ICS 132: Organizational Information Systems

Form, Culture, and Adoption

culture

• culture is systems of attitudes and meanings
  – shared norms
  – "the way we do things around here"
  – values
  – "the things we care about"
  – assumptions
  – what I can expect of others
• out of this, a focus on meaning-in-use
  – "hello" as a greeting
  – "hello" as a mark of friendliness and community

culture

• culture is “taken for granted”
  – generally isn’t expressed (except perhaps in training)
• past, present, and future
  – culture is the accretion of ways of doing things and experiences that result
  – it frames how we think of new situations
    • opportunities for technological innovation?
    • opportunities to increase customer satisfaction?
    • opportunities to crush our competitors?

culture and history

• organizations “follow paths” through time
  – broad need to seek consistency and coherence
    • both for organizations and for individuals
    – e.g. how we construct stories and narratives
• past, present, and future
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  – it frames how we think of new situations
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culture and innovation

• how organizations “make sense” of the world
  – new situations, opportunities and challenges
  – where do ideas come from and how are they nurtured?
  – where do managers come from and how are they nurtured?
three views

- primary value: quality and customer care
- new ideas come from experience
- leaders work their way up

operators

- primary value: automation and applied science
- new ideas come from silence
- leaders understand technology

engineers

- primary value: profitability, control, value
- new ideas come from responsiveness
- leaders come from other management areas

managers

culture is not homogeneous

- culture is not homogeneous
  - different perspectives in an organization at once
  - dominant culture emerges from different elements of organizational practice

mintzberg’s structure

strategic apex

- people with overall responsibility
  - their concerns are global through the organization
- ensures organization serves mission effectively
  - again, a global concern
- duties
  - direct supervision
  - management of boundaries
    - interaction with the environment
    - development of strategy
  - anticipating and responding to change

five areas

- strategic apex
- middle line
- operating core
- technostructure
- support staff

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five areas

- strategic apex
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- operating core
- technostructure
- support staff
**operating core**

- people performing the basic work
  - generally the production of products and services
- four main functions
  - secure inputs for production
  - transform inputs into outputs
  - distribute the outputs
  - provide direct support to these functions
    - e.g. maintenance, inventory, training

**middle line**

- a "chain of command" that ties apex to core
  - why?
    - direct supervision is the basic mechanism, but doesn’t scale
  - essential concern is flow
    - flow up from core to apex
      - information, requests for change, disturbances, proposals
    - flow down from apex to core
      - information, resources, plans, rules, project
- transitions through the chain
  - the mediation from strategic to operating concerns

** technostructure**

- technostructure is largely analytic
  - analysts who serve the organization by affecting the work of others
    - e.g. through marketing analysis, cost projections, process design, product planning
  - mintzberg gives three examples (there are others)
    - work system analysts
      - e.g. human factors, process design
    - planning and control analysts
      - e.g. quality assurance, accountants, production scheduling
    - personnel analysts
      - e.g. recruiters and trainers

**support staff**

- organizational functions that support primary activities
  - this is organizational units, not individuals
    - individual administrative support people are not necessarily in "support staff" structure
  - but the cafeteria, library, and technical support organization are
    - distinguished from technostructure by function
    - support staff largely provides services
    - technostructure largely provides advice

**how this breakdown helps**

- first, illuminates the other views
  - organism view especially applies to the work at the strategic apex
  - machine view especially applies to the work of the operating core
- second, shows organizational contexts
  - different cultures apply in different units
  - different cultures emerge in organizations in which different parts of the structure are dominant

**pressures**

- each unit seeks power in its own ways
  - strategic core seeks direct control
  - technostructure seeks standardization
  - operating core seeks to minimize administrative influence
  - middle line seeks autonomy through balkanization
  - support staff seeks influence through collaboration
- different ways to balance these pressures
  - different forms result depending on dominance
### simple structure
- dominant element is the **strategic apex**
  - strategic apex strives for centralization, to retain control over decision-making
  - dominant mode of coordination is through **direct supervision**
  - organizations in which this effect dominates exhibit the **simple structure**

### machine bureaucracy
- dominant element is the **technostructure**
  - technostructure favors standardization
  - maximises the leverage of scientific analysis
  - a push towards standards, esp. work processes
  - the form that results is the **machine bureaucracy**

### professional bureaucracy
- dominant element is the **operating core**
  - members of the operating core seek to minimise administrative influence
  - maximise people’s control over their own work
  - achieve coordination through standardization of skills, not procedures
    - that is, through what we do, but with control over how
  - a pull for professionalism
  - that is, a reliance on externally-validated skills
  - when this dominances, the result is the **professional bureaucracy**

### divisionalized form
- dominant element is the **middle line**
  - must pull power down from strategic apex and up from operating core
  - concentration in each individual unit
  - creates separate fiefdoms ("balkanization")
    - each with their own local control and decision-making
  - this is the **divisionalized form**

### adhocracy
- dominance of the **support staff**
  - not when its members are autonomous
    - that wouldn’t make sense
  - rather, when their collaboration is needed
  - this is maximised when the organizational structure is highly flexible and variable
    - separate independent units interacting in fluid ways
    - requires more intricate infrastructural support
  - when this pressure dominates, the result is the **adhocracy**
    - "ad hoc" (lit. "towards this")
      - without planning, constituted for a single purpose, improvised...

### movie company example
- consider a movie company
  - a small company with a strong director
    - simple structure
  - a larger company with many strong directors
    - divisional form
  - many skilled actors and cameramen
    - professional bureaucracy
  - unskilled labor mass-producing cookie-cutter films
    - machine bureaucracy
  - innovation and creativity
    - the adhocracy
information systems impacts

• what are the roles of information systems in supporting these different pressures?
  – system adoption is different for each group
    • see the Grudin paper
  – organizational technology adoption reflects different dominant concerns

• examples of these forces at work
  – workflow and process management
    • on a small scale
    • on a large scale
  – tendencies towards centralization and decentralization of information systems functions
    • and the role of data
  – web servers vs web services

next time...

• note -- no lecture on Tuesday
• we’ll pick up again on Thursday
  – finish off culture
  – talk about the midterm
    • it is the following Tuesday, 2/17