



# Knowledge Transfer

## WK-5

**“Finding effective ways to let people talk and listen to one another.”**

**KT is embedded in spontaneous ‘conversations’**

**“Successful knowledge transfer involves neither computers nor documents but rather interactions between people.”**



**“When Good Enough is Not Good Enough.”**

**“Knowing What You Know... Challenge”**

**“Can You Know What You Know...?”**



**“The best information environments will take advantage of the ability of IT to overcome geography but will also acknowledge that the highest bandwidth network of all is found between the water fountain and the coffee machine.”**



**“We have documents, document databases, an Intranet Web, groupware, ... But the assignees and the F2F meeting are by far the most important channels for transferring knowledge to the member firms.”**

# The Three Components of Knowledge Management:

- **Knowledge generation.**

Includes all activities, which brings to light knowledge that is "new" to the individual, to the group, and to the organization.

- **Knowledge codification.**

Representation of knowledge so that it can be "reused" either by an individual or an organization.

- **Knowledge transfer.**

“Movement of knowledge from one location to another”.



## Means of Knowledge Transfer

- **Knowledge Fairs – E&Y, CSIRO**
  - **Unstructured, Ad Hoc**
  - **versus Structured, Micro-Planned Conferences**
- **Japanese Talk Rooms**
- **Knowledge Markets** – Any organization that exchanges for other things of value – money, respect, promotions, or knowledge
- **Communities of Practice** – knowledge flows best through networks of people with similar interest



**Tacit:** Knowledge not easy to visualize and express. Highly personal and hard to formalize.

**Explicit:** Can be expressed in words and numbers and can easily be communicated and shared in the form of hard data.

**Knowledge conversion:** Tacit and Explicit knowledge interact and interchange into each other in the creative activities of human beings. Knowledge is created through social interaction of the two types of knowledge!

# Tacit and Explicit Knowledge

## Tacit Knowledge

- Embedded in the human brain
- Cannot be expressed easily
- Requires extensive personal contact
- Mentorship networks
- Knowledge Maps, Video conferencing

## Explicit Knowledge

- Can be easily codified,
- Embedded in procedures,
- Represented in documents,
- Transferred with reasonable accuracy






## Cultures of Knowledge Transfer

- Lack of trust
- Different, cultures, language, mental models
- Lack of time and meeting places
- Status and rewards issues
- Lack of absorptive capacity
- Not-invented-here syndrome
- Intolerance for errors and mistakes



Transfer = Transmission + Absorption (and Use)

No Action => Useless Knowledge [Transfer]



"the movement of knowledge within the organization is a distinct experience, not a gradual process of dissemination, and depends on the characteristics of everyone involved"

**Transfer of knowledge does not denote a full replication of the knowledge in the receiving unit. Indeed, knowledge is often modified in the receiving unit. The key element in knowledge transfer is not the underlying (original) knowledge, but rather the extent to which the receiving subsidiary receives potentially useful knowledge and utilizes this knowledge in its own operations.**

# Knowledge Transfer

- Four different modes of knowledge conversion
  - Socialization
  - Externalization
  - Combination
  - Internalization



**Socialization**: “The process of sharing experiences and thereby creating tacit knowledge, such as shared mental models and technical skills. The key to acquire tacit knowledge is experience. Without some **shared experience**, it is extremely difficult for one person to project her/himself into another individual’s thinking process.”



**Externalization**: “The process of articulating tacit knowledge into explicit concepts. It may however be difficult to find an adequate verbal expression for a mental image through use of analytical methods alone.

Externalization is therefore often driven by **metaphor** and/or **analogy**.”



**Combination**: “The process of systematizing concepts into a knowledge system, i.e. combining different bodies of explicit knowledge. This entails reconfiguration of existing information, where sorting, adding, combining and categorising of explicit knowledge can lead to new knowledge.”



**Internalization**: “This process is closely related to 'learning by doing'. When tacit knowledge is incorporated and applied in a person's or an organization's tasks. In this conversion mode it helps if knowledge is verbalized or diagrammed into documents or oral presentations.”



# Nonaka and Takeuchi (1995)

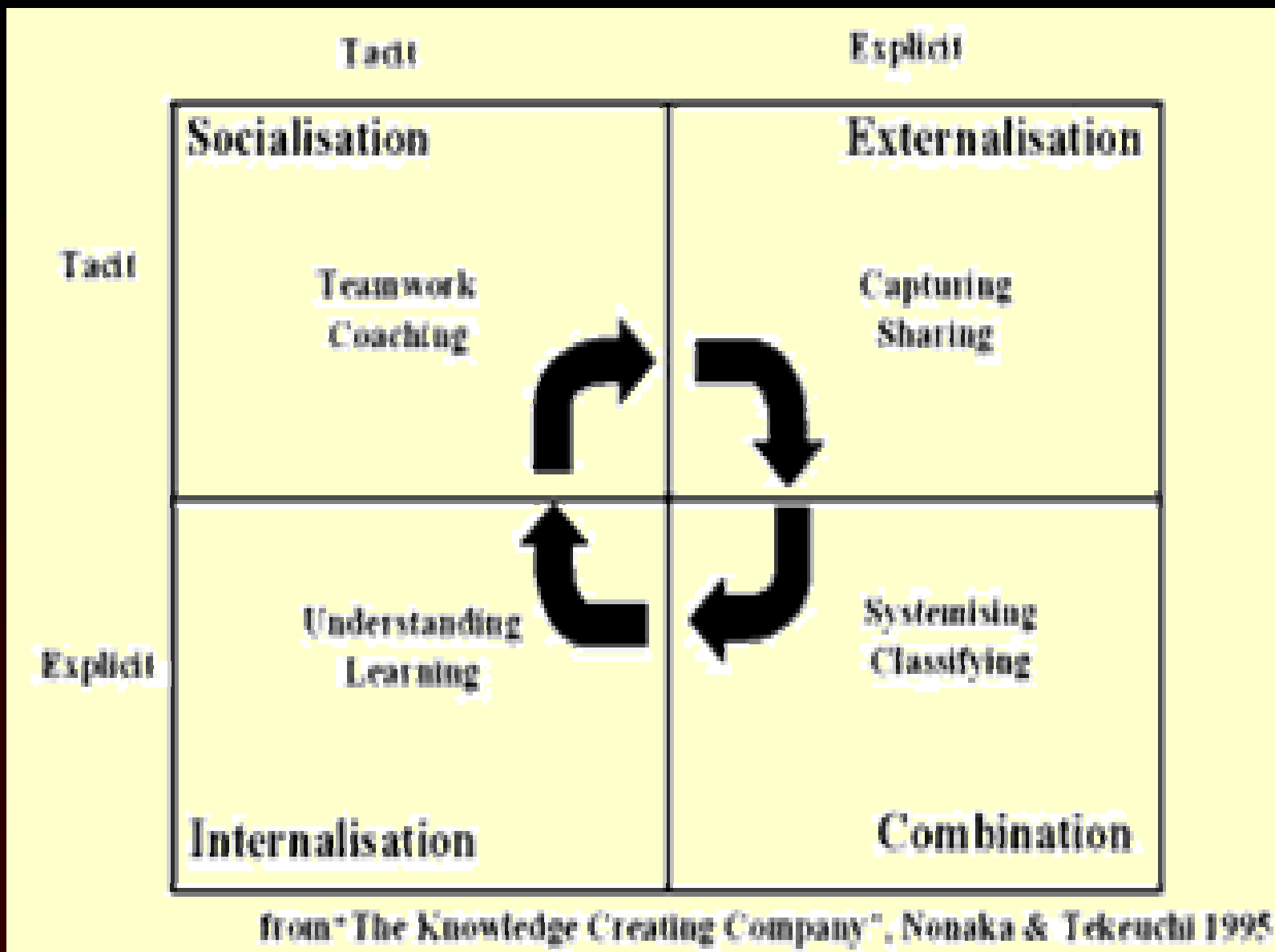
Tacit to Tacit – Socialization

Tacit to Explicit – Externalization

Explicit to Explicit – Combination

Explicit to Tacit - Internalization

		Tacit	Explicit
FROM	Tacit	Socialization	Externalization
Explicit	Internalization	Combination	
		TO	





## **Accelerate the Knowledge Spirals**

**Socialization-Externalization-  
-Combination-Internalization-**

**Application – Understanding  
- Application – Understanding**

**Knowledge in Action - Motors for change**



**“Stickiness” of knowledge** – how it tends to stay in one place... The CEO of Chapparral Steel firm said that he had no problem with competitors touring their plant. Chapparral, he said, is willing to show just about everything "and we will be giving away nothing because they can't take it home with them.”

**“Leakiness” of knowledge** – Knowledge leaks out of organizations like a sieve perhaps because people are closer to their external communities than to the rest of their organization's.



Another downside of hiring third-party service vendors and consultants is knowledge transfer-or, more accurately, the lack thereof. When third parties come in, "they know how to get work done quickly-and then they leave..."

Cisco - Knowledge Transfer and Mentoring Datasheet - Netscape

File Edit View Go Communicator Help

Back Forward Reload Home Search Netscape Print Security Shop Stop

Bookmarks Location: [http://www.cisco.com/warp/public/cc/serv/mkt/sup/advsv/kmntf/ktm1\\_ds.htm](http://www.cisco.com/warp/public/cc/serv/mkt/sup/advsv/kmntf/ktm1_ds.htm) What's Related

Members WebMail Connections BizJournal SmartUpdate Mktplace

Solutions Products Ordering Support Partners Training Corporate

Data Sheets

How to Buy Cisco Products Get Acrobat Reader

## Fact Sheet

### Solution Overview Cisco Systems Customer Advocacy Knowledge Transfer and Mentoring

Today's leading companies make ongoing education a business imperative because it helps employees keep up with the fast pace of technology evolution. In all industries, IT leaders and engineers must focus attention each day on learning the technologies, protocols, products, and solutions that could benefit their company's Internet business strategies. Maintaining network uptime, implementing improved network security solutions to protect company data, and adding new network applications that will decrease costs and increase productivity are all dependent on engineer knowledge and skills.

Companies that establish a process for capturing, filtering, and disseminating knowledge within their organizations are more likely to recruit and retain top performers and to differentiate themselves from their competitors, two significant factors for business success.

Document: Done

Knowledge Transfer through the National Science Foundation's Science and Technology Centers - Netscape

File Edit View Go Communicator Help

Back Forward Reload Home Search Netscape Print Security Shop Stop

Bookmarks Location: <http://www.crpc.rice.edu/CRPC/knowledge-trans/> What's Related

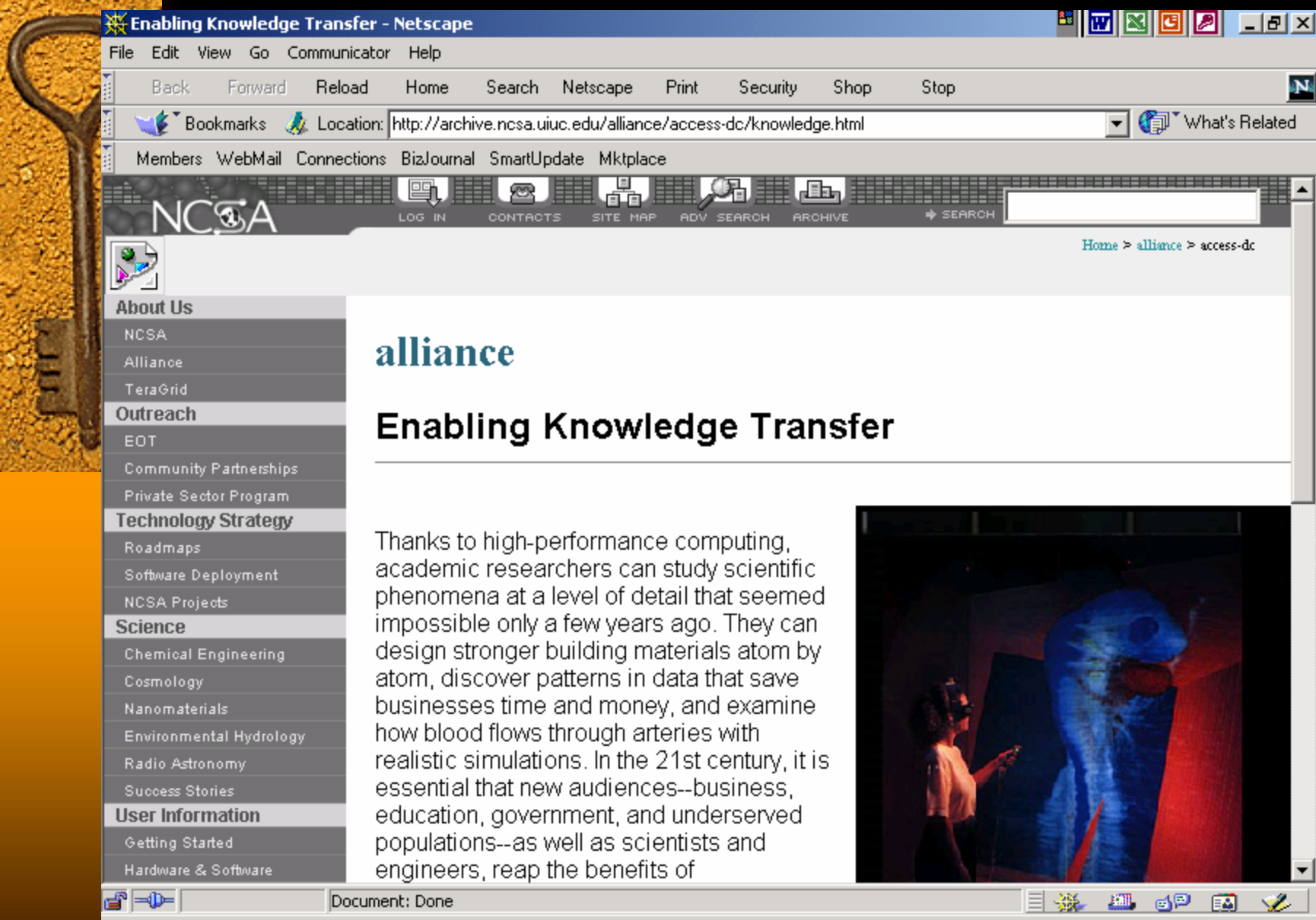
Members WebMail Connections BizJournal SmartUpdate Mktplace

# Knowledge Transfer through the National Science Foundation's Science and Technology Centers

## Table of Contents

- [Introduction](#)
- [Research Collaboration in Leading-Edge Technologies](#)
  - Electronics
  - High-performance Computing
  - Materials
  - Optics and Imaging
  - Biotechnology and Biomedical Imaging
  - Superconductors
  - Environmental Management
  - Natural Disaster Prediction
- [Knowledge Transfer Activities to Foster Research Collaboration](#)
  - Workshops and Symposia
    - Disseminating Information
    - Building Collaborations
    - Introducing New Technologies
    - Providing Training
  - Industrial Participation in STC Activities

Document: Done

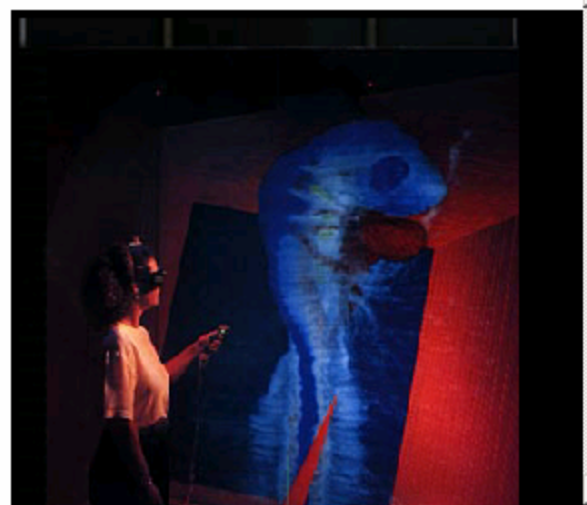


- About Us**
  - NCSA
  - Alliance
  - TeraGrid
- Outreach**
  - EOT
  - Community Partnerships
  - Private Sector Program
- Technology Strategy**
  - Roadmaps
  - Software Deployment
  - NCSA Projects
- Science**
  - Chemical Engineering
  - Cosmology
  - Nanomaterials
  - Environmental Hydrology
  - Radio Astronomy
  - Success Stories
- User Information**
  - Getting Started
  - Hardware & Software

## alliance

### Enabling Knowledge Transfer

Thanks to high-performance computing, academic researchers can study scientific phenomena at a level of detail that seemed impossible only a few years ago. They can design stronger building materials atom by atom, discover patterns in data that save businesses time and money, and examine how blood flows through arteries with realistic simulations. In the 21st century, it is essential that new audiences--business, education, government, and underserved populations--as well as scientists and engineers, reap the benefits of





Clipcode.net - Knowledge Transfer Portal For Software Engineers - Netscape

File Edit View Go Communicator Help

Back Forward Reload Home Search Netscape Print Security Shop Stop

Bookmarks Location: <http://www.clipcode.net/> What's Related

Members WebMail Connections BizJournal SmartUpdate Mktplace

Intro Components Data Desktop Languages Shell Systems

Snippets Samples Training Guides Intro

# CLIPCODE™

## Welcome to Clipcode.net

### Knowledge Transfer Portal For Software Engineers

*Strategy: Consider Clipcode.net as an extension to your company's advanced technology group - we are continuously exploring the very latest software engineering technologies and providing our subscribers with timely in-depth research on their use.*

---

**What's New:**

- [W3C Standards - XML Technologies](#)
- [W3C Standards - XPath](#)
- [Design Patterns - implementations in C#](#)

Document: Done

## Tools of Knowledge Transfer

- Knowledge generation
- Knowledge codification
- Knowledge transfer - spirals
- Tools
  - Data management tools- data warehouses, data search engines, data modeling, visualization
  - Information management tools - automated information search and retrieval agents, decision support technologies, executive information systems, document management technologies
  - Knowledge management



## Knowledge Transfer and Sharing

- Survey of over 400 U.S. & European firms (Ruggles 1998) concerning activities needed for knowledge sharing within organizations:
  - **50% oriented to people**
    - establishing new roles to leverage knowledge
    - enabling knowledge (training and education)
    - making knowledge visible to the organization
  - **25% oriented to process**
    - mapping sources of internal expertise
    - creating networks of knowledge workers
  - **25% oriented to systems**
    - implementing intranets & collaborative systems
    - data warehousing
    - developing expert systems
    - refining organizational routines