# 5. Organizational Context

**15 September 2008**

**Bob Glushko**

## Plan for ISSD Lecture #5

The Context of Design

Business Organization and Architecture Patterns

The Co-evolution of Business/IT Architecture and the "Human Systems"

Stakeholders, Context, and Design Process

# The Context of Design

The design of any service -- whether it will be performed by people or by information systems -- takes place in a context of:

- Current and potential customers
- Current and potential technologies
- Current and potential competitors
- Existing services or systems
- Existing user or application interfaces
- Legal, regulatory, cultural systems and constraints

# Organizational Context

Many of the dimensions in "The Context of Design" are represented in or shaped by the structure of the organization / firm / enterprise in which the design takes place

There are many ways to talk about this structure, but key choices or characteristics include:

- Centralization vs decentralization
- The number and types of roles people play
- The span of control for managers
- The organizational "discipline" and "core competencies"

There aren't all that many "reasonable" combinations of these dimensions; businesses tend to follow organizational patterns

# Why Organizational Context Matters

It determines the influence and priority of stakeholder roles and individuals

It determines how readily new systems or applications or methods can be adopted, and even whether "you can get there from here" at all

If customers / principal stakeholders come from different contexts, this may systematically shape their goals and requirements

# Business Organization Patterns

Physical Views

- The view we see in an enterprise's organization chart, reflecting the model of management control and authority for the business activities
- Sometimes the organizational chart for a business closely mirrors another common physical model of business organization - the facilities locations (physical view of supply chain)

Conceptual Models

- In its most abstract, conceptual form the model of a business is simply called its business model or business architecture.
- The business model is concerned with the nature and pattern of "value exchanges" between an enterprise and its suppliers, customers, and other entities in its "value chain" (conceptual view of supply chain)
- Another very abstract model of business organization is that of *core competencies*

## "The Discipline of Market Leaders"

| 'Value Discipline' | Basic Philosophy | Examples |
|---|---|---|
| 1) operational excellence | -customer proposition is simple: low or lowest price and hassle-free service | -Wal-Mart, McDonalds |
| 2) product leadership | -offer products that push performance boundaries | -Intel, Nike, 3 M |
| 3) customer intimacy | -delivering what specific customers want | -Airborne Express, Nordstrom |

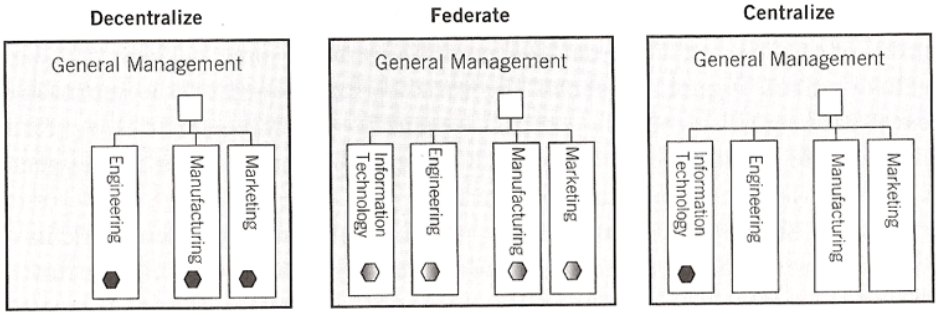
Book summary at http://www.bizsum.com/thediscipline.htm

## Other Conceptual Models of Business Organization

Somewhat less abstract but still conceptual are models that describe the functional or cross-functional organization of work:

- A *Functional*
  organization groups people doing the same activities together and minimizes the need to exchange information across organizational boundaries to get its work done
- A *Cross-functional*
  organization duplicates functional activities in the enterprise as a whole but creates organizational units that achieve efficiencies based on product lines, customer segments, or geography
- *Outsourced*
  activities are those formerly performed by functional organizations now performed by external service providers

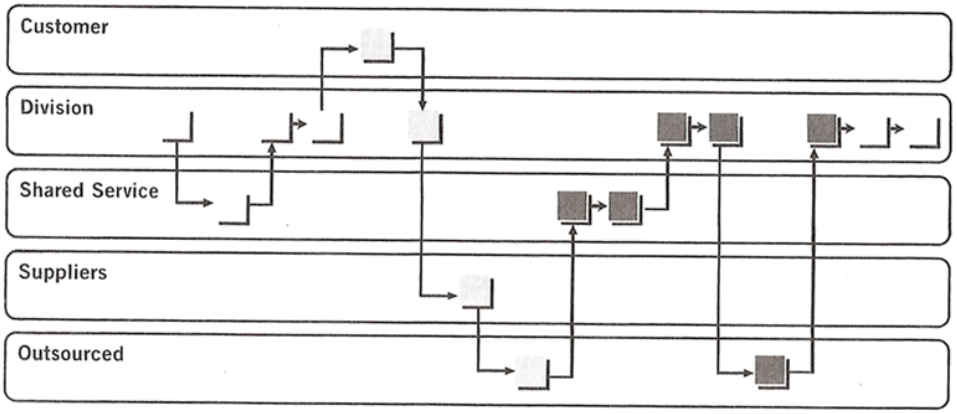
# Some Business Architecture Choices




# To Centralize, or not to Centralize?

| | Decentralize | Federate | Centralize |
|---|---|---|---|
| Pros | Business unit manager sets IT priorities directly.<br>IT function is more responsive to changing business requirements because they are aligned with the business unit. | Proverbial "best of both worlds." | Maximizes potential economies of scale.<br>Overcomes scarcity of IT skills.<br>Provides a career structure for IT staff.<br>Minimizes overhead by centralizing contingency and capacity planning, and so on. |
| Cons | Business units tend to reinvent the wheel.<br>Business restructuring and integration inhibited by systems optimized for a particular unit.<br>Shortage of IT skills. | Leadership at the top must adapt to diversity of needs within the federated units. | Must balance conflicting interests across business units.<br>Business areas do not control day-to-day provisioning of IT services.<br>Prioritization may be outside the control of the business units.<br>Corporate policies may constrain the options available to the business units. |

# Another View of Business Structure Patterns




# Business Structure "Distance" and Stakeholder Influence

"Distance from the product" is not correlated with the amount of influence

Some of the most important stakeholders are far removed in organizational hierarchy or proximity to the development organization

However, distance can make it difficult to include stakeholder concerns and lead to design failures

## Insider vs External Clients/Customers

Design and development for external clients and customers often undermines the requirements of insider stakeholders

In contrast, with insider clients and customers, the design process is made more complicated and "blurrier" because of overlapping roles - the project manager might be both the client and part of the development team

This might make communication easier and the process more flexible, but it tends to make the process less structured with negative implications for budgeting, requirements traceability and accountability

## Big Questions about Business Organization

What's the relationship between business model patterns and an enterprise's physical organization and technology?

What is the relationship between organizational patterns and business models?

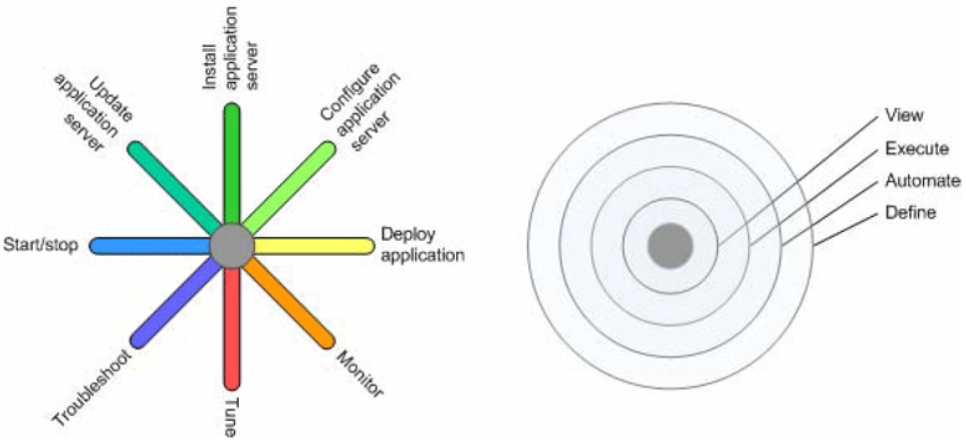
Is any model of organization more natural than another? How is a "company of 1" organized? Is there a natural size to an organization or enterprise?

# "IT Ecosystems: Evolved Complexity and Unintelligent Design"

IT hardware and software environments have grown steadily in complexity...

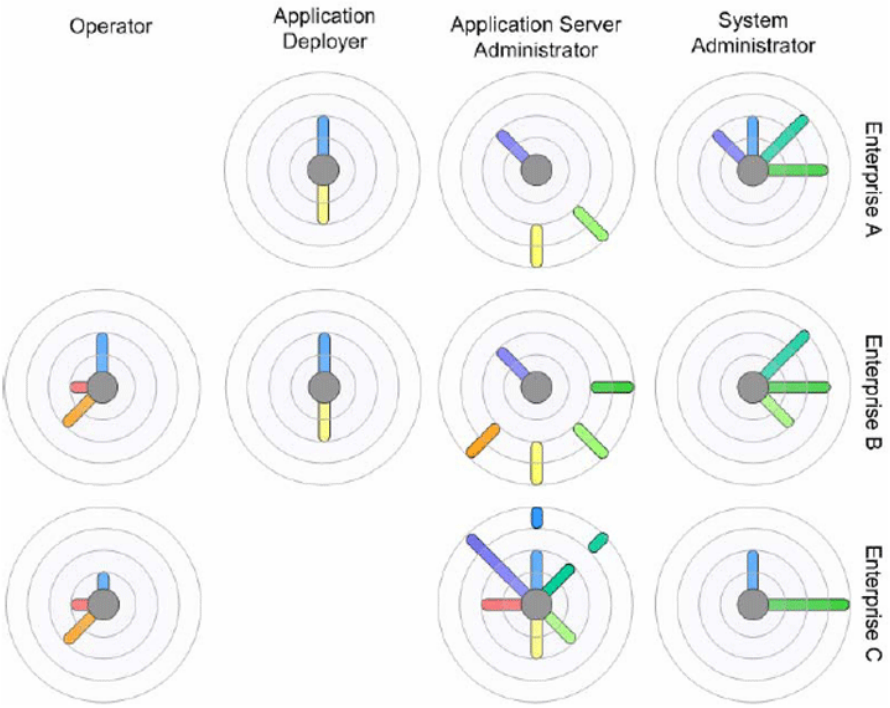
- and "consist of many specialized functional components, often designed by multiple vendors"
- "interconnected in a plethora of permutations"
- "through an accumulation of small changes to prior iterations"
- or because of acquisitions, each "brought in with their own existing processes and departmental divisions"

# A Job-Responsibility Diagram




The number and nature of the roles in the "human systems" has co-evolved with the technology evolution

# Job-Responsibility Patterns




# Key Lessons About "IT Ecosystems"

There is no "right way" to organize an enterprise and its IT capabilities

The evolved IT ecosystem embodies tradeoffs about the nature, depth, and flexibility of system and personnel capabilities

Different "users" perform the same task with the same tool in radically different contexts, or different tasks with the same tools

Design methods must be adapted to the technology and personnel "configurations"

## "No Silver Bullet: Essence and Accidents..."

"The hard part of building software is the specification, design, and testing of this conceptual construct, not the labor of representing it"

"The scaling up of a software entity...is necessarily an increase in the number of different elements"

"The elements interact with each other in some nonlinear fashion, and the complexity of the whole increases much more than linearly"

"Much of this complexity is arbitrary... forced without rhyme or reason by the many human institutions and systems to which his interfaces must conform"

"In short, the software product is embedded in a cultural matrix of applications, users, laws, and machine vehicles"

## "Invented Requirements and Imagined Customers"

When a custom solution is developed under contract with a customer, "getting customer requirements" is an explicit initial activity

In contrast, for systems or applications or services intended for "mass market" or "off the shelf" contexts, the requirements process has to be very different

- "To be successful, an OTS product much be capable of being embedded in diverse organizations, and assumptions about POLICY pervade the specification and code"
- "An OTS system is only as good as the accuracy of the contextual assumptions made by its designers"
- "Because there is no customer to provide definitive answers... it becomes necessary to evaluate likely system behavior in concrete situations"
- "OTS products have to be user customizable or extensible"

## "Organizationally Embedding of UX" -- Rohn

"An irony of UX professionals is that they are often so focused on understanding their external customers, they do not spend the time necessary to focus on the internal customers"

"The first step...is to understand the business, culture, and stakeholders"

Select and emphasize design activities that best support the firm's business model and strategy

PUT ANOTHER WAY: UX work must fit into the "Value Discipline" of the firm (slide 6 in today's lecture)

## Recasting Rohn in "Stakeholder Speak"

UX people must demonstrate that they understand and support the goals of the stakeholders with more influence than they have

This means the UX people must treat internal stakeholders as customers and "co-produce" with them

The organizational structure and culture reflects the relative influence of stakeholders - is the firm driven by marketing or by engineering, for example?

UX activities need to be embedded in the processes that matter to these other stakeholders

When external customers make purchase decisions or attribute other value to UX considerations, the UX people must ensure that this information gets to internal stakeholders

## Rohm's Recommendations About "Reporting Structure" and "Funding Model"

Ideally, UX should be organized as a peer to marketing and engineering, with similar reporting relationships to executive management

Centralized UX organization with matrixing to LOB units seems to offer the best balance of career development, consistency, economies of scale, and effective influence

Centralized funding - like other business units - is preferable to "charge back" or "taxation" models

## Summary Thoughts: Stakeholders, Context, and Design Process

Classifying stakeholders is essential to prioritizing them, which is critical since their goals and requirements will inevitably conflict

Stakeholders differ in power, proximity to the design process, and the urgency of their concerns

## Impact on the Design Process

Identifying and classifying stakeholders is a prerequisite for getting requirements from them

How and when to get requirements will depend on the priority you've assigned each type of stakeholder

Furthermore, the "stakeholder" mix will shape the design methods and other aspects of the development life cycle

For example, many products and services can be developed with more iterative techniques

But strongly regulated ones will follow more of a waterfall process with more substantial and "traceable" documentation about design decisions and tests

## Iteration of Scope, Priority, and Stakeholder Identification

Identifying stakeholders and determining their priority depends on the scope of the design project

However, the scope might enlarge during the project, which can make previously excluded stakeholders relevant or raise the priority of those previously "on the fringe"

Even if the scope doesn't change, as the design evolves, it might give stakeholders more clarity about their goals or change their priority

"... measuring changes to design decisions as defects leads to to an unsuccessful product and unhappy developers... [who] need to be empowered to continuously improve understanding of the stakeholders"

# Readings for 17 September

Martin Fowler, "Enterprise transforming projects that don’t kill the enterprise"

Hugh Beyer, Karen Holtzblatt, and Lisa Baker, "An agile customer-centered method: Rapid contextual design"

Mark Ominsky, Kenneth Stern, & James Rudd. "User-Centered Design at IBM Consulting"