Virtual Organisations and Virtual Teams

Topics

- The emergence of the virtual organisation
- The role of virtual teams in the organisation
- The role of supporting technologies to underpin the virtual

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New forms of organsiation

- Current organisational theories focus on nature and structure of organisations
- Different forms of organisation have emerged as a result of new technologies
- These are broadly termed virtual organisations with the work units called virtual teams

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Virtual Organisations

- A virtual organization or company is one whose members are geographically apart, usually working via networked computer applications while appearing to others to be a single, unified organization with a real physical location
- **"an organization distributed geographically and whose work is coordinated through electronic communications."**

Virtual Corporations

- Produce virtual products
  - products that adapt in real time to changing customer needs
- Emphasis on quality and service
- Move away from inflexible mass manufacturing models
- Return to craftsmanship and customization - (mass customization)

Three Driving Trends in Virtual

Technology
- Performance; Connectivity; Portability

**Information/Knowledge Work**
> 70% of work is information intensive

Globalization
- of markets, products and resources/labour

New Strategies

- 24-hour unmanned 'shop'
  - the WWW amazon.com models.
- Remote back-office, call centre
  - UK Banking industry
- Outsourcing
  - consultancy units in the UK/US and software in India
- Global partners/individuals
  - Manufacturer in uk, designer in Finland
- Teleworking
  - Formal models of remote working - Ericsson

Virtual Work Patterns
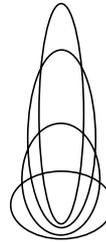
Virtual Organizations

Virtual Labs etc.

Virtual Teams

Telework

Structuring of work in organisation

- Most organisations follow basic product principles in their structure
  - Henry Ford – principle of mass production to tackle the problem of reduced profit
  - Institutions of mass production --- collectively referred to as Fordism
  - Associated with this work is the work of Taylor on "Scientific Management"

TAYLORISM

- Frederick Taylor (1911) *Principles of Scientific Management*
  - devised a means of detailing a division of labor in time-and-motion studies and a wage system based on performance.
  - "Taylorism" would become the standard for businesses worldwide
- The main elements of the Scientific Management are:
  - time studies (e.g., screw on each bolt in 15.2 seconds),
  - standardization of tools and implements, the use of "slide-rules and similar time-saving devices",
  - instruction cards for workmen (detailing exactly what they should do),
  - task allocation, etc.
- Taylor called these elements "merely the elements or details of the mechanisms of management"

Taylorism and Task Allocation

- The key idea of scientific management is the concept of task allocation.
- Task allocation is the concept that breaking task into smaller and smaller tasks allows the determination of the optimum solution to the task.
  - "The man in the planning room, whose specialty is planning ahead, invariably finds that the work can be done more economically by subdivision of the labour; each act of each mechanic, for example, should be preceded by various preparatory acts done by other men."
- The notion of task has becoming problematic due to its lack of flexibility

Ford and mass production

- Ford pioneered the modern model of mass production
- which is often said to date from the development of the first moving assembly lines, put into operation at Ford's Model T plant at Highland Park, Michigan in 1914

- The assembly line increased labor productivity tenfold and permitting stunning price cuts in Ford cars
- Product price reduction increased markets and led to the increases in profits

Assembly and Deskilling

- Fordism displaced predominantly craft-based production in which skilled laborers exercised substantial control over their conditions of work
- Fordist production entailed an intensified and rigid industrial division of labor;
  - increased mechanization and coordination of large scale manufacturing processes (e.g., sequential machining operations and converging assembly lines)
  - a steady flow of production;
  - a shift toward the use of less skilled labor performing, ad infinitum, tasks minutely specified by management;

Problems of Fordism, Taylorism

- Rigid production systems
- Labor-management problems
- Market what is cheap to produce, not what consumer wants
- "Just in case" inventory
- These structures increasingly proving problematic as organisations needed to change

Virtual Products Are Like Services

- The shift to information rather than manipulation changes the nature of the product of organisations
- Services are:
  - Intangible
  - Consumed when produced
  - No inventory
  - co-produced by customer
- The service oriented model allows the organisation to be much more flexible in how it works

Virtual Teams

- Teams that work together are seen are the center of virtual organization
- Often these are called knowledge teams reflecting the information intensive nature of work
- Best knowledge teams: 5-8, multi-disciplined
  - Larger groups for cohesion or networking but work teams small and focused!
- Each individual in a number of different teams
- Focus is on flexibility and responsiveness. .

Role of Time in Virtual Corp.

- Shorter design cycles with more rapid changes
  - In manufacturing this is seen as concurrent engineering
- Faster time to market
- Quick response - feedback from consumer
- Just in time processes and much sleeker supply chains

Role of Information

- Information on customer needs permits customisation and tailoring of services
- Highly skilled knowledge workers developed and supported by specialist tools
- Integration of design, production, marketing, sales, and service by improved communication
- New methods of control that cut across the traditional organisational units

Dimensions for Organization Design

– A division of time and place becomes the guiding principle.

	Same Place	Different Place
Same Time	stationary	stationary
	mobile	mobile
Different time	stationary	stationary
	mobile	mobile

Virtual Organization Perspectives

– Telework
using technology to enable remote work and cooperative work among dispersed workers
– Telemanagement
challenges of managing/coordinating "invisible" workers
– Teleservices
once a virtual organization exists, new services become possible

Virtual Organization Design Principles

– Modularity - small manageable units
  – The Open-Closed Principle - impression of coherent system, but dynamically reconfigurable
  – Organization is "constructed" after customer request
– Heterogeneity in competencies
  – Complementary Principle with multiple skills sets being blended together
– Time and Spatial Distribution - with boundaries defined by comm infrastructure
  – Transparency Principle - customer doesn't know where organizational service provision is, but appears to be where customer is

Limits to Virtualization

– Are all face to face interactions substitutable by telecom technology?
– Remember role of informal, spontaneous interactions
– How is trust developed between modular components not legally bound?
– Technology deployment alone not enough (users' appropriation)

How Groups Cooperate
Supporting Technologies

– Team and space used extensively to understand how to support people cooperating (The Groupware time-space Matrix)

	Same Time	Different Times
Same Place	Face to Face Interaction	Asynchronous Interaction
Different Places	Synchronous Distributed Interaction	Asynchronous Distributed Interaction

– Technologies from each of the quadrants can be be used to support different organisational activities

Meetings (Same Time Same Place)

– Even virtual teams need to get together to discuss things in meetings
– Meetings are a central part of organisations.
– High level management can now spend well over half their time in meetings.
– Meetings can be unfocused and decision making is problematic.
– Electronic Meeting rooms provide software support for the meeting process.

Desktop Conferencing
(Same Time Different Place)

- Geography often makes it difficult to get a virtual team together for a meeting.
- **Video Conferencing** has been a previous approach to this problem with dedicated conferencing rooms
- **Desktop Conferencing** allows the contents of a windowing system to be replicated and shared across a number of windows and a range of media to be included.
 - NetMeeting from microsoft most recent example of this

Shared Information Spaces
(Different Time Same Place)

Shared Information Space
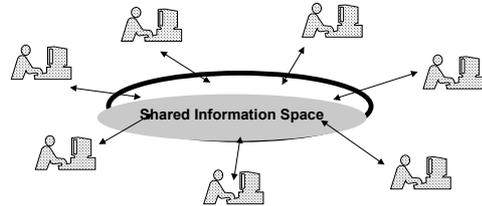
Shared Information Spaces

- It is difficult in an organisation to get busy people together at the same time.
- Virtual teams need to coordinate in order to work together on common problems.
- In shared space systems interaction occurs via a shared information space or information store
- Different presentations often provided via world wide web

Inter-team communication
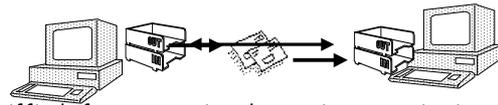
- Difficult for remote virtual teams in an organisation to coordinate their work in time and space.
- Message systems allow the management of electronic communications between virtual teams. (Some of whom may be mobile)
- Many systems offer support for the work process taking place and audit facilities for it. (e.g. Quality Assurance)
- Message control is often used as a management technique

Remember though isn't Just Technology
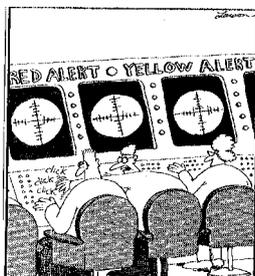
" OK, Baxter, if that's your game, I'll just reach over and push a few of your buttons."