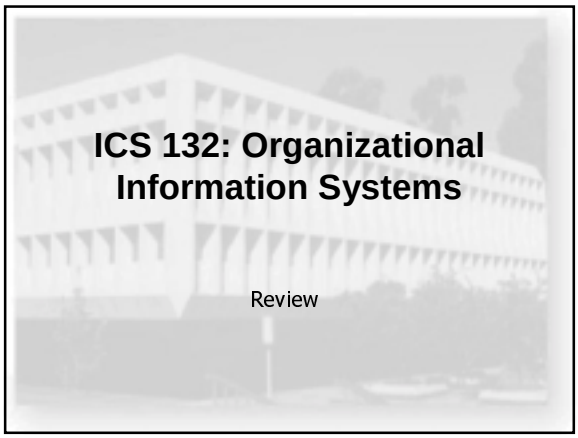

ICS 132: Organizational Information Systems

Review

organisations

- arrangements of people and processes that achieve collective action
- organisational life is about managing diversity
  - an organisation competes with others
  - organisations are made up of different groups and different people with different agendas
  - the trick
    - aligning personal welfare with organisational welfare

alter's view

- organisations are *systems*
  - "a set of interacting components that operate together to accomplish a purpose"
    - focus on: separation and interconnection
    - examples: manufacturing; retail
- five aspects of systems
  - set of components with some defined *purpose*
  - operating within *boundaries*
  - that separate it from the *environment*
  - transforming some set of *inputs*
  - into *outputs*

achieving collective action

- first, deciding what to do
  - ensuring an adequate basis to make decisions
    - Mintzberg's observation about executives
  - achieving consensus
- then, putting it into action
  - communicating decision
  - executing actions
  - ensuring coordination
  - monitoring effectiveness

decision-making

- organisations turn information into decisions
  - decisions have both winners and losers
  - the criticial issue is decision-making authority
  - organisational structures manage authority
    - the colocation of authority to responsibility
- the absence of perfect information
  - bounded rationality and satisficing

the role of information systems

- organisations depend critically on information
  - monitoring internal actions
  - building models of past and future performance
    - systematic management is a novel invention
- information systems extend organisational scope
  - improved information processing
  - improved coordination

the role of information systems

- information systems measure
  - internal and external factors
- information systems control
  - enforce processes and procedures
- information systems communicate
  - distribute information between people
- information systems process
  - information begets information…

performance and competition

- goal is making organisation more competitive
- models of competition
  - basic competitive strategies
    - cost leadership, product leadership, niche focus
  - Bakos & Treacy
    - bargaining power
      - switching costs, search costs, unique features
    - comparative efficiency
      - internal efficiency, interorganisational efficiency
- how do information systems contribute?

process-based systems

- processes regularise organisational action
  - monitoring, measuring, standardising
- process systems encode processes
  - monitor progress
  - enforce compliance
  - ease coordination
- but…
  - exception management?
    - people may have to step outside bounds of system
    - this may or may not be possible
  - mindless automatons?
  - the accuracy of the process model

communication systems

- extending organisational reach
  - communication supports coordination
  - communication supports integration
- different roles
  - the imagined role of email
    - communicating decisions
  - the practical role
    - sharing information
    - peer to peer communication & networking
    - new structures emerge…

designing information systems

- finding out what's going on
  - people generally can't tell you what they want
    - because they don't know what they can get
    - you need to develop requirements jointly
  - systems need to fit with what people do
    - it's about their needs, not your clever design
  - what people tell you isn't always what they do
    - often, people don't know what they do
    - real detail is often invisible and unnoticed
      - or people think, "that's not important"
  - if you want to find out, *GO AND LOOK*

designing information systems

- planning
  - it's easier & cheaper to catch problems early
    - planning is an opportunity to anticipate and test
    - also -- getting political buy-in
  - cost-benefit analysis
    - watch out for those intangibles!
- need to accommodate the entire lifecycle
  - a system is in "maintenance" for most of its life
  - designing for maintenance
    - scalability, modularity, flexibility, evolution

information management

- databases
  - the point of putting stuff in is to get it out
- what sorts of queries might we want?
- what needs to be true to support them?
  - key field
    - uniquely identify a record
    - tie together different records

information management

- normalisation
  - canonical forms of database structure
    - maximise processing efficiency
    - minimise redundancy and potential inconsistency
  - first normal form
    - eliminate repeating groups
  - second normal form
    - no attributes dependent on *part of* key
  - third normal form
    - no attributes dependent on non-key attributes

security

- managing risk
  - risks from accidental sources
    - system failure, loss, damage
  - risks from intentional sources
    - theft, malicious damage
- there's always risk
  - manage, not eliminate
  - allow people to make an informed judgement
    - encryption
    - identification
    - reducing opportunities for failure

the fundamental concepts

- diversity
  - internally to an organisation
  - the organisation and its operating environment
- structure
  - decision-making and authority
- information and information systems
  - monitoring, predicting
  - control
  - making it *fit*

next time

Good luck!