Enterprise **Infrastructure vs. Enterprise Integration** Architecture Standards

(from “Effectively Managing Information Systems Architecture Standards: and Intra-organization perspective”, by Boh, Yellin, Dill and Herbsleb, 2004 *MISQ*)
Enterprise Architecture defined as...

- “the organizing logic for applications, data, and infrastructure technologies, as captured in a set of policies and technical choices, intended to enable the firm’s business strategy.”

(J. Ross, MISQ Executive, 2003 (2:1), pg. 2)

- Distinguishes Enterprise architectures from IT project architectures
- Implies a governance mechanism and holistic view of the IT resource across the organizational landscape
Enterprise architecture provides standards as a ‘boundary object’

- To align changing business needs to changing IT capabilities
- Establishes a shared context between two or more parties
- Provides a concrete means for individuals to specify and learn about differences and dependencies across a given boundary.
EA Architecture Development

- Problem:
  - current practice/thinking sees Enterprise architecture as a one-time construct
    - When... it is an on-going process ≠ one time planning exercise
  - Plays an *integration role* in the organization
Two different sets of IS Decisions

- Decisions foci...
  1. Hardware and networks operations and planning
  2. Systems development (including planning, software acquisition and maintenance)

- Lead to different architectural standards or types
  - **Infrastructure architecture**
    - concerns computer and communications/network operations and infrastructure planning activities
    - Standards to: limit technology choice, reduce platforms supported and define the limited set of computing resources to be managed
  - **Integration architecture**
    - standards to define ways business services, data, events are defined and accessed by the organization.
    - focused on systems development, including application planning, software acquisition and maintenance.
    - Specifies how data, process and applications relate across the enterprise.
Table 1. Key differences between the **infrastructure** and **integration** architecture standards

<table>
<thead>
<tr>
<th>Focus</th>
<th>Infrastructure Architecture</th>
<th>Integration Architecture</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Providing common IT platforms, networks, and computing resources</td>
<td>Providing interfaces into and integration of business unit capabilities and information</td>
</tr>
<tr>
<td>Scope</td>
<td>Wide and heterogeneous community of users, or entire enterprise</td>
<td>For a limited and focused set of business services, prioritized by business value</td>
</tr>
<tr>
<td>Key metrics</td>
<td>Efficiency, cost</td>
<td>Cost and enablement of new business capabilities</td>
</tr>
<tr>
<td>Driver (champion) within</td>
<td>IT organization (at CIO/CTO level)</td>
<td>Corporate sponsorship for enterprise integration, executive sponsorship within each business unit</td>
</tr>
<tr>
<td>organization</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Comparable model</td>
<td>Public infrastructure provided by government</td>
<td>Business contracting</td>
</tr>
</tbody>
</table>
Infrastructure architecture standards and policies

- created to define the computing technology infrastructure for the enterprise.

- It establishes technology standards to limit technology choice, to reduce the number of platforms supported, and to define a set of computing resources that organizations manage.

- This standardization is expected to significantly reduce the number of vendor packages and infrastructure services that perform similar functions (Ross, 2003).
Integration Architecture

Standards

• refers to the standards and policies created to define the means by which business services, events and information are defined and accessed by the enterprise.

• It consists of a set of architectural components, such as data, processes, and event models, application architecture and service-oriented architectures (Brown, Johnston, and Kelly, 2003)

• that specify how different data, processes, and applications relate to each other across the enterprise.
As the integration architecture matures and is more completely defined...

- the enterprise evolves from an application programming interface (API) based integration model to an integration model that leverages shared data and services across different applications.
  - APIs e.g., Programming an interface for each application system that needs to interact with another system may solve the short-term transaction processing and data integration problem, but it becomes cumbersome to manage as the number of applications and the number of interfaces between the applications increases exponentially.
  - But an **integration model that leverages shared data and services** across different applications would define set of data and services that is common across different business processes.
    - This would allow the organization to have better integration of data and transaction processing in the long term and better ability to scale its operations and support new functionality as the number of applications and functions required increase.