IT Architectures
MBA 8120
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Source: Dr. Stefano Grazioli
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IT Infrastructure

Set of IT components that are interconnected and managed by IT specialists with the objective of providing a set of standard services to the organization.

OUTLINE

- IT architecture
- Basic architectures
- Conclusions

Today: What they are
Tomorrow: Management and Assessment
**IT Architectures**

"An IT architecture is the organizing logic for application, data, and infrastructure technologies, as captured in a set of policies and technical choices, intended to enable the firm’s business strategy."

J. Ross "Creating a Strategic IT architecture Competency: Learning in stages" MISQE 2003

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**The Six IT Architectures**

1. Standalone systems
2. Technical Connectivity
3. Adaptive Patchwork
4. Data Warehousing
5. Enterprise Integration
6. Component Architectures

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**Architectural Evolution**

[Diagram showing the evolution from Standalone systems to Component Architecture involving data integration, process integration, technical connectivity, data warehousing, and adaptive patchwork.]

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1. Standalone Applications

- Accounting
- Purchasing
- Billing
- Production
- Scheduling
- Marketing
- Pricing
- Purchases
- Customers
- Invoices
- Orders
- Inventory
- Orders2

- Clear alignment to a single business need
- ROI
- Quick & cheap to build / COTS
- Best technology
- Close fulfillment of user requirements
- Unaffected by legacy

- Data Redundancy
- Poor security
- Poor data quality
- Expensive to maintain
- Expensive to integrate

2. Technical Integration

- Accounting
- Purchasing
- Billing
- Production
- Scheduling
- Marketing
- Pricing
- DBMS
- Customer
- Orders
- Inventory
- Business Rules
- Internet
- Suppliers
- Data

3. Pains of Integration

- Accounting
- Production Plant #01
- Production Plant #02
- Marketing
- Application #1
- Application #2
- Application #3
- Application #4
- Application #5
- Application #6
- Inventory
- Costs
- Orders
- DBMS
- Costs
- Sales
- Research
- DBMS
3. The Adaptive Patchwork

ERP
Legacy
Payroll
Mart
CRM
Legacy
Administrative data
Operational data

4. Enterprise Systems

Integration is by-product of system implementation
Emphasis on sector/context & best (i.e., generic) practices: process standardization

5. Data Warehousing

Data Warehouse

Decoupling
Minimize resistance
Preserve integration MOD 3
Component Architectures

- **Web services (software as a service)**
  - reusable software components
  - perform functions on their own or with other web services to complete transactions (e.g., checking credit, ordering products)

- **Strategic agility (innovation)**
  - organization must design itself to be appropriately agile in response to external and internal forces (Gardner, 2004)

- **Reuse** (investment preservation)
Why should I care?

- Flexible, Fast, Reliable, Resilient and Secure communications enable ever-tighter and more efficient collaborative work toward common business goals.
- Just In Time Agile Corporations require the quick assembly (and reconfiguration) of resources (people, services, systems) to deliver customized, competitive products.

Source: C. Stucke, 2004

Conclusion

Management Focus

Develop and manage efficient and flexible infrastructure.