Loosely Coupled Thinking

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Tenets of Workflow

Tenet 1: Workflows *coordinate* work performed by *people* and *software.*

The first tenet illustrates how the concept of Workflow can bridge both human workflows and automated processes. Most end-to-end processes consist of both human workflows and automated processes:

- Human workflows
    - Human-intensive workflow typically involves people and roles
    - Human-intensive workflow must be highly flexible and extensible, since the source or path of the workflow may be altered by participants within the workflow.
    - Data within a human workflow is often unstructured.
- Automated processes
    - Automated processes include applications and services that may exist on a broad number of platforms
    - Automated processes tend to be very prescriptive since changes to an automated process are highly disruptive, negatively impacting the participants in that process.
    - Data tends to be more structured, with applications and services controlling the data and format.

Tenet 2: Workflows are *long running* and *stateful.*

Workflows consist of a series of related activities, linked together to serve a specific business objective, Business objectives may be associated with short or long running processes (LRPs), State management within a workflow or LRP is typically accomplished using a state machine. State machines reflect the way business users think about events and states within the business process. State machines also provide a well-understood approach for determining the current state of a process and enumerating the conditions and transitions from one state to another. Ensuring state synchronization across disparate organizations can be a difficult task, especially when exceptions disrupt the process, causing it to shift to an unexpected state. This issue is discussed in greater detail below.

Tenet 3: Workflows are based on *extensible* models.

Prior to the maturation of workflow systems, applications were largely developed using hard-coded business rules. Maintaining these applications was difficult and expensive – every time a business process changed the associated applications had to be rewritten, retested and redeployed – exposing the organization to ever-increasing levels of cost and risk. These types of applications eventually constrain and restrict the growth of the organization, preventing it from exploring new business opportunities due to the inflexibility of its underlying systems. Workflow systems provide higher levels of flexibility because they are "configured" to meet the needs of an organization's business processes using business rules. Most business rules can be modified

and re-deployed with no knowledge of software development – the systems that enable an organization's processes can be configured using a discrete set of easily modifiable business rules. Many workflow engines can also be embedded within applications, enabling developers to introducing a highly flexible, customizable set of rules that enable the application to be rapidly changed and redeployed without having to rewrite and recompile a single line of code.

Tenet 4: Workflows are *transparent* and *dynamic* through their lifecycle.

Tenet 4 requires workflows to be easily tracked and reported on at any stage of the process. A robust reporting system should enable business analysts, operations personnel and other services to inspect the workflow in near real-time to ensure the workflow is functioning properly and meeting all necessary service level agreements (SLAs). Workflows must be dynamic because the steps within a given workflow may be impacted at any time during process execution. For example, in a human-intensive workflow an information worker may decide to add an addition layer of validation to a document review process while a given document is being routed through the department of an organization. In an automated process an unhandled or unexpected exception must shift the state of the workflow to require human intervention.

The tenets of workflow are designed to address both human-intensive workflows and automated processes because the line between these types of workflows is typically mixed:
  - o Lines of Business (LOB) applications span both human-intensive workflows and automated processes. These LOB applications rely upon business logic to define internal business flows while relying upon people to interact with the application and to provide input.
  - o Business to Business (B2B) solutions are designed and deployed as a set of distributed, automated processes. B2B solutions also rely upon user input and interaction to manage unplanned or unhandled exceptions. B2B solutions also tend to utilize an organization's LOB applications, each of which will have human-intensive workflows associated with it.
  - o Systems Management, such as IT provisioning, is another example that spans both System and Human workflow, interacts with applications, systems and services, but at one level or another largely relies on user interaction for data input and actions.