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<th>Academic libraries and the cloud: The HKU experience; 學術圖書館與雲端：香港大學的經驗</th>
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<td><strong>Author(s)</strong></td>
<td>Sidorko, PE</td>
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<td>Chinese Culture Cloud Computing Digital Library: 2012 CNKI Users Annual Meeting Agenda, 21 March 2012, Taipei, Taiwan</td>
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Academic Libraries and the Cloud: The HKU Experience

Peter E Sidorko
The University of Hong Kong
21 March 2012
Overview 概観

1. Today’s environment 今日的環境
2. What is the Cloud? 什麼是雲端？
3. HKU and the Public Cloud 香港大學與公共雲端
4. HKU and the Private Cloud 香港大學與私有雲端

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1. Today’s environment

今日的環境

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Resources abound!
資源豐富！

Alternate forms of publishing
(open access, social media, etc)
另類的出版（開放取用，社群媒體等）
It really is anytime, anywhere, now!
真的可隨時隨地即時使用！
Anytime, anywhere

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Collaboration and relationships

協作與關係

http://www.flickr.com/photos/jenlen/4087508548/
The Cloud

雲端
Gartner Identifies the Top 10 Strategic Technologies for 2012

The top 10 strategic technologies for 2011 include:

Cloud Computing. Cloud computing services exist along a spectrum from open public to closed private. The next three years will see the delivery of a range of cloud service approaches that fall between these two extremes. Vendors will offer packaged private cloud implementations that deliver the vendor’s public cloud service technologies (software and/or hardware) and methodologies (i.e., best practices to build and run the service) in a form that can be implemented inside the consumer’s enterprise. Many will also offer management services to remotely manage the cloud service implementation. Gartner expects large enterprises to have a dynamic sourcing team in place by 2012 that is responsible for ongoing cloud sourcing decisions and management.

“Organizations should start exploratory projects to look at promised candidate technology and kick off a search for combinations of information sources, including social sites and unstructured data that may be mined for insights,” said Carl Claunch, vice president and distinguished analyst at Gartner.

The top 10 strategic technologies for 2012 include:

Media Tablets and Beyond. Users can choose between various form factors when it comes to mobile computing. No single platform, form factor or technology will dominate and companies should expect to manage a diverse environment with two to four intelligent clients through 2015. IT leaders need a managed diversity program to address multiple form factors, as well as employees bringing their own smartphones and tablet devices into the workplace.
Key Trends

The technologies featured in each edition of the NMC Horizon Report are embedded within a contemporary context that reflects the realities of the time, both in the sphere of higher education and in the world at large. To ensure this context was well understood, the advisory board engaged in an extensive review of current articles, interviews, papers, and new research to identify technologies that have the potential to affect teaching, learning, and ultimately higher education. Once these technologies were identified, they were ranked according to their potential impact.

The continuing acceptance and adoption of technologies within higher education in the next five years. The highest ranked of those trends had significant agreement among the advisory board members, who considered them to be key drivers of educational technology adoptions for the period 2012 through 2017. They are listed here in the order in which the advisory board ranked them.
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*This limited time offer includes unlimited space for MP3 (.mp3) and AAC (.m4a) music files with all Cloud Drive storage plans. Learn more.

What's New

Amazon Cloud Drive
• All paid Amazon Cloud Drive plans now include unlimited space for eligible music.
• All Amazon MP3 purchases saved to or uploaded to your Cloud Drive will not count towards your storage limit.

Amazon Cloud Player
• Web - Purchase, stream, download and upload your music on your PC or Mac.
• Amazon MP3 app - Purchase, stream, and download your music on your Kindle Fire or Android device.
• iPad - Purchase and stream your music on your iPad.

How It Works
iTunes in the Cloud

With iCloud, the music you purchase in iTunes appears automatically on all your devices. You can also download your past iTunes purchases. Where you want, when you want.
2. So what is the Cloud?
那麼，何為雲端？

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Cloud computing

• ... is computing as a service rather than a product, whereby shared resources, software, and information are provided to computers and other devices as a metered service over a network (typically the Internet).

  它是服務而非產品，把資源共享、軟件和資訊供給計算機及其他設備，並透過網絡（通常為國際互聯網）作為一個計量服務。

• End users access cloud based applications through a web browser or a light weight desktop or mobile app while the business software and data are stored on servers at a remote location

  終端使用者可通過一個網頁瀏覽器或一個羽量級的桌面電腦或智能手機應用程式，去存取儲存在遠距離的伺服器的商業軟件和資料。
3. Cloud services

雲端服務

• Software (sometimes Application) as a service (SaaS)

作爲服務的軟體（有時是應用程式）（SaaS）

• Platform as a service (PaaS)

作爲服務的平台（PaaS）

• Infrastructure as a Service (IaaS)

作爲服務的基礎設施（IaaS）
Cloud Computing

- Application
  - Servers
  - Laptops
  - Desktops
  - Monitoring
  - Content
  - Collaboration
  - Communication
  - Finance

- Platform
  - Object Storage
  - Identity
  - Runtime
  - Queue
  - Database

- Infrastructure
  - Compute
  - Block Storage
  - Network

http://en.wikipedia.org/wiki/Cloud_computing
Benefits
好處

• Cost 省成本
• Collaborative, or not 協作，或不
• Portable – access anywhere (almost) 易於攜帶 - 在任何地方(幾乎)可隨時存取
• Less support needed 所需支援較少
• Scalable 可擴展
• No licensing 不需牌照
• Environmental 環保
• Less hardware 硬件較少
Concerns

• Privacy 私隱
• Security 安全
• Control 監控
• Ownership 所有權
• Reliability 可靠性
Public vs Private Clouds

公共雲端與私有雲端的對比

Cloud Computing Types

http://en.wikipedia.org/wiki/Cloud_computing
The Public Cloud
公共雲端

• Publicly accessible
公開存取
• Free or pay per usage
免費使用或按次收費
• No contract or commitment
沒有合約或承諾
• Access via Web Services
透過Web服務來存取
The Private Cloud 私有雲端

• Same as Public Cloud but for private/internal resources 跟公共雲端相同，但是用作私人/對內的資源

• Same benefits as Public Cloud but: 有公共雲端的好處，且：
  – Maintain control of resources (security) 維持對資源的監管 (安全)
  – Meets corporate requirements 達到企業的要求
  – Can scale out to the Public Cloud if desired 可擴展至公共雲端
3. HKU and the Public Cloud?

香港大學和公共雲端
College libraries and student culture: what we now know / edited by Lynda M. Duke and Andrew D. Asher.


Permanent URL for this record => http://library.hku.hk/record=b4690876

Acknowledgments

Erial Project Research Teams

1. Ethnographic Research in Illinois Academic Libraries: The ERIAL Project / David Green
2. Pragmatism and Idealism in the Academic Library: An Analysis of Faculty and Librarian Expectations and Values / Mary Thill
3. Marketing the Library’s Instructional Services to Teaching Faculty: Learning from Teaching Faculty Interviews / Annie Armstrong
5. Searching for Answers: Student Research Behavior at Illinois Wesleyan University / Lynda M. Duke
6. Supporting the Academic Success of Hispanic Students / David Green
The Hong Kong University, Hong Kong 1970s & 2007

HKU 1970s & 2007: The Hong Kong University, officially founded in 1911, is the oldest university in Hong Kong. If the foundation date of the College of Medicine for Chinese, Hong Kong 香港大學 dentistry, the predecessor of HKU is tracked back to 1887, HKU is the oldest existing university (western) in China.

Tsing Hua University 清華大學 was founded in 1911 in the name of Tsinghua College 清華學校, renamed into Tsinghua College 清華學校 in 1912, reorganized into Tsing Hua University in 1928.

Peking University was founded in 1898 in the name of Imperial Academy of Peking 京師大學堂, renamed
The 6th Annual HKU Library Leadership Institute's photostream

**Group Photo**
Shantou University. April 19, 2008
Uploaded on Apr 24, 2008
0 comments

**DSC_1497**
On the journey to Hong Kong
Uploaded on Apr 24, 2008
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**DSC_1494**
Farewell to each other
Uploaded on Apr 24, 2008
0 comments

**DSC_1493**
Farewell to each other
Uploaded on Apr 24, 2008
0 comments

**DSC_1492**
Sossamma K.T. George, Peter Sidorko
Uploaded on Apr 24, 2008
0 comments

**DSC_1491**
Chaozhou style dishes
Uploaded on Apr 24, 2008
0 comments
HKU SPACE Community College

HKU SPACE Community College was established in March 2000. It mainly provides sub-degree programmes for Form 5 or Form 7 graduates to further their studies. There are three main streams of programmes provided, they are Higher Diploma Programmes (2-year and 3-year full time), Pre-Associate Degree (1-year full time) and Associate Degree (2-year full time).

Libraries

HKU Libraries (HKUL) was established in 1912 and is the oldest academic library in Hong Kong with over 2.3 million holdings. A web-based library catalogue, DRAGON, allows one to search HKUL’s books, journals and other resources.

HKUL now comprises the Main Library and six specialist branch libraries, the Dental, Education, Fung Ping Shan (East Asian Language), Yu Chun Keung Medical, Lu Che Woo Law and the Music Library. They are located in buildings around the campus with varying opening hours.

HKUL Digital Initiatives

The HKUL Digital Initiatives, through its digitization projects, has opened up online access to local collections originally in print format. The first HKUL Digital initiative, ExamBase, was launched in 1996 and other projects of scholarly interests were introduced. More digital projects are being developed to provide continuous access to digital content and services. It provides open access to Chinese and English academic and medical periodicals published in Hong Kong.
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Endnote X5 (MAC) version available for downloading by current HKU staff and students - lib.hku.hk/endnote/downlo...

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Endnote workshops lined up in September are all full. Sorry... But we promise more workshops will be offered in October...and year round.

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Endnote_at_HKUL @endnote_at_hkul
Endnote X5 (Windows) is now ready for download. Please visit - lib.hku.hk/endnote/downlo... … Mac version will be available soon.
Re-designing Education Faculty Spaces: Have Your Say!

Nancy Law and Bob Fox
Faculty of Education
The University of Hong Kong
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<td>4/10/11 Mayas12</td>
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Others

Panda Cloud Antivirus
The first free antivirus from the cloud
Easy to use. Light as a feather. Secure protection against all kinds of viruses... and 100% FREE
Learn more

zotero

EVERNOTE®

Gmail

eyeOS, the n° 1 Cloud Desktop worldwide.
Access your data, files and apps no matter where you are, and no matter what device or operating system you are using.
4. HKU and the Private Cloud?

香港大學和私有雲端？

http://www.flickr.com/photos/mementosis/4405730018/sizes/z/in/photostream/
Electronic Resources vs Print Budget
電子資源與印刷資源經費的比較
(2001/02 - 2011/12)
Going Digital at HKU
香港大學邁向數碼化的情況

![Graph showing the increase in current print serials and eSerials from 2001 to 2011]

- Current print serials: 15,670 in 2001, 9,022 in 2011, a decrease of 42%
- eSerials: 14,556 in 2001, 55,431 in 2011, an increase of 281%
Going Digital at HKU
香港大學邁向數碼化的情況

![Graph showing growth in volumes and eBooks from 2001 to 2011.]

- Volumes: 2,853,638 (2011) vs. 1,949,217 (2001), increase of 46%
- eBooks: 2,903,232 (2011) vs. 30,894 (2001), increase of 9,297%
“The days of each library operating its own local servers have largely passed. This approach rarely represents the best use of library space and personnel.”

Marshall Breeding
Director for Innovative Technologies and Research, Jean and Alexander Heard Library, Vanderbilt University

「每所圖書館獨立操作自己伺服器的時代大致已過去了。這種操作模式不是圖書館最有效的空間和人力資源運用。」

Marshall Breeding
美國范德比爾特大學圖書館
Server Consolidation with "Cloud" Technology

Traditional Way (Physical to Physical) (由物質至物質)

- 5 servers 5個伺服器 = $A
- Direct Connected Storage 直接連接存儲
- 3 chassis (total 5TB) 3個機殼（總數為5TB） = $B
- Manpower required 需要人手
- 5 weeks 5個星期
- 1 IT Officer/Manager 1位IT主任/經理 = $C
- Virtualization Software Cost 虛擬化軟件費用 = $Nil
- 4th & 5th 5 year hardware maintenance cost 第4年和第5年的5年硬件保養費用 = $E
- Total Cost 總費用 = $A + $B + $C + $E

Virtualization (Physical to Virtual) (由物質至虛擬)

- 2 Servers 2個伺服器 = $A x 0.37
- Storage Area Network (SAN) 存儲區域網路 (SAN)
- 5TB = $B x 0.62
- Manpower required 需要人手
- 2 weeks 2個星期
- 1 IT Officer/Manager 1位IT主任/經理 = $C x 0.4
- Virtualization Software Cost 虛擬化軟件費用
- Site License. Assuming the life cycle of servers 5 years. 網站牌費. 假設伺服器的生命週期是5年 = $D
- 4th & 5th 5 year hardware maintenance cost 第4年和第5年的5年硬件保養費用 = $E x 0.5
- Total Cost 總費用 = ($A + $B + $C + $E) x 0.66
Thank You!!

謝謝!!