Organizational Complexity and Technical Challenges in the Construction of Virtual Organizations

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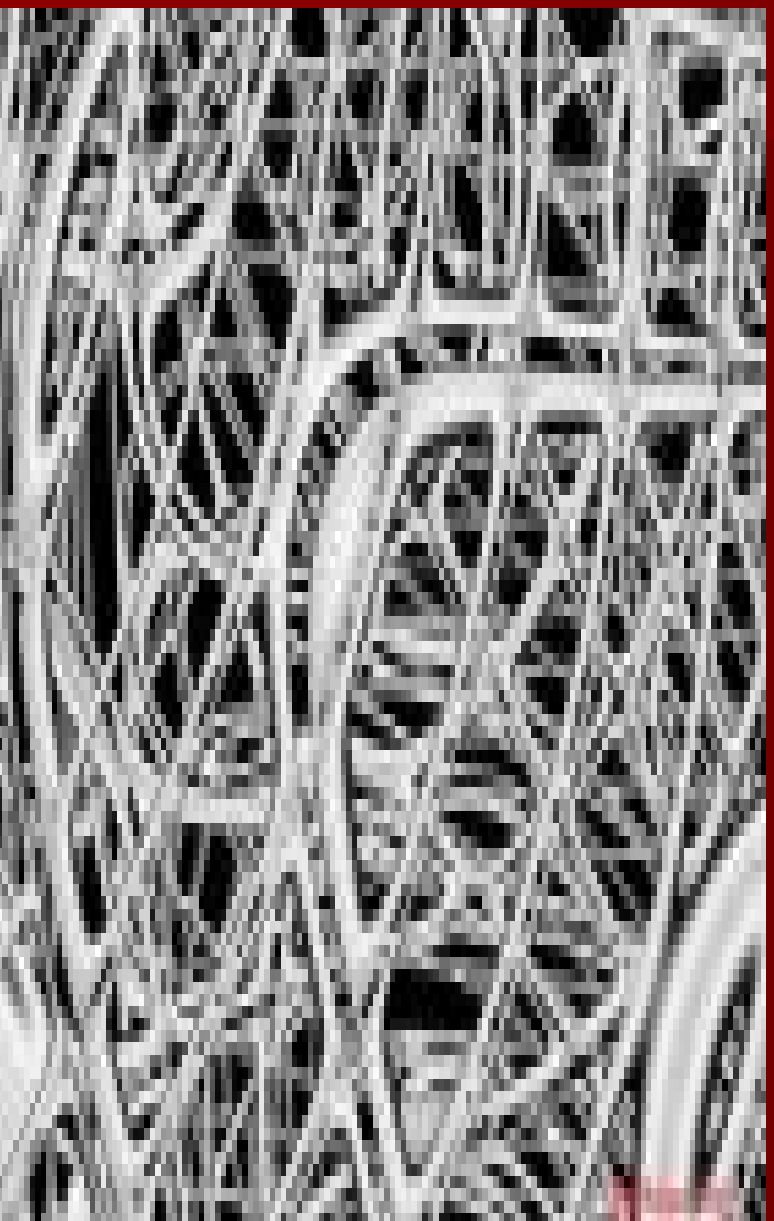
Road Map

- It is a complex world
- Old virtual organizations
- Types of VOs
- Benefits
- Challenges
- Why virtual organizations are of interest to e-governance and e-administration
- Possible applications
- Questions?

A Virtual Organization

- Is not a distinct structure:
  - A strategy for revolutionizing communication and collaboration, asset configuration and knowledge dissemination, often by utilizing new communication and information technologies



Current research on virtual organizations is often based in complexity theory

- Adaptive and strategic choice theories
- Metamorphosis theories (e.g., life cycle theories)
- Evolutionary theories like population ecology

Lessons from Complexity Theory

- Theories and practice can co-evolve
- Look for patterns, not predictability

Old Virtual Organizations

- Distributed sales (Dutch East India Company and door-to-door salesmen)
- The decline of the studio system in Hollywood created a model of independent partnerships
- Hollowed-out organizations (sending functions elsewhere as part of downsizing)
- Telecommuting (originally was phone work)
- Keiretsu (network of Japanese companies that own shares in each other for security)

Types of Virtual Organizations

- Three basic categories
  - Virtual integration—where a small core of people organize numerous processes done usually by contractors (e.g., Nike)
  - Temporary networks—where individuals and small groups come together to make products or get someone elected—also called evanescent organizations (e.g., movies)
  - Geographic dispersion—where employees are often isolated or where teams are set up around the world (e.g., global engineering and telecommuting)

Examples

- AT&T teleworkers are part of a “network-centric organization”
  - Close to 90% of its 50,000 workers participate in telecommuting
  - 30% are only teleworkers, 41% telecommute regularly
- Productivity is measured on availablity, quantity, quality, quantity/time and it is steadily going up according to AT&T

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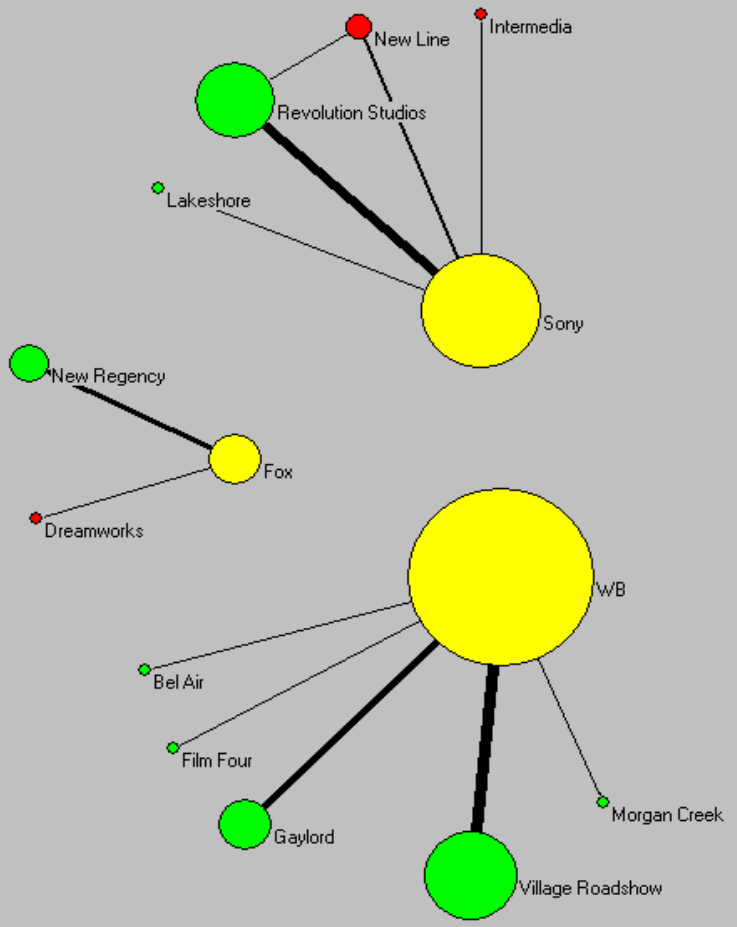
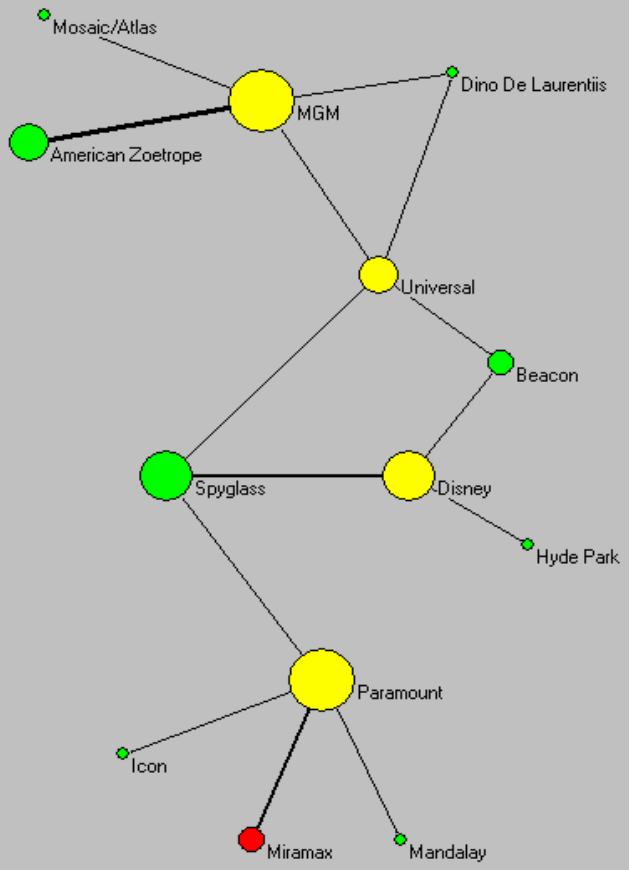
Movie Studio Networks





Virtuality in Organizations

- Three features:
  - The creation of a common value chain
    - (Benjamin & Wigan, 1995; Rayport & Sviokla, 1995)
  - Processes supported by distributed information technology
    - (Palmer & Speier, 1997)
  - A high degree of informal communication (traditionally they lacked formal rules, procedures, norms, clear reporting relationships)

Virtual Organization Strengths

- Unlike a bureaucracy, which is a fixed set of relationships for processing all problems, the network organization molds itself to each problem
- Cost beneficial—reduced real estate, faster through-put (often required re-engineering) higher productivity in many cases from less time on the road and fewer distractions (especially if working from home)
- Reduce impact of time and space

VOs are Sometimes in the Dark

- Low individual commitment
- Role overload and role ambiguity
- Absenteeism and social loafing
- Lack of permanency and consistency perceived by customers/clients
- Problems of reliability
- Little knowledge of partners (e.g., sweatshops)

One Challenge of Globalization:

Creating Virtual, Smart Organizations

To Change to a Virtual Organization

- Major transition that requires links to:
  - Organizational processes (e.g., knowledge management)
  - "Business" processes (e.g., order fulfillment)
  - Human resources (e.g., reward systems)
  - Information and communication technologies (e.g, Intranets, Decision Support Systems)

Series of Studies Looking at Change to VSOs

- Investigating government organizations, non-profits, IGOs, NGOs and corporations
- Utilizing a wide variety of portals, platforms, software and hardware
- Knowledge management requirement also means a focus on communities of practice and other non-ICT collaboration and sharing tools and practices

Preliminary Findings-Tasks

- Not all tasks are easily performed virtually--start with tasks most suitable to virtual form because they are either:
  - Not hurt by virtuality (e.g., efficient Internet based process already exists; communication hierarchy is relatively unchanged)

or

  - They benefit from the virtual form (e.g., tasks that utilize distributed resources, are communication intensive and based on competence or expertise)

Preliminary Findings-Hierarchy

- Hierarchy in virtual organizations has more to do with the efficiency of communication than formal authority structures
- “Flattening” the organization only works to a degree and levels are not all bad
- Organizations making the transition to virtuality need to focus on maintaining member identification as command structures become ambiguous

Preliminary Findings-Planning

- Success hinges on:
  - Carefully designed, interdependent processes designed to achieve shared organizational objectives are best (many information technologies are designed independently)
  - Effective training of personnel in the use of information and communication technology as knowledge (it is often insufficient)
  - Reducing role ambiguity (it is often the largest problem)

Preliminary Findings--Speed of Change

- Diffusion is the key:
  - Need to develop a learning culture
  - Helps to have permeable boundaries
  - Coordinating “communities of practice”
    - get the “system” in the room
  - Managers are accountable for breadth and depth of the change

Knowledge Management in VSOs

Transitions to virtual organizations are designed assuming that the following is correct:

This is true only if there is cultural readiness--it is amazingly easy for people to ignore technology!

VSOs

- Information is active versus static (everyone in the organizations can get what they need and it it not trapped in old IT systems or people unwilling to share knowledge)
- Work can be accomplished in a variety of ways (e.g,. there is redundancy and flexibility in the network)
- Knowledge is actionable—what works in what situation requires sophisticated reasoning and a multi-dimensional understanding of capability and context

Challenges of Change

- Research findings indicate that change:
  - Is hard to envision
  - Even harder to manage
- Many of the organizations had difficulty getting people involved in the transition to virtuality
- Managers found it was hard to say the right thing--even small issues could be threatening

Preliminary Advice for Change Managers

- Need to create information exchange roles in addition to formal authority roles
- Start the change process with people that display a high-degree of “remote work” self-efficacy (they can make decisions and execute behaviors on their own)
- Develop shared-situational awareness--e.g., common ground, shared mental models and focus on *what others don´t know*

Preliminary Advice for Change Managers, continued

- Although standardized IT software and tasks often lead to the notion that a larger span of control can be designed in the VSO ("technological leveling"), smaller teams appear to perform better due to the requirements of e-communication
- A fair number of employees will need to be recycled through training and not all can adapt
  - If you cannot change the people, then change the people!
- Think of data-bases in terms of "organizational memory"--accessible and externalized

Risk Mitigation

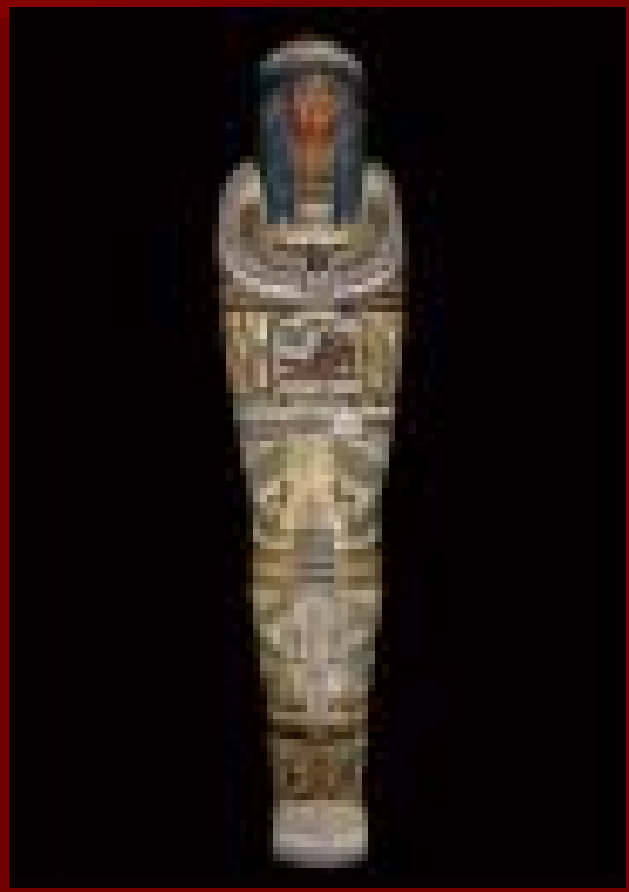
- Keep up personal relationships--significant problems arise with suppliers that miss the face-to-face interactions
- Security is better than ever but most problems were related to individual practices (e.g., leaving the computer on while out to lunch)
- The right people in the right jobs

Make Sure the VSO Strategy Fits

A lot of "copying" as opposed to adapting is happening as organizations restructure or reengineer virtually

The “smart” part of virtual organizations:

You cannot hold most knowledge and information captive. There needs to be a balance between competitive strategy in the short term and long-term sustainability.



Questions