



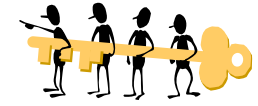
ICT in Knowledge Economy and Knowledge-Based Development: Challenge and Opportunity for Vietnam

Ho Tu Bao
School of Knowledge Science
Japan Advanced Institute of Science and Technology



Content

- Does Vietnam really need knowledge economy and knowledge-based development?
- ICT in knowledge economy and knowledge-based development
- ICT in knowledge economy: Current status of Vietnam?



What is a knowledge economy (KE)?

“An economy that makes effective use of knowledge for its economic and social development. This includes tapping foreign knowledge as well as adapting and creating knowledge for its specific needs.” (*)

- How to effective use knowledge?
→ Export rice in Mekong delta when the price down
- How to tap the foreign knowledge?
→ Hanoi city on the Red river (Seoul on the Han river)
- How to adapt and create knowledge for needs?
→ What if we mine the coal under the Red river delta

(*)World Bank, from *Mapping sustainability: knowledge e-networking and the value chain*, Springer 2007

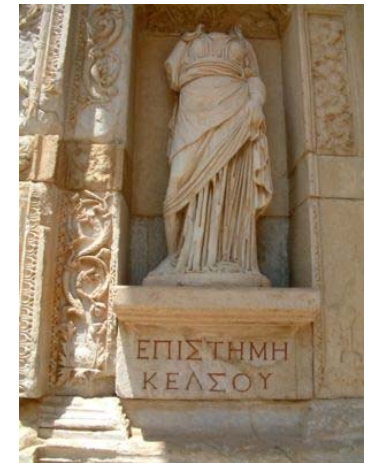


What is knowledge?

No single definition on which scholars agree, continued debate about the nature of knowledge.

- Understanding gained through experience, observation or study.
- Knowledge is what is known (confident understanding of a subject, potentially with the ability to use it for a specific purpose). [“Justified true belief” (Plato)]

→ **Tri thức là hiểu biết**
(đã được kiểm nghiệm và tin là đúng).



Personification of knowledge (Greek *Επιστημη*, Episteme) in Celsus Library in Ephesos, Turkey.

Traditional vs. knowledge-based economy



		Traditional	Knowledge-Based
Market	Key Features	Steady, Slow-evolving	Fast, Continuously-evolving
	Competitive Scope	Domestic	Global
	Dominant Firms	Large, industrial firms	Innovative, knowledge-driven firms
Private Sector	Strategy	Static, Mission/Objective-driven	Dynamic, Opportunity-driven
	Business Emphasis	Stability	Change Management
	Technological Position	Automation	ICT
	Market Focus	Mass Marketing	Differentiation
	Organizational Structure	Hierarchical	Networked
	Key Resource	Financial Capital	Human Capital

Exacerbating or reducing economic inequality

the only certainty is uncertainty

Source: The World Bank

Knowledge-based development (KBD)



Knowledge-based development is the process of using knowledge management (KM) in the development processes as well as developing an economy and society that is able to capture new opportunities and to compete successfully in a sustainable global knowledge economy.

Environmental and social sustainability



Economic Prosperity

Human development

Source: <http://www.cclfi.org>

Does Vietnam need KE and KBD?



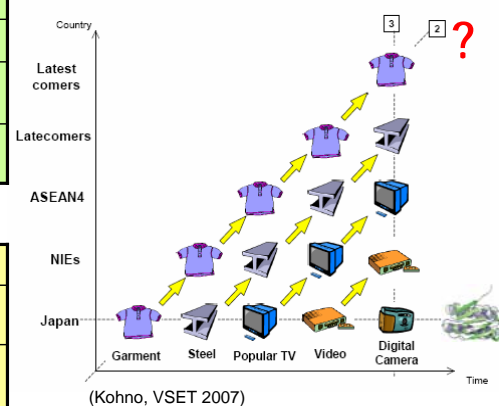
Vietnam, 2005 (General Statistic Office)

Economic sectors	in GDP
Agriculture, forestry, fisheries	20,34%
Industry and construction (processing + mining)	41,48% (31,22%)
Trade, service, tourism, etc. (finance, credit)	38,18% (1,80%)

Japan, 2005

Economic sectors	in GDP
Agriculture, forestry, fisheries (mining)	0,9% (0,0%)
Industry and construction (manufacturing)	31,8% (19,0%)
Trade, service, tourism, etc. (service)	66,9% (27,0%)

Structural Transformation in East Asia

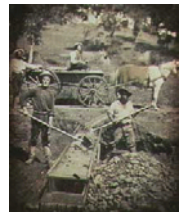


Risk of being left behind

Does Vietnam need KE and KBD?



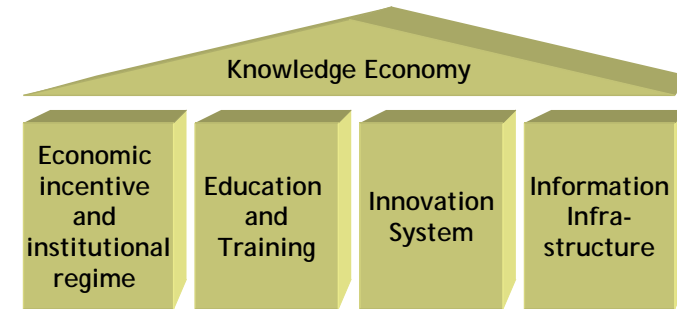
- Developed countries are moving toward KE → possibly increasing the gap
- The natural resource is not infinite!
- Too much on processing industry can only keep Vietnam among the “latest comers”.
- Too much on importing technology and modern products cannot make us sustainable.



KE & KBD in long-term are the key factors for Vietnam to reduce the gap



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- How to effectively use the knowledge?
- How to tap foreign knowledge?
- How to adapt and create knowledge?

Knowledge Management



- “Nothing more than managing information flow, getting the right information to the people who need it so that they can act on it quickly”.
(Bill Gate)
- “Leveraging relevant intellectual assets to enhance organizational performance.”
(Stankosky, 2002)
- “A conscious strategy of getting the right knowledge to the right people at the right time and helping people share and put information into action in ways that strive to improve organizational performance”.
(O’Dell & Grayson, 1998)



Knowledge management: processes of creating, capturing, and using knowledge to enhance organizational performance.
(Stacey, 2000)

Quản trị tri thức (tạo dựng tri thức) là quá trình để:

- Có được hiểu biết cần thiết
- Dùng được hiểu biết để tổ chức hoạt động tốt hơn.

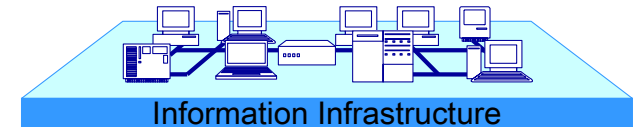




A regulatory and economic environment that enable the free flow of knowledge, supports investments in ICT, and encourages entrepreneurship is central to the knowledge economy.



A dynamic information infrastructure is required to facilitate the effective communication, dissemination, and processing of information.



A network of research centers, universities, think tanks, private enterprises and community groups is necessary to tap into the growing stock of global knowledge, assimilate and adapt it to local needs, and create new knowledge.



- Japanese companies struggled against international competition → a new technology, a new product design, new production process, a new marketing approach, etc.
- Knowledge accumulated from outside is shared within the organization, stored as part of company knowledge, used for new technologies and products.
- “Continual interplay between the tacit and explicit dimensions of knowledge and a growing spiral flow as knowledge moves through individual, group, and organizational levels.”

**Knowledge creation → Continuous innovation
→ Competitive advantage**

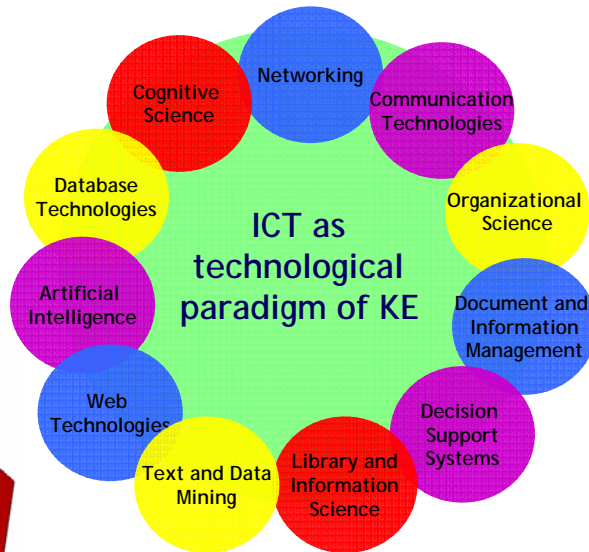
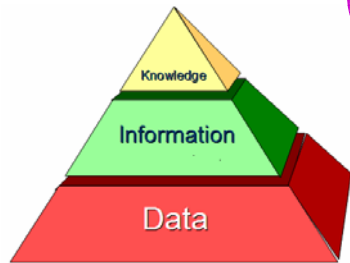
The knowledge-creating company
Nonaka, I. and Takeuchi, H. (1995), Oxford University Press





VLSP: Vietnamese Language and Speech Processing

Data Mining: From Data to Knowledge



An educated and skill population is needed to create, share, and use knowledge.



Knowledge worker



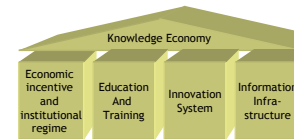
e-Learning



Learning organization



Life-long learning



A High labor content, simple skill: clothes, shoes, etc.

B High labor content + agriculture, forestry, fisheries as food processing

C High capital content + natural resource materials such as oil, petrochemical materials, etc.

D High skill labor content such as electrical goods and components, water pump, etc.

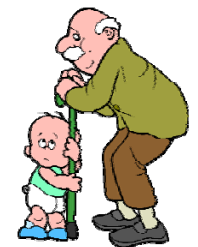
E High tech content such as computers, ICT, automobiles, etc.

- China focus on A and assembling in D. Thailand and Asian-4 are advancing in top of D.
- Japan & NIEs keep advantage in D but increasingly do outsourcing in Asia → China + Asian are going to D.
- Vietnam has advantage in A and B.

- Who works primarily with information or develops and uses knowledge in the workplace
- Need learning to gain knowledge



- It's never too soon or too late for learning.
- Often accomplished through distance learning or e-learning, continuing education, home-schooling or correspondence courses.
- The knowledge and skills acquired in primary, secondary and university education are usually not sufficient for a professional career spanning three or four decades.



Further discussion: theoretical issues



- Theory of knowledge gap, technological gap (Abramovitz 1986, WB 1999, Jensen et al. 2004)
 - Knowledge gap decides development gap
 - Follower countries can catch up with leading countries by acquiring and utilizing knowledge of the latter
 - Key concept: Absorptive capability
- ICT as an enabler of KE (Steinmueller 2002, Foray 2006, Shiller 2000, Freeman 2005)
 - Without ICT, it is difficult to realize KE
 - ICT-as-enabler of KE has both techno-economic and socio-institutional aspects.

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IT in Vietnam before 1975



- MINSK 22 in 1967, then MINSK 32, ODRA1304, ROBOTRON, ... (North); IBM 360-20, 30, 40 and 50 (South).
- Scientific computing, military service, transportation service, education and training, management.
- Effective service in the war, first generation of computer users.

ODRA 1304



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IT in Vietnam during 1975-1993



- 20 IBM 360 (all types), IBM 370; 3rd generation of Russian computers (~ IBM 360, 370)
- 1981: first micro computers (Apple, Micral R2E, IBM PC, DT82)
- Scientific computation and education, an increasing use in management of government organization and enterprises

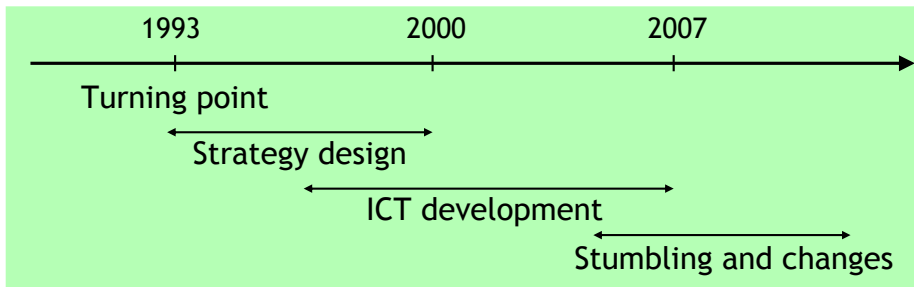


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ICT in Vietnam since 1993



- 1993: Decree 49/CP on "Information Technology Program of the Year 2000" (IT 2000)
- Master plan on IT for the period 2001-2005
- Project 112
- National program for speeding up Vietnam to become a strong country in ICT, 2009



IT 2000: Objectives



Building Infrastructure for IT

- Education and training
- Research and development
- Development of an IT industry
- Build a data communication network
- Standards

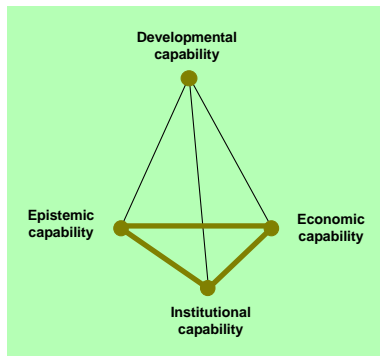
Policies Encouraging the Development and Applications of IT

- Construction of infrastructure
- Training
- Development of networks
- International transfer of technology and cooperation
- Capital-generation and expenditures
- Protection of intellectual property

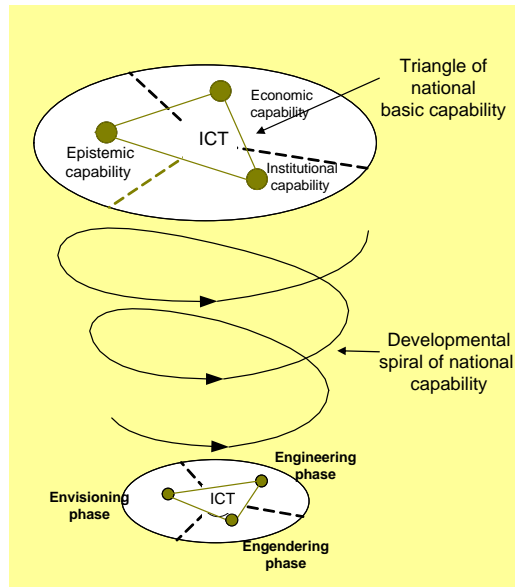
Application of IT in State Management and Socio-Economic Activities

- State management
- National security and defense
- Support for activities in the market economy
- Agro-industrial production branches
- Applications in other branches of the economy and localities

Model of KE through ICT in Vietnam



Dang Thi Viet Duc & Umemoto, K. *Knowledge Management*, Vol 13(5).



Dang Thi Viet Duc, "The Emergence of Knowledge Economy through ICT in Developing Countries: The Case of Vietnam", PhD dissertation, 2009.

What can we see



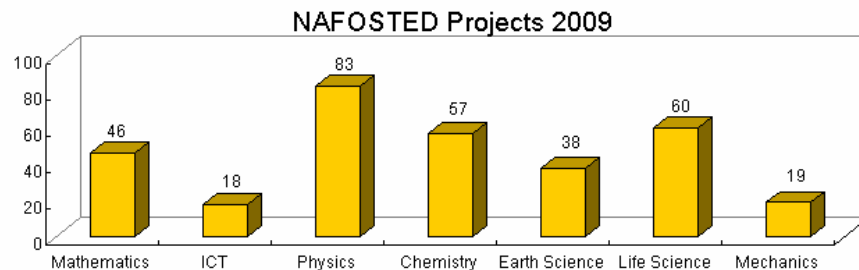
- ICT has been remarkably developed in Vietnam in the last decade, and is becoming an knowledge industry in Vietnam.
- ICT has been considered as a strategic factor of the development of Vietnam long before the KE and KBD occurred, but we can see that KE has emerged though ICT in Vietnam.



Remark on ICT education & research



- Need to seriously improve the quality of ICT master and PhD education program.
- Need to improve the ICT research environment, with appropriate policy and funding.



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Take-home message



- KE has been emerged in Vietnam through ICT even still in its infancy.
- As an enabler of KE and KBD, ICT certainly will play a decisive role in knowledge-based development of Vietnam, not only for itself.
- Recognizing the challenges and opportunities of ICT in the knowledge-based development of Vietnam, we ICT people can do more for the country.

Today knowledge has power. It controls access to opportunity and advancement.
Peter F. Drucker (1909-2005)



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Acknowledgement



The talk is prepared in discussion with Dang Thi Viet Duc, especially parts related to her PhD thesis on

“The Emergence of Knowledge Economy through ICT in Developing Countries: The Case of Vietnam”.

ICT-HN, 13.10 2009 31