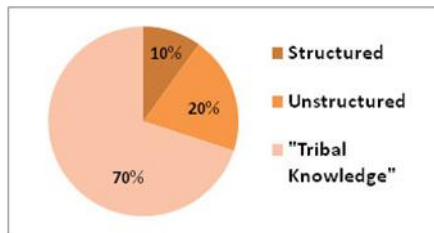# Process Architecture: An Introduction

Processes define how work gets done. In aggregate, they comprise an organization's Process. The Process is important because the quality of the process determines the quality of the organization's product or service. This is a fundamental premise that all quality movements have been based on since Deming's ground-breaking work in the 1940's. The work of an enterprise varies (for example) by division, department, and team, but each unit's work connects[1] with the others to produce the larger outcome. Examples might include:
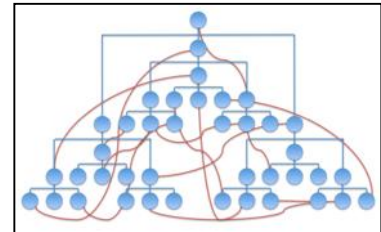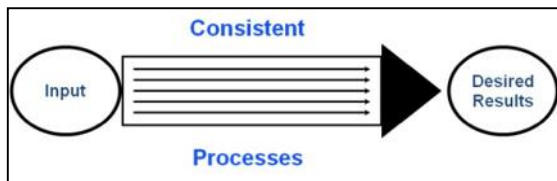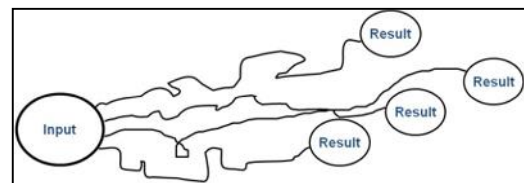
〕 Work in the Value Chain: e.g., sales and marketing, service delivery, R&D/product development, operations, customer service/support.

〕 Management functions: e.g., planning, communicating, overseeing, decision-making, leading.

〕 Support functions: e.g., HR, logistics, facility management, accounting, finance, purchasing, vendor management, information technology.

According to studies by research houses such as Forrester, many organization's so-called processes are in the form of tribal knowledge[2], unwritten norms which are passed on from older workers to newer ones. Rather than a single, authoritative source documenting how to get work done properly, endless meetings, emails, and "mentoring moments" are needed to explain over and over again how things are done. And, just as with the old parlor game, "Telephone," much may be lost or scrambled in passing from person to person!

This informality can result in wildly erratic and unpredictable behavior, which is not conducive to satisfying customer requirements or to attaining profitability. Sometimes, as an organization grows, astute managers will recognize the need to formalize the way work should be done to minimize risks, ensure repeatable outcomes, and maximize profits[3]. These "consistent processes" might emerge from someone's knowledge of recognized industry best practice or from good old trial and error. The documented processes might take the form of policy statements, narrative steps, role descriptions, flow diagrams, swim lanes, etc.

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[1] Graphic Source: I Believe in the Erosion of Hierarchies, Posted on January 3, 2015 by Tom Spiglanin
[2] Graphic Source: PLM IP MANAGEMENT AND TRIBAL KNOWLEDGE, JUNE 20, 2012, Oleg Shilovitsky
[3] Graphic Source: Kaizen Institute, Change requires a sustained process, August 31, 2013

This series of articles assumes that the reader is interested in capturing and publishing repeatable processes that are "fit for use," and that actually get used because they are usable (a trait we will explore as the series unfolds!)   If you do not share this interest, stop reading now! You can use the time you will have saved for adding to the stockpile of mediocre process verbiage!

What is Process Architecture?

As you can probably tell from the previous paragraph, or if you have ever heard me speak on this topic, this series of articles deals with a subject about which I am passionate: Process Architecture. By
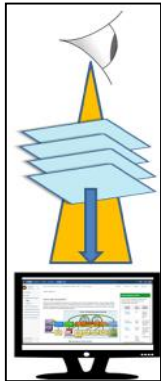
"process architecture" I mean *the design of an organization's set of standard processes, expressed from multiple viewpoints.* During my consulting career, I've seen many published processes that fall far short of serving their intended purpose, that being: to guide the organization's workforce in producing the right goods and services, at the right price, with high quality and minimal rework.   I have seen only a few "process systems" that truly served this purpose, and each of these was based on a thoughtfully-conceived process system design. Just as with any application system, a working process system must consider both execution-level and end-user viewpoints, as well as various engineering viewpoints. My aim in this series is to discuss these viewpoints and provide guidance for taking them into consideration when designing your process system.


"I'll go talk to the stakeholders and find out their requirements... in the meantime, you guys start coding."

But first, I need to set the stage and focus on architectural principles, because I know that many readers of this series will be recovering code slingers who can't resist diving in and drafting swim-lanes, cranking out process prose and letting the system take its broader form organically. Whoa! Let's first consider crafting the architecture of a usable process system!

Process Architecture and Design

Where process is concerned, there is a distinct difference between the **what** (the process) and the **how** (the process architecture). One of the hazards of formalizing process is a natural tendency to focus first on *what* process to capture, publish, and enforce. There may be a sense of urgency behind this focus because the process being practiced today is entrenched and very ineffective. There are many different approaches for assessing, investigating, understanding, capturing, and improving processes ([TQM](), [BPR](), [BPM]()…). Some schools of thought advocate capturing the process "As Is" and arriving at the "To Be" process in an evolutionary fashion. Conversely, there

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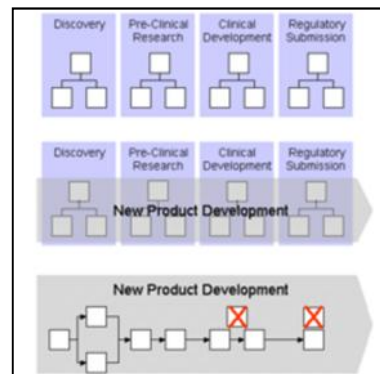
[4] Graphic Source: Wikipedia (https://en.wikipedia.org/wiki/Business_process_reengineering#cite_ref-12); Guha et al, 1993

are those who caution about the dangers of incremental, continuous process improvement and others who warn of the risks associated with wholesale process reengineering.   It goes without saying that the core of process management lies in understanding the organization's business goals, market position, strategies, current results, and driving functional/physical changes to the process as practiced to improve and document the process accordingly.

However, in this series of articles I want to focus on the *how* –which is applicable in a general sense to all process initiatives, but sorely missing from the majority of them. Expressed as a challenge it is this: <u>how to make sure the process is represented, captured, and ultimately made accessible and easily referenceable by the process users at exactly the right time, i.e. when the actual work is being done</u>.   Process architecture and design is at the heart of meeting this challenge. So, you need to understand the related principles. In my experience, people tend NOT to distinguish between the *what* (the process) and the *how* (process architecture) when it comes to development and evolution of process information. ***This is one reason why many organizations with a clear vision, good sponsorship and funding, and a keen desire to improve the process nevertheless fail in the end. They may actually have captured the "RIGHT"[5] PROCESS, but because of a poor representation, PEOPLE DO NOT USE it, and the process is not followed in actual practice.***

The Process System and its Users

Imagine a day in the life of your organization, division or department. People are going about the business of getting work done. Customers' needs are elicited, decisions are made, products are produced, services are rendered, and work is delivered. **The people doing the work are the Process Users.** They need to understand how their role and duties fit into the bigger picture. They need to know what their specific job requires and what others contribute to the work. They need to quickly reference the steps to be followed. Sometimes these steps require proper use of methods, tools and automation. Sometimes, a good example is helpful to guide them. Sometimes, they are doing something for the first time (or the first time in a long time) and they need more detailed guidance. And so on.

The ideal Process System is an always-available, easily accessible and traversable set of process assets, served up to the Process User in a transparent way that supports doing their work. This system contains the published, authoritative source for how work is to be done. It contains the *what*. An organization might refer to its set of processes as its "quality management system" (a la ISO,) or its "Systems or Product Development & Management Life Cycles," or simply its "Best Practices" or "Standards & Procedures." It might think of its process system in terms of the format or platform on which it is published. (Online is a given, of course; more on that later!) It might think of the system in terms of the types of process assets which it publishes: Policies, Work Flows, Procedures, Guidelines,

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[5] The "RIGHT" PROCESS is, of course, a misnomer, since organizations are constantly changing and a captured process is always in need of revision.

Templates, Standards, etc. Regardless, all sets of process assets can and should be thought of as a system -- a group of related parts that interrelate and work together.

Process systems are not a once-and-done proposition, but like any system, are constantly evolving and changing as the enterprise grows, learns, and changes. Not only must this system be designed to satisfy the process user's many needs, it must be designed to be reliable, flexible, and maintainable.

Many of the people reading this article may be involved in software and systems development. Therefore an analogy may help get you thinking about the relevance of architecture to building a good process system.

Software System	Process System
Software architecture describes the structure of the software system, software component relationships, and system views that ensure customer needs are met.	Process architecture describes the structure of the process system, process component relationships, and system views that ensure customer needs are met.
Design uses common patterns of system behavior and any required unique elements, to outline the solution.	Design uses common process patterns (or process models) and standardized process component "templates" (procedure, role, task) for process representation, to outline the process system.
Code captures the design in a technical implementation of the design.	Documented processes and process assets implement the design.
Released, executable product provides the working system to fulfill customer needs.	Released, accessible process materials enable a user to use the processes to do perform their function within the enterprise -- GET WORK DONE RIGHT.

Architectural Viewpoints Explored in this Series

In the software and systems development trade, as well as in the building trades, architecture is a central theme supported by large bodies of knowledge. Both trades recognize that a complete architecture can only be described through various perspective representations or viewpoints. The well-known DoD Architectural Framework[6] (DoDAF) describes viewpoints such as: Capability/Vision, Data and Information, Operational, Services, and System viewpoints.

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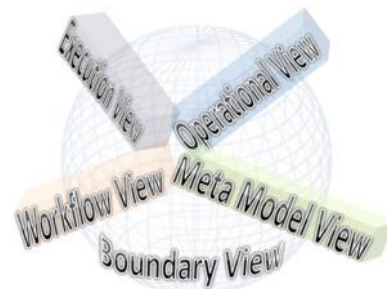
[6] The DoDAF Architecture Framework Version 2.02, http://dodcio.defense.gov/Library/DoD-Architecture-Framework

I have identified a similar set of perspectives, each of which must be described in order to build a usable and useful process system. They are:

- Boundary View (scope)
- Functional View (what)
- Operational View (ilities)
- Workflow View (when)
- Data View (MetaModel/how)
- Execution View (GUI)

In the series of articles to follow, we will explore each of these views and look at their importance in building and deploying a process system that actually gets used!