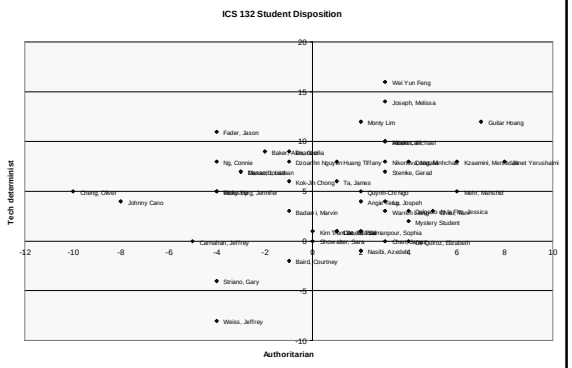
ICS 132: Organizational Information Systems

Basic Concepts



basic concepts

- last time, we looked at three metaphors
  - organisations as machines, organisms, & cultures
- now we'll look at organisations in more depth
  - what are organisations
  - how do they work
  - what is the role of information and information systems?
- there's a lot of material in chapter 2
  - need to understand it in depth
  - more than I can cover here today

what's alter's book about?

- organisations?
  - business focus
- system analysis
  - analysing organizations
  - analysing information needs
- conceptual resources
  - concepts, structures, frameworks
    - comparing and generalising
  - we'll get methodological resources from Lofland
  - "Perspective is worth 50 IQ points" (Alan Kay)

why is this hard?

- problems of incomplete knowledge
  - you know about technology
    - but you don't know about the organization
  - they know about the organization
    - but they may not know what they know
    - and they don't know about technology

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people can't tell you what they want because they don't know what they can get

systems

- organisations are *systems*
  - complexity
  - feedback
  - purpose
- alter's definition
  - "a set of interacting components that operate together to accomplish a purpose"
    - focus on: separation and interconnection
    - examples: manufacturing; retail

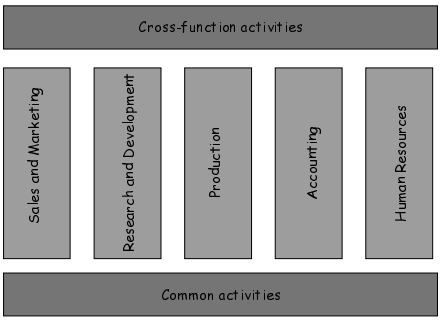
systems of processes

- the components of the system are *processes*
  - business processes
    - sets of steps or activities that create value for customers
      - customers may be internal or external
      - processes are relatively well defined
- the "value chain"
  - processes that add value for customers
    - primary processes
    - secondary processes

primary or secondary?

- hiring new employees
- designing a new product
- monitoring sales
- teaching classes
- doing research
- analysing market data
- monitoring employee satisfaction
- payroll processing

functional organisation



functional organisation

- alternatives to functional organisation?
  - does UCI exhibit a functional organisation?
- limitations of functional organisation?

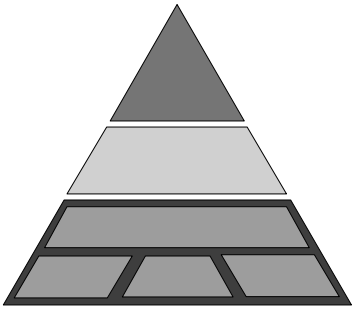
where do inf. systems fit?

- how can information systems add value?

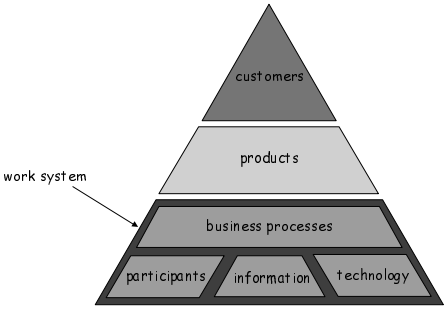
where do inf. systems fit?

- how can information systems add value?
  - primary processes
    - e.g. computer-aided design or manufacture; e-commerce
  - support processes
    - e.g. accounting or management support
  - execution and coordination
    - e.g. organisational communication
- what is the scope of information systems?
  - it's not simply the technology, but the process of putting the technology to organisational uses

work system analysis



work system analysis



elements

- customers
  - remember, both internal and external
    - processes can generate information products that are of internal value – examples?
  - the role of intermediaries
  - sometimes it's not "customers" who make purchasing decisions
    - recognise the different roles that people play

elements

- products
  - not just physical products
    - services
    - information
  - the product of the work system might not be the same as the product of the organisation
- business processes
  - have more to say on Wednesday…

elements

- participants
  - systems rely on people's interests, skills and involvement
    - so what motivates people to participate?
      - example – service engineers and sales force
- information
  - data… information… knowledge
- technology
  - not just "hi-tech" – remember the filing cabinet!
  - technology itself is not enough
    - has to be hooked into the other processes to be effective

five perspectives

- architecture
  - how does everything fit together?
- performance
  - how well do the pieces perform? the whole?
- infrastructure
  - what are we relying upon?
- context
  - what are the potential impacts?
- risks
  - what could go wrong? what are the dangers?

architecture

- how the whole system works
  - people and processes as well as technology
  - looking for problems of execution
  - high or low degree of structure?
    - examples…
    - software systems are always highly structured…
    - … but the ways that they fit into organisations are not
  - striking a balance
    - reduce redundancy, increase interdependence
      - what happens in case of failure?

performance

- how well do things work?
  - different metrics apply
    - speed? quality? cost? space?
  - each person's view of performance differs
    - performance isn't compositional, either…

infrastructure

- "the stuff that has to be in place"
  - think of buying a CD…
  - infrastructures have costs and benefits
    - who maintains the infrastructure? can I rely on it?
  - where does technology end and infrastructure begin?
    - one person's infrastructure is another person's technology… especially in service settings

context

- what else is going on around?
  - remember the "organism" metaphor…
  - many different elements to the context
    - the personal context of participants
    - the context that the organization puts in place
    - the context of the marketplace
    - the regulatory context imposed by government, etc.

risks

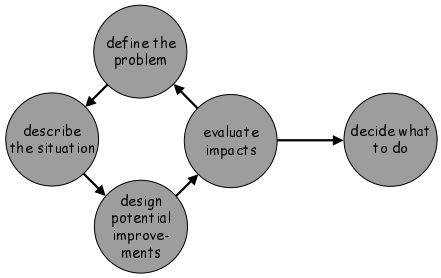
- probably the most-overlooked aspect
  - *process* risks
    - delivering on-time and on-budget is very rare!
    - the world is changing around you…
  - systems inevitably have flaws
  - but externally-imposed risks are just as bad
  - this isn't only an ethical issue
  - risks multiply
    - Perrow, "Normal Accidents"

matrix of concerns

	Customer	Product	Process	Participants	Info.	Tech.
Architecture						
Performance						
Infrastructure						
Context						
Risks						

the lifecycle

- WCA helps you to understand opportunities



asking questions

- where can technology help?
  - where are we focusing our attention?
- what do we expect it to do?
  - which aspects are we attempting to improve?
- what are the factors that affect performance?
  - how is this piece connected to the rest?
  - what impacts might that have?

what's next

- now that we've gotten the basics down
  - look at processes in more detail
  - look at information system design
  - understand how they contribute value
- next time…
  - business processes and workflow technology
  - read Alter chapter 3