ICS 132: Organizational Information Systems

Three Metaphors for Organizations

metaphors

• three metaphors of organization
  – each metaphor suggests a way of thinking
  – none of them is absolutely right!
  • need to see all sides of the issues
    • useful in different circumstances
  – what varies?
    • historical period, relations to other disciplines, boundaries
    • implications for design
  – our questions for today:
    • how do these metaphors explain what organizations do?
    • how do they explain how people act in organizations?
    • how do they explain how organizations use information?

organizations as machines

• basic idea
  – organizations are made up of many parts
  – these parts are put together to perform work
  – organizations transform inputs into outputs
    • e.g. raw materials to products
  – they do this more or less efficiently
    • efficiency can be measured and improved
  – studied and designed through applied science
    • observe, model, reason, predict
  • this model is not restricted to organizations
  – we often use machine analogies...

basic principles

• primary principles
  – structure
  – efficiency
  – measurement
• the key is repeatability
  – first standardize, then optimize
  – the importance of interchangeable parts
    • not just components, but people too

organizations as machines

• similes and metaphors
• metaphors are conceptual systems
  – a set of associations between one thing and another
  – framing ways of thinking
  – arguably, our brains are wired in terms of metaphors
    • Lakoff and Johnson, "Metaphors We Live By"
    • examples
      – time is money
      – argument is war
      – activities are containers
      – up is good, down is bad

metaphors

organizations as machines

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organizations as machines

- machines have parts
  - "this is metric #5 grommit"
  - what’s significant about this view of parts?
    - we define equivalences between one part and another
    - all metric #5 grommets are created equal
    - parts can be substituted for each other
    - it’s easier to manage individuals as instances of a class

scientific management

- Frederick Taylor (1856-1915)
  - founder of "scientific management"
- Taylor’s principles
  - shift responsibility for organizing upwards
  - use scientific methods to determine best way to work
  - select the best person for the job
  - train them to work efficiently
  - monitor performance
- Hero or villain?

herb simon

- a renaissance figure
  - computer science, cognitive science, psychology, economics...
- the rational model of organizations
  - principal components
    - formal goals
    - operations to achieve them
    - evaluating costs and benefits
      - does this seem familiar, perhaps?
    - bounded rationality -- planning as satisficing
      - noone has perfect knowledge
      - continual process of adjustment and replanning

strengths and weaknesses

- can be very effective, in certain situations
  - fast food, automated production, safety-critical
  - situations where the parameters are known
- but...
  - assumptions of homogeneity
    - everyone shares the goals...?
  - encourages a "mindless" attitude
  - hard for people to feel involved
  - not suitable for all kinds of work
    - how about advertising? law?

information and systems

- what’s the role of information systems?
  - enforcing standardization
  - conveying information through the organization
  - monitoring and measuring performance
  - maximizing efficiency

example: UCI

- how is UCI organized structurally?
- what are the formal processes?
- how is standardization achieved?
- how do information systems support them?
organizations as organisms

- basic idea
  - organizations are made up of individuals who have different needs
  - it's about balance and harmony, not about regimentation
  - organizations operate within an environment with which they interact
- going beyond machines...
  - recognizing the needs of individuals
  - recognizing the diversity of organizational elements
  - recognizing the diversity of organizational forms

individual needs

- Hawthorne studies
  - Hawthorne plant of Western Electric, 1920s
  - from Taylorism to motivations
  - expanding focus to look at social attitudes and preoccupations
  - human needs in the workplace
    - informal organization alongside the formal
    - friendship, social bonding, self-respect
    - biological needs, just like food and shelter

environment

- organizations are environments
  - settings in which human actions take place
- organizations do not stand alone
  - they operate in an environment
    - factors?
  - they depend on the environment and react to it
    - success depends on adaptation, not regularization
    - no "one best way" of organizing
- how does this work?
  - what are the mechanisms by which organizations respond to their environment?

key concepts

- homeostasis
  - self-regulation
  - maintaining a steady state
- differentiation and integration
  - think of cells and organs...
- requisite variety
  - internal complexity must match external complexity
- evolution
  - variation and selection
  - driven by the (changing) environment

strengths and weaknesses

- a broader view
  - not just the organization but the environment
  - organizations as processes not just structures
  - attending to social and organizational needs
- accounting for diversity
  - explains different organizational forms & strategies
  - focus on innovation
- very concrete
  - hard to generalize
  - metaphor may be too compelling

information and systems

- emphasis is on interaction and adaptation
  - information about the environment
    - what's outside the organization: customers, clients, competitors, business trends...
  - information needs change
    - the role that information plays can change too
    - as the organization evolves, information systems must evolve too
    - information systems need to be designed to accommodate change
**example: UCI**

- what different constituencies operate within UCI?
- what sets of goals do they each have?
- what else is in the environment with which UCI interacts?
- how is balance maintained?
- how does UCI evolve?

**organizations as cultures**

- what is "culture"?
  - Beethoven's Fifth?
  - E. coli?
  - a series of novels by Iain M. Banks?
  - the other meaning is harder to define...

**organizations as cultures**

- what is "culture"?
  - systems of meaning (the "web of signification")
  - Western culture, for example:
    - emphasizes personal achievement
    - values practicality
    - sets great store by wealth and possessions
  - these are all values and meanings that we associate with features of the world around us
    - the "meaning" of personal wealth is culturally defined
    - the value of objects or actions
      - the material value
      - the symbolic value

**organizations as cultures**

- organizations are cultural phenomena
  - they exist within national cultures
  - the means through which cultural ends are achieved
    - e.g. wealth and status
    - organizations are not a feature of agrarian societies...
- organizations reflect cultural expectations
  - "job for life" or hopping from place to place
  - stability or "hotelling"/"hot desking"
  - innovation or tradition
  - personal responsibility or following orders
  - teamwork or individualism

**organizational cultures**

- what do they make you think of...
  - Ben and Jerry's?

**organizational cultures**

- what do they make you think of...
  - Ben and Jerry's?
  - Chase-Manhattan?
organizational cultures

• what do they make you think of...
  – Ben and Jerry’s?
  – Chase-Manhattan?
  – Microsoft?
  – anything.com?
  – Boeing?

organizational cultures

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organizational cultures

• where do they come from?
  – cultures reflect history
    • meanings evolve over time
    • ideas become habits become traditions
    • attain more and more symbolic value until perhaps that’s all that’s left!
  – when does a meeting become a ritual?
  – cultures reflect individuals
    • the dynamic manager, the charismatic leader
    • how much of Microsoft is Bill Gates?

strengths and weaknesses

• important to recognize role of belief systems
  – paying attention to symbolic value
  – helps us question assumptions
  – insight into what happens when organizations interact

• dangers
  – culture isn’t homogeneous
  – culture is always changing
  – value-laden

information and systems

• systems reflect values
  – the processes
    • how does this reflect our organizational values?
      – customer-first, quality, assessing environmental impact...
  – information systems too
    • examples?
      • information has symbolic as well as material value

• cultural “fit” is important
  – again, the goal is not just to understand what the other guy does, but to understand his point of view
**example: UCI**

- what are UCI’s cultural values?
- how are those expressed in UCI’s structure?
- how are those expressed in UCI’s processes?

**summing up**

- each metaphor tells you part of the story
  - internals vs externals
  - actions vs attitudes
  - wholes vs parts
- each reveals something about information
  - the roles that information can play
  - the stability & partiality of representations
  - how information reflects assumptions and beliefs
- all three are relevant simultaneously
  - it’s a question of looking through the right lenses

**your turn**

- homework exercise
  - take two organizations
    - one of mine (Microsoft, Mafia, Red Cross)
    - one of your own
  - take four metaphors
    - three of mine (machine, organism, culture)
    - one of your own
  - view each organization with each metaphor
    - how does the metaphor fit?
    - what does the metaphor illustrate?
  - about a page each
    - eight pages total