

Lecture 12

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System Integration & Architecture

Traditional Approaches to System Development and Enterprise Engineering

Outline

- Traditional approaches to System development
- Technology dependent problems
- Solution Considerations
- Enterprise Engineering

Summary on Traditional System Development Methods

- Systems requirements have typically been defined by IT staff, by interviewing users to determine their operational business needs.
- The designs that are established are then based on technology, with application design, database design, and object design reflecting that technology.
- These designs are then implemented to meet desired business performance requirements.

Technology Dependence Problems

- The business needs have been difficult to determine. If these needs are not understood or expressed clearly, the designed systems may not address the real needs of the users and management.
- The systems that are developed are typically not aligned with corporate goals that set directions for the future. This is one of the main problems with systems development today.
- But the strategic directions are not clear; yet they must be understood if IT is to design flexible systems that support the strategic directions.

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- “If we base our needs for the future on operational processes that we still use today, we are implicitly assuming that the future will be similar to the past. This is very dangerous; few industries and enterprises can say today that their future will be like their past. Most know that the future will be quite different. The only certainty we have is that the processes we will need then are quite different from the processes we use today.”
- Enterprise engineering provides support for business transformation: a future where the only thing that is constant ... is change itself.

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“We must design for tomorrow based not on operational processes still used today. We have to design for tomorrow by using new activities and processes tailored for the environment of the Internet—which represents our present and our future—so that enterprises can respond in seconds or minutes, not in days or weeks.”

Solution Considerations

- The systems that are to be developed for the future must support the corporate goals. This is the most common systems development problem today.
- We must therefore determine the goals for the future. But goals are expressed in business terms, not systems terms. What should we implement?
- We earlier discussed that IT departments must be aware of strategic directions so they can design for the future. In the 1990s this was difficult because most IT departments did not participate in strategic planning. However, this is changing; many CIOs now come from the business side rather than from IT.

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- Yet we have seen that IT must build systems based on strategic plans if those systems are to be aligned with corporate goals. They must be based on activities and processes designed for the future, not the past.
- If this is done, technology can then offer competitive advantage: It can be used to help achieve the strategic plans and corporate goals, with new activities and processes that respond in seconds or minutes—not in days or weeks.

Enterprise Engineering

Enterprise engineering resolves these problems with systems development. It enables business experts and IT experts to work together in a design partnership using modeling tools. Enterprise engineering utilizes modeling tools and methods for business transformation by business experts and IT experts to do the following:

- Build systems for the future that can support the corporate goals.
- Identify goals for the future in business terms, so that IT can determine what to implement in systems terms.

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- Provide strategic business planning methods so that the IT department can participate in strategic planning with management.
those systems are aligned with corporate goals.
- Technology can then offer competitive advantage—used to help achieve the strategic plans and corporate goals.

Readings & References

1. Read and Prepare given Handouts
2. Chapter-1, Topic 1.3 : Enterprise Architecture for Integration: Rapid Delivery Methods and Technologies by Clive Finkelstein

Good Luck 😊