacturing, with the intent to apply their experience to “building” enterprises. Resident in these older industries is a wealth of knowledge about how to produce relevant, complex products into a dynamic marketplace as well as knowledge about how to maintain and change those products once they are built, even in the face of ever-changing usage requirements and technologies. That is the challenge of the modern enterprise: to be relevant in the context of its dynamic marketplace and to maintain that relevance even in the face of a dramatically changing environment and technological base.

When one applies Architecture and/or Engineering concepts to enterprises, it becomes evident that designing and changing enterprises is not any different and is certainly not any easier than designing and changing buildings or airplanes. As a matter of fact, in both cases, when change is not explicitly anticipated, the result is early obsolescence and the only difference between building or airplane junk yards and enterprise “junk yards” is that enterprise “junk yards” get strewn with people and non-depreciated assets rather than metallic parts and plastic components. This would suggest that an explicit strategy for accommodating change must be defined and employed in order to ensure the life of the complex product (e.g. enterprise) is long enough to recover the investment that produced the product (enterprise) in the first place.

Making Enterprise Design and Change Comprehensible































A useful approach to make enterprise design and change management comprehensive and yet, comprehensible, is to describe the architectural (or, engineering) process, identifying the descriptive representations that are created and used for *physical* products. With this as a basis, it is straight-forward to identify the equivalent process and descriptive representations for conceptual “products” (i.e. enterprises.) It is by no accident that many of these enterprise representations are recognizable as models or, “deliverables” from the process of developing information systems. Furthermore, it is easy to see the logical relationships (structure) of the various descriptive representations of the enterprise and its systems which can be depicted as a “Framework for Enterprise Architecture.” (See Figure 1 below.)

The older disciplines of Architecture and Manufacturing have accumulated considerable bodies of product knowledge through disciplined management of the “product definition” design artifacts from which the Framework was derived. This has enabled enormous increases in product sophistication and the ability to manage high rates of product change over time. Similarly, disciplined production and management of ‘*Enterprise* definition’ (i.e. the set of models identified in the Framework for Enterprise Architecture) should provide for an accumulation of a body of *Enterprise* knowledge to facilitate enormous

increases in *Enterprise* sophistication and accommodation of high rates of *Enterprise* change over time.

The key to accommodating change in the knowledge-based, Information Age enterprise

A FRAMEWORK FOR ENTERPRISE ARCHITECTURE™

	DATA <i>What</i>	FUNCTION <i>How</i>	NETWORK <i>Where</i>	PEOPLE <i>Who</i>	TIME <i>When</i>	MOTIVATION <i>Why</i>	
OBJECTIVES/ SCOPE (CONTEXTUAL) <i>Planner</i>	List of Things Important to the Business  Entity = Class of Business Thing	List of Processes the Business Performs  Function = Class of Business Process	List of Locations in Which the Business Operates  Node = Major Business Location	List of Organizations Important to the Business  People = Class of Agent	List of Events Significant to the Business  Time = Major Business Event	List of Business Goals/Strat.  Ends/Mean = Major Bus. Goal/Critical Success Factor	OBJECTIVES/ SCOPE (CONTEXTUAL) <i>Planner</i>
ENTERPRISE MODEL (CONCEPTUAL) <i>Owner</i>	e.g. Semantic Model  Ent. = Business Entity Reln. = Business Relationship	e.g. Business Process Model  Proc. = Business Process ID = Business Resources	e.g. Business Logistics System  Node = Business Location Link = Business Linkage	e.g. Work Flow Model  People = Organization Unit Work = Work Product	e.g. Master Schedule  Time = Business Event Cycle = Business Cycle	e.g. Business Plan  End = Business Objective Means = Business Strategy	ENTERPRISE MODEL (CONCEPTUAL) <i>Owner</i>
SYSTEM MODEL (LOGICAL) <i>Designer</i>	e.g. Logical Data Model  Ent. = Data Entity Reln. = Data Relationship	e.g. Application Architecture  Proc. = Application Function ID = User Views	e.g. Distributed System Architecture  Node = IS Function (Processor, Storage, etc.) Link = Line Characteristics	e.g. Human Interface Architecture  People = Role Work = Deliverable	e.g. Processing Structure  Time = System Event Cycle = Processing Cycle	e.g. Business Rule Model  End = Structural Assertion Means = Action Assertion	SYSTEM MODEL (LOGICAL) <i>Designer</i>
TECHNOLOGY MODEL (PHYSICAL) <i>Builder</i>	e.g. Physical Data Model  Ent. = Table/Segment, etc. Reln. = Key/Pointer, etc.	e.g. System Design  Proc. = Computer Function ID = Data Elements/Sets	e.g. Technology Architecture  Node = Hardware/System Software Link = Line Specifications	e.g. Presentation Architecture  People = User Work = Screen Format	e.g. Control Structure  Time = Execute Cycle = Component Cycle	e.g. Rule Design  End = Condition Means = Action	TECHNOLOGY MODEL (PHYSICAL) <i>Builder</i>
DETAILED REPRESENTATIONS (OUT-OF-CONTEXT) <i>Sub-Contractor</i>	e.g. Data Definition  Ent. = Field Reln. = Address	e.g. Program  Proc. = Language Stmt ID = Control Block	e.g. Network Architecture  Node = Addresses Link = Protocols	e.g. Security Architecture  People = Identity Work = Job	e.g. Timing Definition  Time = Interrupt Cycle = Machine Cycle	e.g. Rule Specification  End = Sub-condition Means = Step	DETAILED REPRESENTATIONS (OUT-OF-CONTEXT) <i>Sub-Contractor</i>
FUNCTIONING ENTERPRISE	e.g. DATA	e.g. FUNCTION	e.g. NETWORK	e.g. ORGANIZATION	e.g. SCHEDULE	e.g. STRATEGY	FUNCTIONING ENTERPRISE

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Figure 1. The set of descriptive representations (models) relevant for describing an Enterprise, analogous to the set of descriptive representations relevant for describing an airplane, or a building, etc.

lies in the “engineering” discipline for building and managing the enterprise models coupled with the cultural discipline to employ the resultant models in the on-going operation of the enterprise.

In short, there is excellent precedent in the older disciplines of Architecture and Manufacturing that provide guidelines for addressing the challenge of change confronting the modern enterprise. The key lies in producing and managing the descriptive representations of the Enterprise which are analogous to the descriptive representations of any complex physical product, and which are defined by the Framework for Enterprise Architecture. Build models, store models, manage (enforce) models and change models ... the only Enterprise response (with any substantive precedence) to the “Challenge of Change”.

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