Knowledge Management, Learning and Innovation in the Digital Age: Role of Library

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- Research 研究
- Teaching/ Training 教學/培訓
- Consultancy 顧問服務
- International Conferences 國際會議
- MAKE Award (最受推崇知識型企業大獎)
Research Areas

Organizational Learning and Innovation (學習型企業與創新):
Knowledge Sharing & Innovation

Knowledge Systems & Technologies (知識系統科技):
Knowledge Acquisition, Classification, Storage, Retrieval & Reuse

Intellectual Capital Management (智力資本管理):
Knowledge Assets Management & Assessment
My argument:

The IT/digital/cloud/knowledge/big data era

- Change the business/industrial landscape
- Open the door to business and social innovation
- Change the way we learn, innovate and the role of library in the digital age
...but the world has changed 不一樣的世界...
The changing landscape:

• The percentage of workers doing manual work is falling from 70% in 1900 to 35% in 1990 and to 15% in 2000 in developed countries.

• Approximately 75% of the economic activities in advanced countries is generated by service industries, where knowledge is the primary resource or ingredient.

• The vast amount of data, information and applications that reside in the Cloud platform would create opportunities for innovation unprecedented before. (-> digital and knowledge entrepreneurship)

• Building capabilities for faster learning & innovation.
“Today’s students are no longer the people our educational system was designed to teach.”

Marc Prensky, 2001
What are schools and universities?

Schools/universities are basically learning communities. Learning is complex and dynamic as shown recently by the work of Ton Jorg in his new theory for the creation and management of knowledge in learning communities. Schools are basically learning communities in which all stakeholders are involved in the creation, delivery, assimilation and sharing of knowledge. The term “knowledge management” (KM), however, is relatively unknown to the classical education science.
• Emphasize the need for appropriate technologies and methods of capturing, storing, retrieving and sharing

• The 'capture' approach continued with an emphasis on 'capturing knowledge' in databases, manuals, books and reports, and then sharing it in a hard form. (Hildreth and Kimble, 2002).
2nd Generation KM 1996 to present

- Japanese Prof. I. Nonaka - published "Knowledge Creating Company" in 1995. Draw attention on people’s dimension, the distinction between tacit and explicit knowledge and their transfer and conversion processes in an organization (Nonaka’s SECI model).

- Shift emphasis from supply side knowledge processing to demand side knowledge making (Mark W. McElory)
Knowledge Sharing Index $S = 1$

$$K = (P + I)^S$$

After Author Anderson consulting)
The Nonaka in his Ba Theory stipulates that effective knowledge sharing and transfer is facilitated by 3 types of spaces (Ba/Field)

Examples:

- Physical Ba
  - Future Centre, Public Space design etc.
  - Blog, Wikis
  - Emotion and Values, Disclosure through stories,
  - Mental Ba
    - Reflective practice, Dialogue, etc.
  - Virtual Ba
    - Facebooks, Twitters, Enterprise 2.0 etc.

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A Personal Learning Environment & Network (PLE&N)

Knowledge Management & Innovation Research Centre
The Hong Kong Polytechnic University
Shortfalls of delivering large F2F classes

- Predominantly instructor-lead, behavioral model of learning
- Limited time for in-class lectures
- Classes are confined to a term/semester
- Students may be hesitant in raising questions
- Focus on theories with limited references to applications and cases

- Hard to obtain interactive feedback from individual students
- Focus on theories with limited references to applications and cases
Learning Paradigm has shifted from predominantly teacher-lead classes to a mix of lectures, group discussions, reflections, in personal and group learning environments.
A Cloud-based PLE
Benefits of the PLE&N

1. Supports lifelong learning as it is not confined inside a classroom
2. Supports a co-learning environment among instructor(s), learners, practitioners & other expert(s)
3. Collaborative effort to combat information overload
4. Self-centered, flexible & pervasive
5. Represents an “active knowledge repository”
6. Garners an online community in the domain topic with diversified members
Traditional Learning Model vs cMOOC

Traditional Learning Model (inclusive of E-Learning and MOOC):

- Traditional learning emphasizes on Knowledge Dissemination and Duplication
  - Passive
  - Instructor-centric Behavourist Learning Model
  - Top-down learning design

CMOOC provides a new Networked Learning Model

- Emphasizes on Knowledge Creation
- Proactive Network Learning
- Student-centric Connectivistic Learning Model
Relationship between MOOC & Open Service Innovation

MOOC

Open & Interactive Learning

Open Innovation
Application of MLEN (MOOC Learning Environment and Network) in Service Innovation Courses

MLEN (MOOC Learning Environment and Network)

Events

Online Learning (Students) → Project Proposal from Enterprises → Project Selection & Group Formation → Project Execution and Reporting → Project Evaluation by Panel

Other Enterprises (Local and Overseas)

Social Media Tools
Expertise Locator
Collaborative Platform
Crowdsourcing
Innovation Jam

Application of MLEN (MOOC Learning Environment and Network) in Service Innovation Courses

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In the digital age, what should be the role of library in supporting learning and innovation?
Library as a “community centers” and “public squares”? 
Library as *Open Platform* vs Library as *Social-Technological-Intellectual Infrastructure* to design and develop knowledge-organization systems.

Examples:

Create reader’s resources to encourage/support learners to develop personalized, individualized or autonomous and networked learning  
*e.g. PLEN*

Help scholars locate archival and other resources crucial to their work, share data and collaborate with others  
*e.g. ResearchGate, Google Scholar*
Library as *Open Platform* vs Library as *Social -Technological-Intellectual Infrastructure* to design and develop knowledge-organization systems. Examples:

Create reader’s resources to encourage/support learners to develop personalized, individualized or autonomous and networked learning *e.g. PLEN*

Help scholars locate archival and other resources crucial to their work, share data and collaborate with others *e.g. ResearchGate, Google Scholar*
ResearchGate is a social networking site for scientists and researchers[3] to share papers, ask and answer questions, and find collaborators. Members of the site each have a user profile and can upload research output including papers, data, chapters, negative results, patents, research proposals, methods, The New York Times described the site as a mashup of Facebook, Twitter and LinkedIn

As of 2018, it has more than 15 million users

https://en.wikipedia.org/wiki/ResearchGate
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- Help scholars locate archival and other resources crucial to their work, share data and collaborate with others e.g. ResearchGate, Google Scholar

- Help medical experts, doctors, scientists and citizen more quickly locate health information in critical situations and diagnosis support
A clinical example

Big data from Cloud

Crowd sourcing
- Medical experts, doctors, scientists and citizens

Cloud Platform
- Artificial Intelligence/data mining
- Decision Support System
- Knowledge System
- Community of Practice (CoP)/Pool of Experts

Output
- Data visualization and reporting
- Diagnosis
- Treatment and solutions
Examples:

- Support for performing knowledge work (various knowledge clouds, etc.)
- Powerful search mechanisms for knowledge navigation (serendipity search, etc.)
- Cloud-based taxonomy tools and services (folksonomy, etc.)
- Ensuring knowledge quality in digital publishing
- Others………

Challenges ahead in information overload!
The illiterate of the 21st century will not be those who cannot read and write, but those who cannot learn, unlearn, and relearn.

— Alvin Toffler —
謝謝！

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李榮彬

Thank You！

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