

# Enterprise Architecture and a Federated IT Governance Model

*Abstract: How can the Adaptive repository be deployed in support of a Federated IT Governance Model? This paper briefly touches on the various IT Governance models and then focuses on a preparation of a repository deployment strategy in support of a Federated Model.*

## Introduction

The debate in essence is about centralization and decentralization. It raises questions about the extent and nature of delegation and empowerment and the maintenance of management control within the formal structure of the organization. The existence of an organization structure confirms an organizations commitment to **delegation** and **empowerment**.

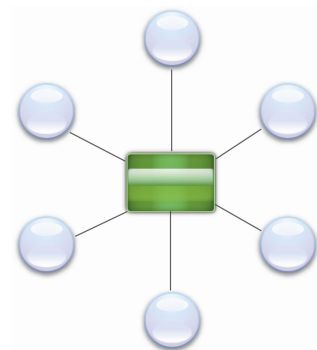
Delegation considers centralization and divisionalization or departmentalization. The **decentralization** may be federal or functional based. In the commercial market, federal decentralization<sup>1</sup> is the establishment of autonomous units operating in their own market with self-control and with the main responsibility of contributing to the profit of the parent body. Functional decentralization is based on individual processes or products.

For the sake of discussion, narrow the application of centralization or **decentralization** to the role of **Information Technology within an organization**. The Chief Information Officer in Utah, Phillip J. Windley, Ph.D. in a paper titled "Modular IT Organization in Utah State Government" identified four models, describing different degrees of decentralization.

## Delegation Models

### Centralized Model

In the centralized model, top-down responsibility for solutions delivery, conceptualizing, developing and implementing IT solutions for all parts of the business is controlled by some central authority. A centralized model is economical from both a skill and an overhead standpoint, but does little to build client



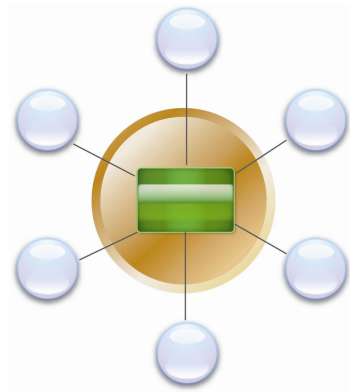
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<sup>1</sup> L.J. Mullins, Management and Organizational Behavior, Financial Times, 5<sup>th</sup> edition, p.575

relationships, foster business knowledge in IT staff, or further align IT with business needs since customizing the solution to fit the business can be difficult.

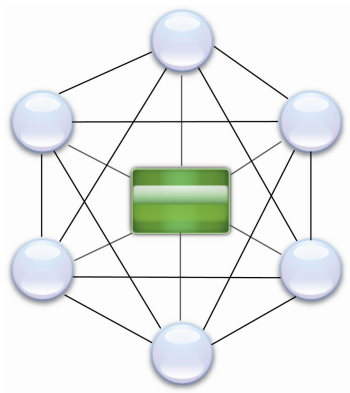
### Centralized with Customer Relationship Management Model

In this model, the conceptualization and delivery of IT services is still carried out by a central authority, but that authority is augmented with the addition of customer relationship managers—people who deal directly with customers on behalf of the centralized authority to mitigate some of the disadvantages of the central model. This model does much better than the pure centralized model because it aligns IT with business needs and builds client relationships. Nevertheless, it does require the additional overhead of staffing the CRM function and also requires that effective coordination to occur between the CRM staff and solution delivery teams.



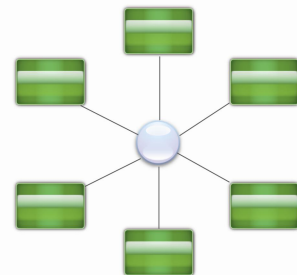
### Federation Model

In the federated model, a statewide IT unit such as the CIO's office has primary responsibility for architecture, common infrastructure and services, and standards decisions, while each agency IT department has primary responsibility for application resource decisions. Agency IT managers report into the agency director as well as the central IT organization. The federated model provides a good balance between enterprise and local innovation. Also, it is quite effective at aligning IT with the needs of the business. The disadvantages of the federated model are the complexity of coordinating among so many players, the problem of dual reporting relationships, and, most importantly, the high administrative and staff costs of supporting multiple IT organizations.



### Decentralized Model

The decentralized model is the loosest of the organizational choices. In the decentralized model, solutions delivery is aligned with the agency line of business and IT managers' report to the agency director. When coordination happens,

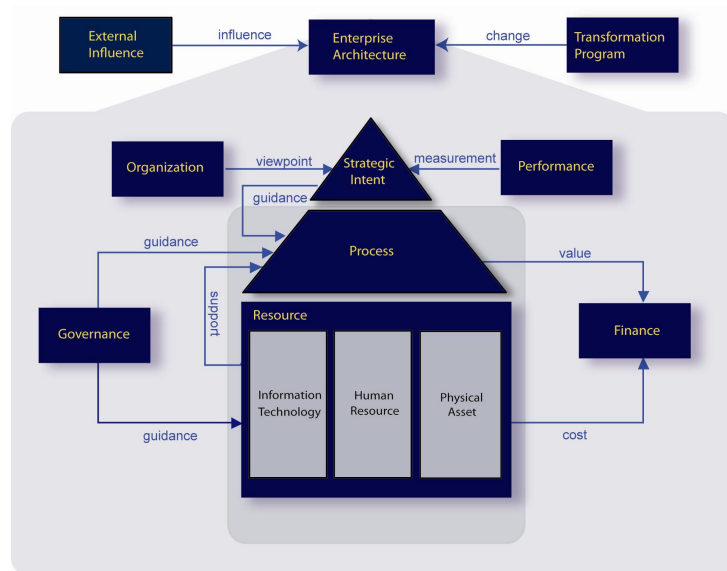


it is achieved in IT management and executive councils. The decentralized approach gives agencies the most control over IT direction and closely aligns IT service delivery with agency needs.

Understanding the delegation models is only half of the battle. The second half focuses on what needs to be delegated. In this paper we are considering Enterprise Architecture content. Enterprise Architecture is in essence the collective enterprise blueprint with all the rules to construct the blueprint. Simply put, "all levels of planning in the organization integrated under a given framework". The frame work in Forest Service is a data centric framework.

### ***Forest Service Enterprise Architecture Framework.***

Information in the Forest Service Enterprise Architecture is grouped into 11 data centric domains. Each domain is consists of information components unique to that domain; however information components are related to each other via associations. Associations cross the boundaries of domains and deliver the true value of Enterprise Architecture.



The following is a summary of each domain.

1. The **Organization** Domain describes formal and informal organization structures.
2. The **External Influence** Domain identifies outside institutions, persons or forces that potentially affect the performance of the organization.
3. The **Strategic Intent** Domain identifies future direction, measurement and the means to get to the desired state.
4. The **Unit of Work** Domain deals with different work effort levels, (Line of Business, Function, Process, Activity and Tasks) in relation to business objects and time.

5. The **Transformation** Domain includes Projects and Programs responsible for introducing change into the organization.
6. The **Information Technology** Domain is concerned with the computing resources, and associated models that enable the organization to operate
7. The **Human Resource** Domain is concerned managing people and their skills and capabilities.
8. The **Physical Asset** Domain describes assets and grouping of assets utilized by the organization.
9. The **Governance** Domain provides insight into governance being deployed within the organization
10. The **Performance** Domain establishes measurement for strategic intent, units of work and resources.
11. The **Finance** Domain describes the chart of accounts for a particular organization.

Using the domain level as a means to determine the “delegation model” is an over simplification. The items within each domain will provide a far more accurate delegation model, but for the sake of this discussion we will concentrate on a trend rather than an accurate model. We can look for trends by simply creating a matrix showing each domain’s most likely delegation type(s)

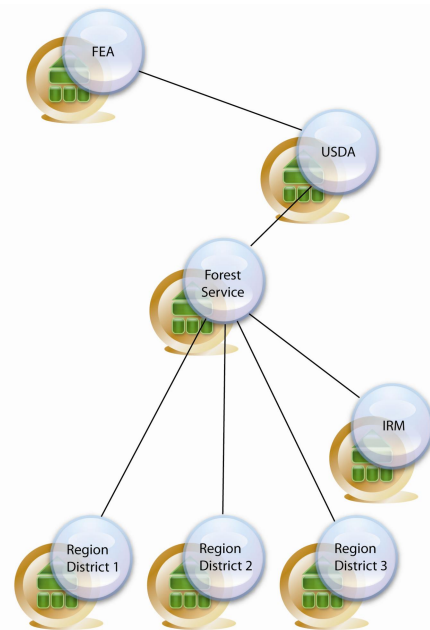
	 Centralized	 Centralized with CRM	 Federation	 De-centralized
Organization				
Formal Organization	✓			
Informal Organization			✓	
External Influence		✓	✓	
Strategic Intent		✓	✓	
Unit of Work		✓	✓	
Transformation		✓	✓	
Information Technology		✓	✓	
Human Resource		✓	✓	
Physical Assets		✓	✓	
Governance	✓	✓		
Performance		✓	✓	
Finance	✓			

## ***Federated EA Deployment Strategy***

Before developing a strategy, a reasonable comprehension of the EA technology is required. What can the technology do and what can it not do? The following concepts will aid in the discussion. Organizational Partitioning, Organizational Common Partitioning, Information Sensitive Partitioning, Time Partitioning, Knowledge Management Partitioning and characteristics of the Adaptive technology.

### **Organizational Partitioning**

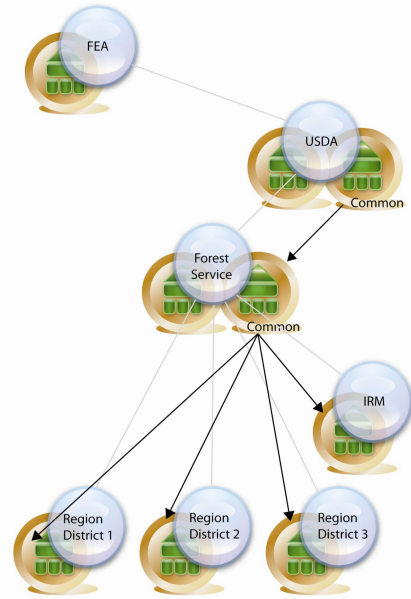
The traditional definition of an organization unit is the systematic arrangement of people to accomplish some specific purpose. In some case that purpose has been formalized into a mission statement. Both USDA and Forest Service have very formal mission statements in their respective Strategic Intent documentation. It makes good practice to store organization specific information into organization specific perspectives. Therefore the mission statement of USDA will reside in the perspective of USDA and the mission statement of Forest Service will be within the Forest Service perspective. Access to perspectives can be regulated. Who has access and what the person can do in the perspective contribute to the notion of self-control and autonomy over own information. Forest Service people can update the mission statement of Forest Service but not that of the USDA. It does not mean that Forest Service does not have the need to see the mission of USDA. To the contrary, it must see the USDA's mission statement to align its own statement as a subset. (See **Organizational Common Partitioning** for more on the use of another Organizations' information). As a rule of thumb we can say everything an Organization owns must be reflected in its own perspective.



## Organizational Common Partitioning

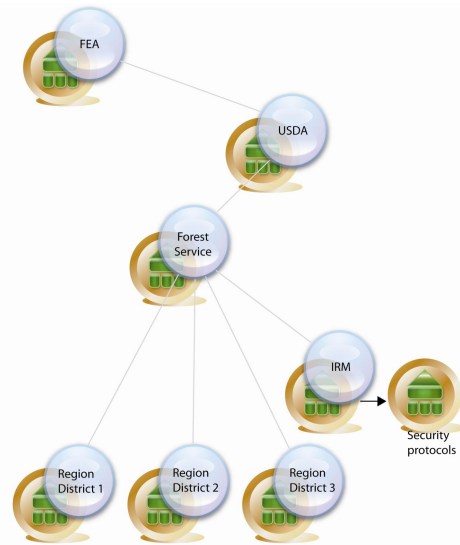
Whereas the previous discussion centered on an organization “owning” and having control over its own information, this discussion focuses on the “use” or application of information. Generally speaking organizational information can be grouped in to two categories. Information the organization needs to share and information it does not need to share. Sharing information with another organization means the other organizations can use the information in their own solutions. They can add their own associations to the information, but cannot change it. Let’s take the example of the mission statements again. A mission statement is a prime example of information that needs to be shared with all child organization units. The

children need to align their own mission statements to that of the parent organization. Build a hierarchy of mission statements in order to ensure that everyone is saying that they will pull in the same direction. USDA will therefore place its mission statement into its common perspective. The moment USDA adds the mission statement to its common perspective it will show in this example in the common perspective of Forest Service. Forest Service can add its own mission statement into the Forest Service Common perspective and link it to that of USDA. IRM, Region District 1, 2 and 3 will in their own perspectives see the mission statement of USDA linked to the mission statement of Forest Service. Again they can declare their mission statements and link it to that of the Forest Service. With the perspectives configured this way, child organizations inherit from the parent organization information they can associate-, but not make changes too. Thus the federated concept is protected by the repository. Let us now turn back and review the second grouping of information. “Information that does not need to be shared”. Within Forest Service HQ there may be processes only relevant at the HQ level. For instance, “Interpreting the federal budget” is an activity executed at HQ level and the results are distributed. Modeling the process and placing it into a common perspective serves no purpose. Lower level organization units cannot re-use the process. Overwhelming users with non-relevant information contribute to confusion and should be avoided.



## Information Sensitive Partitioning

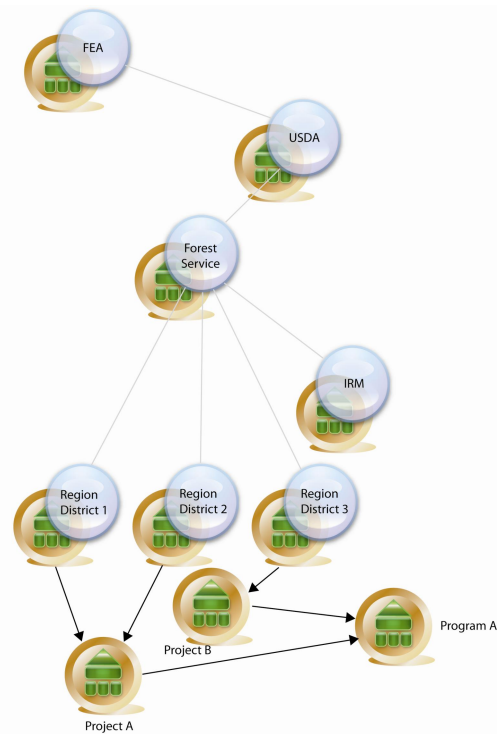
The inner workings of IT communication protocols, financial data, and strategic locations are but some examples of information we need to protect and shield. However we do not want to exclude the information from the repository and we would like to preserve its influence on non-classified information. A classified perspective gains access to non classified perspectives in order to place its information in context. However a non-classified perspective can NEVER see what is going on inside the classified perspective. For all intent and purposes it does not exist. The IT security community will see the application and will be able to design its security around the application without the application developers having to know all the inner workings of Forest Service security.



## Time Partitioning

So far we have discussed information reflective of the current environment. When we need to make a change to the current environment, that warrants the use of projects as a means to achieve the change another partition set should be considered. One that will reflect the future...

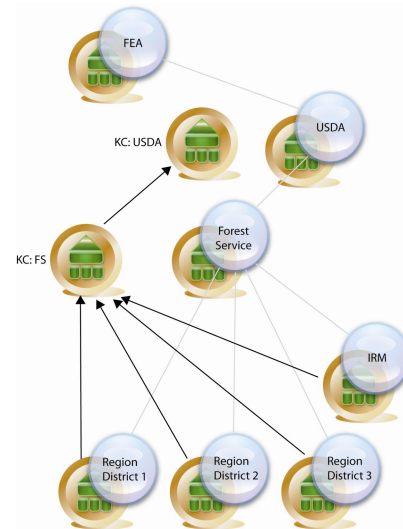
A project partition is based on the relevant current partition; therefore the “as-is” world is available to the project. The project and a select stakeholder community will define the future solution without influencing what the broader current user base is exposed to. Once the future solution is stabilized and accepted by the sponsoring community, the content of the project perspective is merged back into the relevant current perspectives.



Project perspectives can be grouped into Program perspectives in order to have a single view of what is happening in all projects.

## Knowledge Management Partitioning

Upward reporting, redundancy-, and duplication elimination are some of the requirements satisfied by knowledge management partitions. Where “Organizational Common Partitioning” filters information downward, “Knowledge Coordination Partitioning”, filters information upward. We establish a KC partition with the intent to manage information. KC partitions provide a birds-eye view on selected partitions. Diagnostic reports run on KC partitions looks for duplication and redundancy between the selected partitions. If an overlap is discovered, collaborative information relative to the problem’s solution is captured within these partitions for future reference.



## Adaptive Capabilities

In conclusion a few observations about the Adaptive technology:

- Adaptive supports a common perspective / partition. Information place within the common perspective can be seen by ALL perspectives.
- Adaptive also support a very useful “classification” capability. Information can be filtered via a user defined classification structure. The classification capability is part of the non-versioned data within Adaptive resulting in it showing-up in ALL perspectives. It is not possible with 3.1 to have a classification contained within a particular perspective. This is also true for type definitions.
- User access control and role definition is done once per installation. Although users can be given selective access to perspectives the administration function is very much a centralized function and cannot be distributed. If USDA and Forest Service are housed within the same repository then who ever has access to the security profiles has access to everything within the repository. If Forest Service is allowed to add users to Forest Service perspectives, nothing in the Adaptive repository will restrict them from having access to USDA perspectives.

## ***Formulate a EA Federation Deployment Strategy***

The following steps should be considered in establishing a federated EA deployment strategy.

- Identify Stakeholder Communities. Who has a vested interest in planning information? *From the Forest Service perspective, Organizational Units down to the regional districts should have their own perspectives. Governing bodies (OMB, USDA, etc.) projects (e-Gov), special interest groups (financial, security) and Knowledge Coordination should all have their own perspectives.*
- Identify stakeholder roles? What will the stakeholder add to the repository and what value is he expecting to derive? This will determine what item types should be visible to the stakeholder.
- Identify delegation structures. Who has directive authority and who has execution authority? This will help set-up the inheritance structures and the report-back structures.
- Formulate Adaptive enhancement expectation. What is the requirement with regards to production- and development repository platforms? (Performance indicators)
- Determine the administrative load. Single site deployment VS multiple site deployment.
- Identify data sources.
- Identify most 5 important clients.

Once answers to the questions above have been established, the EAR can be technically deployed. It will be a shell with no content but will have all the functionality required to reflect a federated EA solution.

Attention should be given to the functions performed by those responsible for establishing EA content, its quality and its value distribution. How should these functions be performed? Centralized or Federated?

Start with **Knowledge Creation**. This clearly is a federated function. Knowledge Creation takes place in the work environment. We capture the knowledge in either document (free format textual containers e.g. Word Document, email, presentation etc...) or in structured systems. How this "knowledge" finds its way into the EAR is another question. From the perspective of those responsible for Knowledge Management within the EAR environment 3 sub functions is appropriate.

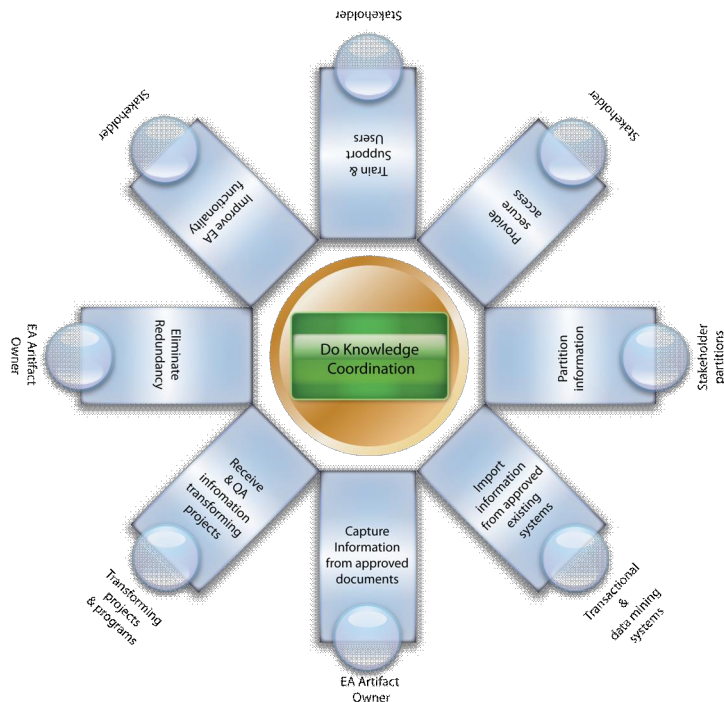
- Capture information from approved documents
- Import information from existing systems

- Receive information from projects or programs

All 3 sub-functions are concerned with taking “created knowledge” and placing it into the EAR in a structured manner. The value of Enterprise Architecture is directly related to the relevance of the information placed into the EAR. It makes sense to centralize this function in an attempt to control quality.

Next is the concept of **Knowledge Organization and Storage**. Knowledge has found its way to the EAR. Knowledge placement will impact Knowledge Distribution. The EAR’s access security is based on Item Types within the context of a particular perspective or partition. Where you put information will determine who will be able to see it. Organizational Partitioning, Organizational Common Partitioning, Information Sensitive Partitioning, Time Partitioning, Knowledge Management Partitioning and characteristics of the Adaptive technology should all be considered when adding information to EAR. This is a Knowledge coordination function that needs to be centralized. Knowledge Organization is also concerned with duplication and redundancies. Information has been harvested from multiple isolated sources. Once information is consolidated these redundancies and duplications become quite apparent and steps should be taken by the Knowledge Coordination team to facilitate conflicting issues between stakeholders.

**Knowledge Distribution** is concerned with what information could be viewed by whom. Providing the user with the required security profiles allows for this selective viewing and changing of EA content. This function is a centralized function.



**Knowledge Application** takes the information and applies it back to the stakeholder in a practical manner. Graphics, scorecards, diagrams are means to present information in a manner providing insight. This function is also centralized.