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# Virtual Corporations and Knowledge Management

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## Outline

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- Virtual Corporation
  - Characteristics of Virtual Corporations
  - Virtuality & Virtuality Matrix
- Virtual Organizing
  - Dimension & Frameworks
- Knowledge Management in Virtual Corporations
  - Management Issues
  - Technology Issues
  - Cultural Issues
- Virtual Work Support System: An Example

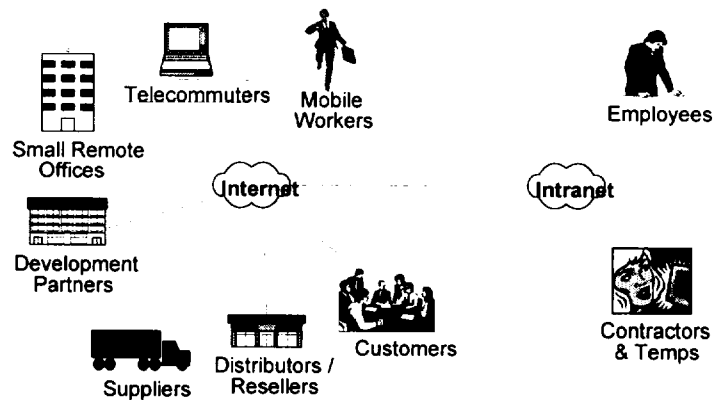
## Virtual Corporations

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- A temporary network of independent corporations linked by information technology to share skill, costs and access to one another's markets. The corporations quickly unite to exploit a specific opportunity and will disperse afterwards
- Characteristics of Virtual Corporations
  - Based on core competencies
  - Network of independent organizations
  - One identity
  - Based on information technology
  - No hierarchy
  - Distinction between a strategic and operational level: to cope with the difficult control problem

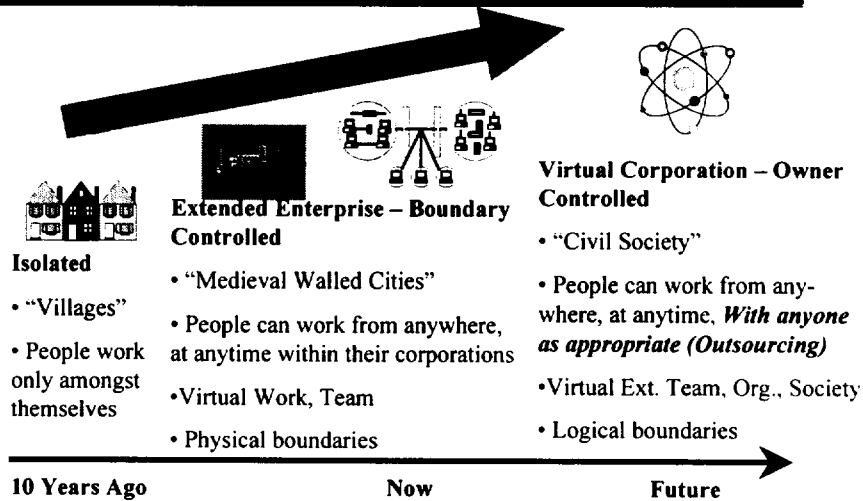
## Virtual Corporations: Another View

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*Extending the intranet to customers, ..., across the internet to engage in e-business*

## Getting to the Virtual Corporation



### Isolated

- "Villages"
- People work only amongst themselves

### Extended Enterprise – Boundary Controlled

- "Medieval Walled Cities"
- People can work from anywhere, at anytime within their corporations
- Virtual Work, Team
- Physical boundaries

### Virtual Corporation – Owner Controlled

- "Civil Society"
- People can work from anywhere, at anytime, *With anyone as appropriate (Outsourcing)*
- Virtual Ext. Team, Org., Society
- Logical boundaries

10 Years Ago

Now

Future

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## Virtuality

- Instant Flexibility in Space, Time and Structure
- Economics of virtuality: e.g., transaction cost in EC

	Airline Ticket	Banking	Bill Payment	Insurance Policy	Software Distribution
Traditional System	8.0	1.08	2.22-3.32	400-700	15.0
Telephone-based		0.54			5.0
Internet-based	1.0	0.13	0.65-1.10	200-350	0.20-0.50
Savings (%)	87	89	71-67	50	97-99

- Real source of benefit in digital economy
  - Physical → Virtual
  - Body → Brain
  - Atom → Bit

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## Virtuality Matrix

Virtual	Telecom Banking Insurance	MS Nike Airline Dell	S\W EC Travel Agent Consulting AOL Yahoo eBay
Product	Cement Lumber	Shopping Malls Barnes&Noble	CDNow Cisco Amazon
Physical	Physical	Process (Service)	Virtual

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## Dimensions of Virtual Organizing

- Strategy
  - Objectives and the Core Competencies
- Process
  - Life cycle of Co-operations
  - Legal, organizational, management, operational processes
- Structure
  - Principles of autonomy, recursion, and viability
- Knowledge
  - Capture and share organizational knowledge and learning
- Culture
  - Supportive culture and *TRUST*

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## Framework for Virtual Organizing (Venkatraman & Henderson)

Vectors	Market Interaction (Virtual Encounter)	Competency Leverage (Virtual Sourcing)	Work Configuration (Virtual Work)
<i>Stages of Virtuality</i>			
Stage 1	remote product or service experience	efficient sourcing of standard components	maximizing individual expertise
Stage 2	product or service cus- tomization	effective asset leverage	harnessing organizational expertise
Stage 3	shaping custom solutions	create new competencies through alliances	leveraging community expertise



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## Knowledge Management in Virtual Corporations

- Creation, access and share of tacit & explicit organizational knowledge by virtual worker or team
- Knowledge Management in VC
  - Knowledge Paradox
    - ✓ Tacit knowledge, which is of central importance to innovation, cannot be exchanged by electronic means
    - ✓ Innovation cannot occur in virtual organizations?
  - Explicit Knowledge in Virtual Corporations
    - ✓ Degree of knowledge standardization and formalization
  - Management of Virtual Corporation Risks
    - ✓ Automating Access to Critical Company Information, Knowledge
    - ✓ Exchanging Sensitive Information
    - ✓ Enabling Remote Access to Business Transactions



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## Potentials and Restrictions of KM in VC: A Consulting Company Case

Vectors	Market Interaction (Virtual Encounter)	Competency Leverage (Virtual Sourcing)	Work Configuration (Virtual Work)
<i>Stages of Virtuality</i>			
Stage 1	Knowledge transfer to clients follows a detailed, highly formalized and structured catalogue of concrete steps processed by care consultants on the spot	Knowledge sourcing is predominantly done using the existing network	High degree of knowledge processing time efficiency is possible using several highly structured and formalized consulting aids
Stage 2	Knowledge customization happens on the basis of the "program matrix" which represents a bundle of pre-structured and highly modularized consultation knowledge products	<i>Restricted possibilities to design new solutions for clients due to the strategic need for knowledge stability</i>	Access to the knowledge base in terms of project documentations and reports allows to harness organizational knowledge
Stage 3	<i>Restricted possibilities of clients' knowledge integration due to the high degree of formalized and structured knowledge solutions</i>	<i>Restricted possibilities to create new competencies through alliances due to the strategic need for knowledge network stability</i>	Knowledge development outside of the network is possible via seminars given by external experts

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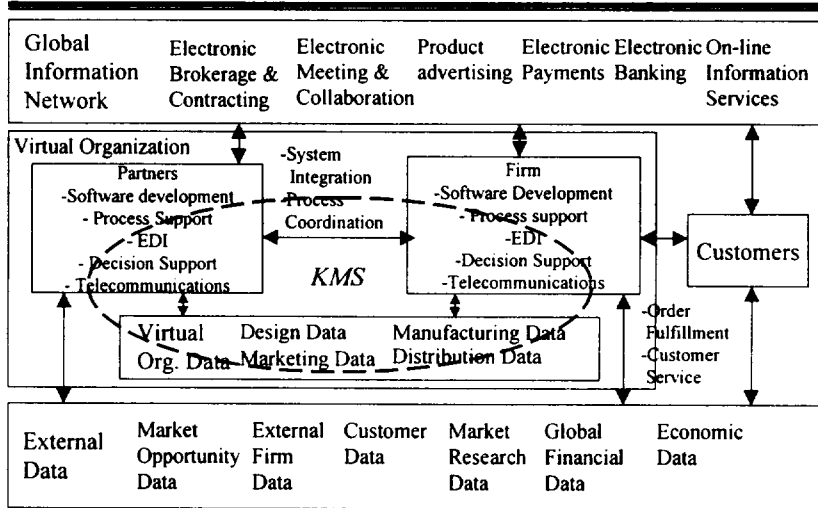
## Issues in Knowledge Management in Virtual Corporations

- Management Issues
  - Management of Work, Process, People, Teams, Process, Information, Knowledge
- Technology Issues
  - Information Infrastructure
  - IT: Groupware, Workflow, Collaboration Technologies, ...
- Cultural Issues
  - Share, Collaborate, Innovate
  - Trust

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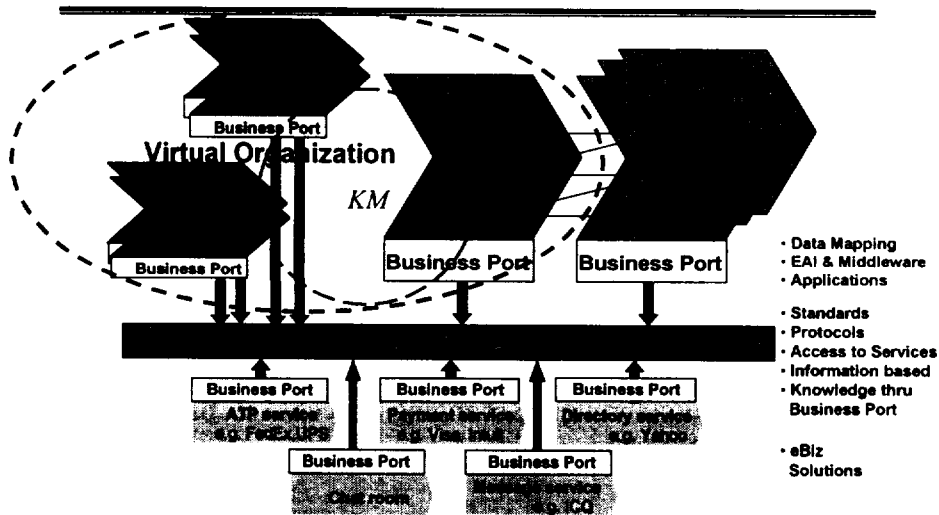
## Information Infrastructure for Virtual Organization



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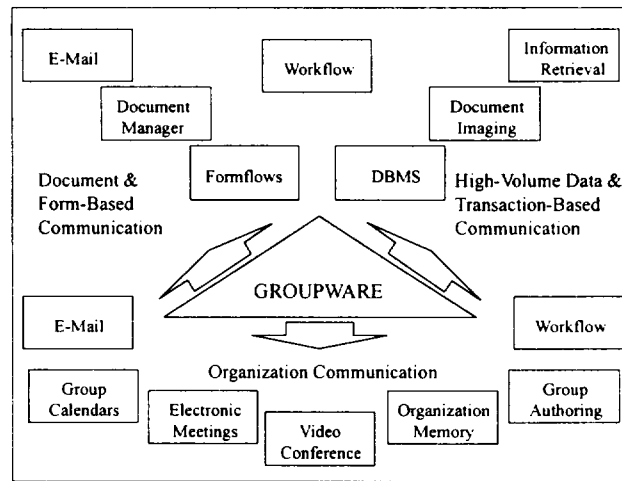
## New Model of Business Networking



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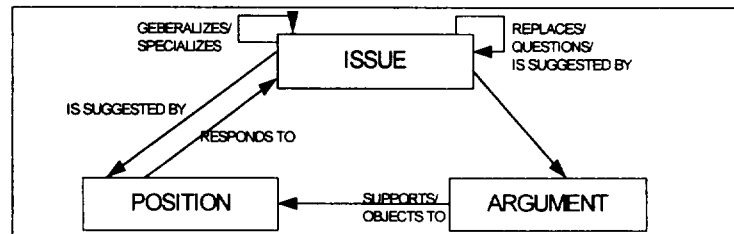
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## Groupware for Virtual Corporations



## Collaboration through Conversation

- IBIS: Conversational model (Conklin, 1988)



- Language Action Theory
- Collaboration through exchanging Speech/Act- based semi-structured message
- Coordinator



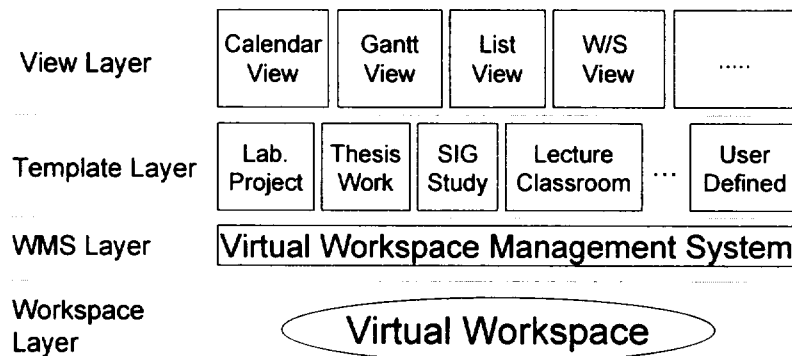
## Virtual Work Support System: An Example

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- Project management for virtual teams
  - Small group of people, performing knowledge-intensive project
  - Coordination using structured messages
- Knowledge management
  - Linking people with people, and people with information
- ‘Project Memory’ system.
  - Work-centered accumulation of project knowledge
  - Organizing project knowledge for reuse in future
- Integration of ‘Virtual Work (Project) Management’ and ‘Knowledge Management’

## Layered Architecture of VWSS

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## Functions of VWSS

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- Activity Management
  - Activity-centered Knowledge Management: 'Activity Folder'
- Messaging
  - E-mail & Structured Messages (Speech-Act Theory)
- Document Management
- Group Decision Support
  - Threaded Discussion: Semantic Threading
  - Voting
- Active Calendar
- Workspace Management
- Access Control

## Final Words

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- Virtualization is a Reality
  - Economy & Convenience
  - A Way of Life
- Virtual Corporation is the Future
  - Clear Benefits
  - Knowledge Management is a CSF for VC
- No Body Knows the Final Picture
  - Cultural & Physical Barriers
  - Knowledge Paradox
  - Technological, especially IT, Progresses
  - Trust or Trashed