Management Information Systems

DTSL EEP (B-2), S-1

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Does IT Matter? Your Views Please!

IT Doesn't Matter, Nicholas Carr, HBR, 2003

- Motivated by the IT-related expenditure and companies going bust!
- What makes an asset strategic? – Proprietary vs. Infrastructural
  - Value when used in isolation versus value when shared
- Infrastructural asset can remain proprietary for some time because of:
  - Physical limitations, IP rights, huge initial costs, lack of standards
- Does IT's strategic value increase/decrease by its potency and ubiquity?
- The Sprint to Commoditization of Infrastructure Technologies

IT Doesn't Matter, Nicholas Carr, HBR, 2003

- Indefinite advantage – Not necessarily!
- Essential to competition but inconsequential to strategy?
- Rules of IT Management
  - Spend Less
  - Follow, don't Lead
  - Focus on vulnerabilities, not opportunities!

Counter-view – (How) Does IT Matter?

- Is IT only infrastructural technology?
  - Is IT primarily a transport mechanism?
  - Is IT only bytes of data – hence perfectly reproducible?
  - What about software-ization – "Software is eating the world"
- Technology not a panacea!
- Business activities are the basic unit of competitive advantage – Porter
  - Hence software-ization will provide Competitive Advantage
- The Onset of Machine, Platform, Crowd!

Classification of Information Technology

- Why Classify IT?
  - Offer companies distinctive capabilities, delivers unique benefits and triggers organizational changes of different types and magnitudes
- Classification based on the breadth of impact and organizational changes required:
  - Functional IT, Network IT, Enterprise IT
- Classification based on impact on specific business functions:
  - IT Infrastructure, IT Apps, Data
- Classification based on usage at different levels within the organization
  - Transaction Processing Systems (TPS), Management Information Systems (MIS), Decision Support Systems (DSS)

Classification of Information Technology

- Function IT, Network IT & Enterprise IT
- Function IT
  - Tech that makes the execution of stand-alone tasks more efficient
  - Usually used by specialists and knowledge workers
  - Capabilities
    - Enhances productivity and optimization
    - Enhances experimentation capacity

Types of Information Technology

- Network IT
  - Means to communicate with each other; Usually voluntary
  - Capabilities
    - Facilitating collaboration ✓
    - Allowing expressions of judgement – the public sphere
- Enterprise IT
  - Restructure interactions among groups of employees or with business partners
  - Capabilities
    - Redesign business processes; imposes complements throughout the organization
    - Standardizing work-flows
    - Monitoring activities and events efficiently

GRP ← best

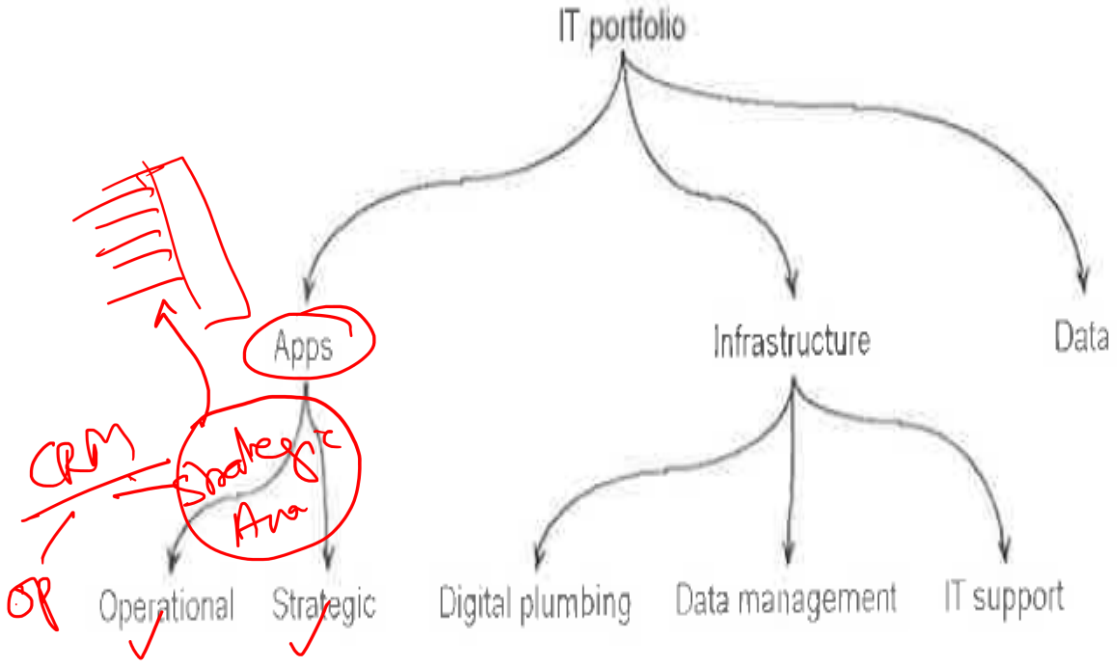
IT Asset Classes

	IT Infrastructure	IT Apps
Pizza Analogy	Crust	Toppings
What they are	Foundation shared by all the apps	Programs used by line functions
Imperative	Cheap and reliable	Enabling line functions
Demands	Technical know-how	Business know-how
Strategic Role	Competitive necessity	Potential advantage

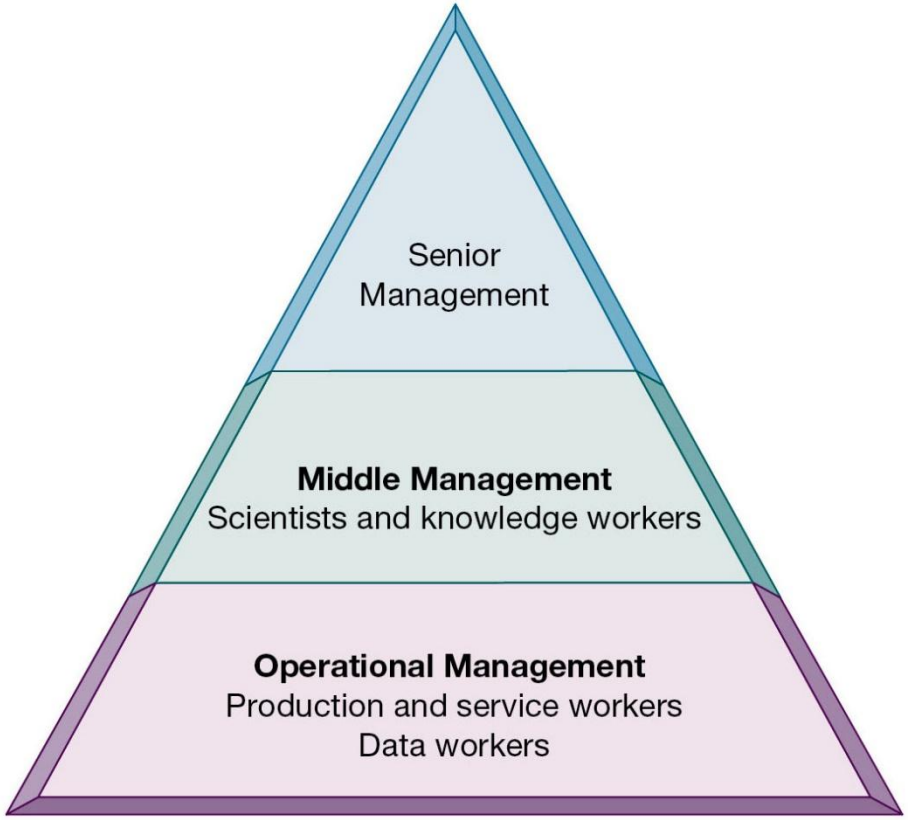
Carr's

IT Asset Classes

- Data – most valuable asset
  - Infrastructure is the conduit
  - Apps are to scrub, organize, and structure data into business insights



Management Levels & Information Systems



Types of Information Systems

- Transaction Processing Systems (TPS), Management Information Systems (MIS), Decision Support Systems (DSS) / Executive Information Systems (EIS)
- **Transaction Processing Systems (TPS)**
  - Serve operational managers and staff
  - Perform and record daily routine transactions necessary to conduct business
  - Allow managers to monitor status of operations and relations with external environment
  - Examples: sales order entry, payroll, shipping, attendance monitoring systems
  - Critical for business – outage is disastrous

Types of Information Systems: BI

- **Management Information Systems (MIS)**
  - Serve middle management
  - Provide reports on firm's current performance, based on data from T P S
  - Provide answers to **routine questions** with predefined procedure for answering them
  - Typically have **little analytic capability**
  - Example: What is the impact on production schedule if December sales doubled?
- **Decision Support Systems (DSS) / Executive Support Systems (ESS)**
  - Supports middle/senior management
  - Support nonroutine decision making
  - Requiring judgment, evaluation, and insight; May be model-driven or data-driven
  - Incorporate data about external events (e.g., new tax laws or competitors) as well as summarized information from internal M I S and D S S
  - Example: to decide on resource allocation, tax implications

Manager's Role in Managing IT

- IT Selection
  - Problem: Endless options available
  - Solution: Move from outside-in to inside-out approach – focus more on capabilities provided than on the technologies
- IT Adoption
  - Problem: procurement to productive use; whether the technology usage is mandatory or voluntary; EITs change business processes – usually not only enable, but dictate usage
  - Solution: TAM (Technology Adoption Model), Digital Champions, Change Management
- IT Exploitation
  - Problem: Value derivation
  - Solution: Fine-tune organizational complements; Guiding users; EIT: Business Intelligence S/w, Business monitoring capabilities

References

- 'IT Doesn't Matter' – Nicholas Carr, HBR, 2003
- IT Strategy for non-IT Managers – Amrit Tiwana
- Managing the three worlds of Information Technology – McAfee, HBR