

**Regional Seminar on the Impact of the Economic Crisis on Higher Education and the Use of
ICT in Universities in Asia and the Pacific**

*Co-organized by UNESCO Asia and the Pacific Regional Bureau for Education Commission of
Higher Education, Thailand*

**ICT in Administration and Management
at The University of Hong Kong**

Allan Yuen

Bob Fox

Jae Park

Centre for Information Technology in Education

Faculty of Education

The University of Hong Kong

Queen's Park Imperial Hotel, Bangkok, Thailand

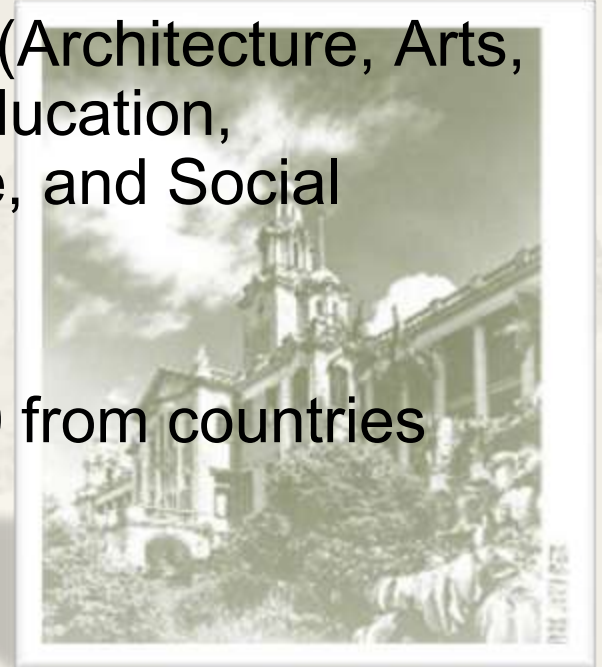
30 June – 2 July 2010

HKU



HKU at a Glance

- * Established in 1911
- * The oldest tertiary education institution in Hong Kong
- * HKU has been identified as a high ranking international university
- * Over 20,000 students in 10 faculties (Architecture, Arts, Business & Economics, Dentistry, Education, Engineering, Law, Medicine, Science, and Social Sciences).
- * 55% undergraduates
- * 4,500 'non-local' students and 1,400 from countries outside Asia



HKU at a Glance

- * 6,500 full-time staff (1000 teachers; 2000 academic-related staff; 3500 non-academic staff such as technical staff supporting the research and teaching functions).
- * Over 6000 visiting scholars and part-time staff with written contracts are employed annually.
- * HKU has developed from a teaching to a research-oriented university.
- * 'Research-centered' focus is, for example, one of the main considerations in adopting a specific type of ICT system by the administration and management of the university.



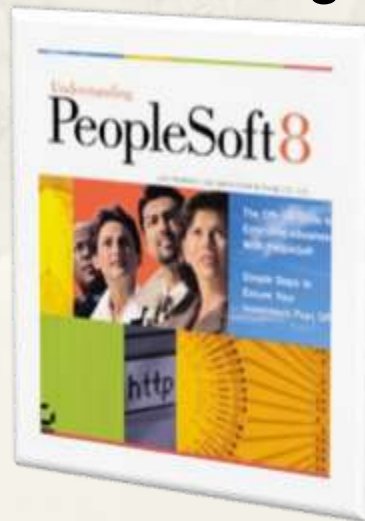
Background ICT and H.E.

- * ICT-mediated administration and management in “areas such as student admission and records, examination results and transcripts, finance database, human resources database and management information” (UNESCO, 2009).
- * Numerous studies of technology implementation in organizations in the 1950s were followed by a number of policies on ICT in education in many countries (Pelgrum et al., 1999).
- * 1970s ICT-mediated Adm. & Manag. in higher education institutions



ERP general issues

- * Enterprise Resource Planning (ERP)
- * Integration of data and processes of an organization into one single system.
- * ERP systems consist of several components including hardware and software
- * Most ERP systems use a unified database to store data for various functions found throughout the organization



HKU Case

- * Migration from “In-house Built” to Enterprise Resource Planning (ERP) system
- * (Illustration)
- * Statement of Case Study here

The screenshot shows the WebCT interface for 'WebCT Workshop Advanced 2 - webct02'. The top navigation bar includes 'Build', 'Teach', and 'Student View'. A 'Course Tools' sidebar on the left lists various functions like 'Announcements', 'Assessments', and 'Learning Modules'. The main content area shows 'Your location: Home Page' with options to 'Add File', 'Create Folder', and 'Add Content Link'. The 'Add Content Link' dropdown menu is open, highlighting 'HKU WebCT Additional Services'.

The screenshot shows the HKU Portal interface. The top navigation bar includes 'HKU Today', 'MyEmail', 'MyWebCT', 'MyLibrary', 'MyGIS', 'MyDepartment', 'Services', and 'MyFavourites'. The main content area displays 'WebCT Courses' and a table of courses with access permissions.

WebCT Vista 8 was upgraded from WebCT CE6 on August 28, 2006.

[Access courses on WebCT](#)

Your Courses on WebCT Vista 8	Grant Access To		
	Student	Teacher	Guest
Infectious Diseases and Medical Dermatology - MED6407			
Patient Care Project (Feel-Link) - PCP_FL			
Update Certificate Course in Endocrinology and Diabetes - MED6403			
Update Certificate Course in Hepatology and Gastroenterology - MED6406			
Update Certificate Course in Medical Oncology - MED6408			
Update Certificate Course in Nephrology - MED6409			
Update Certificate Course in Neurology - MED6410			

Four Foci Analysis

- * Enterprise Resource Planning (ERP) project on two areas of ICT use:
 - * Student Information
 - * Human Resource Information Systems
- * Institutional strategies, impacts and challenges
- * Change management and sustainability
- * Reflections and recommendations



ICT-mediated administration and management at HKU

- * Enterprise Resource Planning (ERP) project on two areas of ICT use:
 - * Student Information
 - * Human Resource Information Systems
- * Institutional strategies, impacts and challenges
- * Change management and sustainability
- * Reflections and recommendations



Enterprise Resource Planning (ERP) project on two areas of ICT use: Student Information

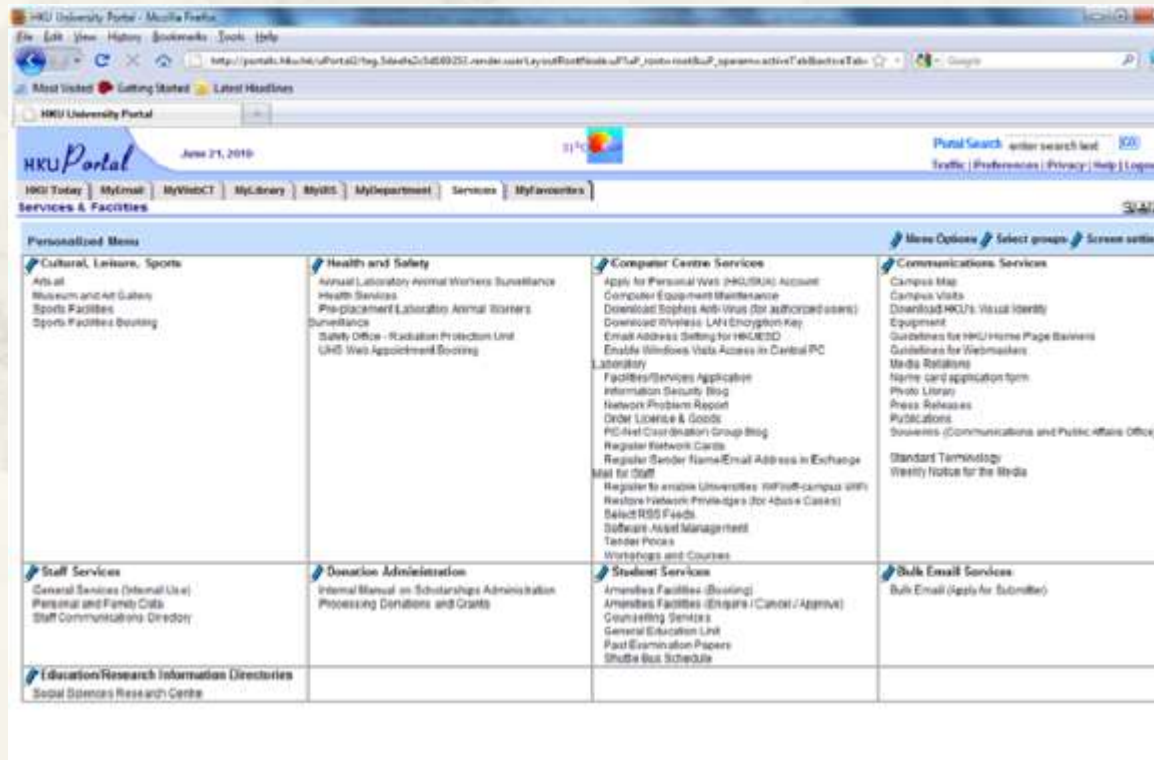
- * 1998-99, the University has introduced an online student information system (SIS) named Student Connect



The screenshot shows the Student Connect website interface. At the top, there is a banner with a collage of images and the text "Academic Services Registry" and "THE UNIVERSITY OF HONG KONG". Below the banner, the title "Student Connect" is displayed in red. The main content area contains a heading "Student Connect (for HKU student)" followed by two bullet points: "access Student Connect through HKU Portal - HKU Portal is best viewed in IE 5.5 and up." and "Guide for Access to STUDENT". At the bottom, there is a footer with navigation links: "Information services", "Student Connect", "Archives", "What's New", "Contact Us", and "Privacy Policy Statement". The footer also includes the text "Academic Services, The University of Hong Kong" and "© 2004 All rights reserved."

Enterprise Resource Planning (ERP) project on two areas of ICT use: Human Resource Information Systems

- * Current Human Resources
- * HKU Portal log-in <https://hkuportal.hku.hk/login.html>



The screenshot displays the HKU University Portal homepage. At the top, there is a navigation bar with the HKU logo, the date 'June 21, 2010', and a search bar. Below the navigation bar, there are several menu items: 'HKU Today', 'MyEmail', 'MyWebCT', 'MyLibrary', 'MyRSS', 'MyDepartment', 'Services', and 'MyFavorites'. The main content area is titled 'Personalized Menu' and is organized into a grid of service categories. Each category has a list of links to various services and resources.

Personalized Menu			
Cultural, Leisure, Sports <ul style="list-style-type: none">Arts at HKUMuseum and Art GalleriesSports FacilitiesSports Facilities Booking	Health and Safety <ul style="list-style-type: none">Annual Laboratory Animal Workers SurveillanceHealth ServicesPre-placement Laboratory Animal Workers SurveillanceQuality Office - Radiation Protection UnitUNE Web Appointment Booking	Computer Centre Services <ul style="list-style-type: none">Apply for Personal Web (HKU/BUK) AccountComputer Equipment MaintenanceDownload Sophos Anti-Virus (for authorized users)Download Wireless LAN Encryption KeyEmail address setting for HKU/BUKEnable Windows Vista Access in Central PC LaboratoryFacilities/Services ApplicationInformation Security BlogNetwork Problem ReportOrder License & GoodsPC-level Coordinator Group BlogRegister Network CardsRegister Sender Name/Email Address in Exchange Mail for StaffRegister to enable Universities Wi-Fi@HKU campus withRestore Network Privileges (for Abuse Cases)Select RSS FeedsSoftware Asset ManagementTender ProcessWorkshops and Courses	Communications Services <ul style="list-style-type: none">Campus MapCampus VisitsDownload HKU's Visual IdentityEquipmentGuidelines for HKU Home Page BuildersGuidelines for WebmastersMedia RelationsName card application formPhoto LibraryPress ReleasesPublicationsSouvenirs (Communications and Public Affairs Office)Standard TerminologyWeekly Notice for the Media
Staff Services <ul style="list-style-type: none">General Services (Internal Use)Personal and Family CareStaff Communications Director	Donation Administration <ul style="list-style-type: none">Internal Manual on Scholarships AdministrationProcessing Donations and Grants	Student Services <ul style="list-style-type: none">Amendies Facilities (Booking)Amendies Facilities (Enquire / Cancel / Approve)Counselling ServicesGeneral Education UnitPast Examination PapersShuttle Bus Schedule	Bulk Email Services <ul style="list-style-type: none">Bulk Email (Apply for Subscription)
Education Research Information Directories <ul style="list-style-type: none">Social Sciences Research Centre			

ICT-mediated administration and management at HKU

- * Enterprise Resource Planning (ERP) project on two areas of ICT use:
 - * Student Information
 - * Human Resource Information Systems
- * **Institutional strategies, impacts and challenges**
- * Change management and sustainability
- * Reflections and recommendations



Institutional strategies, impacts and challenges: *Needs Assessment*

- * Student Information System (SIS) for the 4-year undergraduate curriculum.
- * Mid-2007 Project Team formed (Registry & Computer Centre)
- * 2007-2008 project tendering and evaluation process:
 - * Study of goals and options enterprise resource planning (ERP)
 - * Visits to several universities in the USA
 - * Presentations of various ERP products from the USA (PeopleSoft and Banner) and from Germany (SAP).
 - * Request for Information (RFI) was issued and responses from vendors were studied by the HKU project steering group, and an official tender document was prepared (April 2008)
 - * After evaluation and deliberation, the university chose PeopleSoft which is considered more appropriate for research-led universities



Institutional strategies, impacts and challenges: *Project Management and Impact*

- * Steering Group (senior administrators from Computer Center and Registry Academic Services Section)
- * Steering Group supervised by University senior management Task Force
- * External consultant to evaluate the available products
- * External consultant (via tendering) to perform 'health-checks' on the project
- * Contract: (1) "Scoping" what the university wants and the vendor will do (2) vendor call for price in two parts—general cost and cost of additional mandate
- * Ensuring project progress
- * Budget control (esp. controlling mandate)
- * Transparency
- * Manpower cost
- * Expectation management
- * Engaging end-users



Institutional strategies, impacts and challenges: *Challenges*

- * Challenges in implementation
 - * “The only thing I can say is that we are nervous. Oracle people said that they neither have such a scale of work in such a short period of time. Their work with Australian universities was difficult in terms of larger population of students. But in our case, the time given to Oracle is very short [and] our system can be as complicate too.” (A senior administrator’s remark)
- * ERP system Cost (cost effectiveness verified in years)
- * Re-skilling existing staff
- * Significant changes to work practices (a sense of ownership)
- * Administrative practices and academic practices. Current systems and Marks Entry System (MES) is not totally in line with HKU.
- * Tension between standardization and customization
- * Learning Management System (LMS). Yes: interface to Blackboard or WebCT. No further customization

ICT-mediated administration and management at HKU

- * Enterprise Resource Planning (ERP) project on two areas of ICT use:
 - * Student Information
 - * Human Resource Information Systems
- * Institutional strategies, impacts and challenges
- * **Change management and sustainability**
- * Reflections and recommendations



Discussion: Change management & sustainability

Change Process

- * Technology >>skills>>modus operandi>>organizational learning and change
- * Argyris and Schön (1978):
- * From surface level practices ('single-loop learning') to assumptions and values that underpin the organizational practices ('double-loop learning')
- * HKU new ERP system Case: An 'abrupt' organizational learning
- * Staff more affected than students



Discussion: Change management & sustainability

Change Management

- * Struggle for survival in the context of globalization.
- * Technology determines *time* and *space* of globalization (Hopkins, 2002)
- * Hong Kong SAR has long been in the center of globalization
- * “Organizations do learn and adapt and that this enhances the organization’s ability to survive” (Fiol & Lyles, 1985, p. 808).
- * HKU has been constantly adjusting and evolving
- * Fast growth in HKU student population, from 14,848 (1997/1998) to the current 20,834
- * Internationalization of student population
- * Research-oriented mission and vision
- * (All instruction-oriented Hong Kong universities use Banner; all research-oriented universities, Oracle)



Discussion: Change management & sustainability

Innovation Adoption

- * 4 types of organizational change enabled by ICT (Laudon and Laudon 1998): automation, rationalization, reengineering and paradigm shift.
- * Type of technologies adopted by institutions, (Christensen 1997) calls 'sustaining technologies' (customers-proven sustainable improvement) as against 'disruptive technologies' (driven solely by satisfying customers' current needs)
- * HKU Case: A blending of a top-down decision making with bottom-up implementation.



Discussion: Change management & sustainability

Sustainability

- * A top-down model without any 'public consultation' but with transparency and rationality
- * Collegial and collaborative work of HKU staffs and experts from the vendor's company has been monitored by external consulting company during both pre-tendering and implementation period dispelled all possible wrongs usually linked to any top-down decision making processes.
- * The ongoing implementation phase is increasingly a bottom-up approach in terms of gathering end-users' experience backed by a projected testing period in which all the existing faculties will have a say and with their hands on.
- * Crucial challenge for sustainability: the end-users' high expectation (HKU end-users are 'spoiled' with in-house-built ICT system)
- * Sustainable change is possible given the right combination of vision, compromise, and commitment (Leskes et al. 2003)
- * All the cases of HKU clearly demonstrated (1) vision and mission (2) commitment and enthusiasm, and (3) external resource and support

ICT-mediated administration and management at HKU

- * Enterprise Resource Planning (ERP) project on two areas of ICT use:
 - * Student Information
 - * Human Resource Information Systems
- * Institutional strategies, impacts and challenges
- * Change management and sustainability
- * **Reflections and recommendations**



Reflections and recommendations

Recommendation 1:

ERP system implementation projects are complex and expensive, thus resource commitment and availability of budget, time, and expertise are crucial.



Reflections and recommendations

Recommendation 2:

The institution should retain ownership of the implementation process if the development of the ERP project is outsourced. The ERP project implementation responsibilities should be shared by the internal information technology unit and functional administrative units where the system is being implemented, and an *ad hoc* project management team as well as a full-time project manager should be ensured.



Reflections and recommendations

Recommendation 3:

An ERP project needs to be planned up front to reduce the risk of sizable unplanned efforts and costs. Professional external consultants can minimize such contingencies.



Reflections and recommendations

Recommendation 4:

Identify where your institution is, where it wants to go and how it's going to get there. This includes understanding your institution's strengths, weaknesses and core competencies, as well as the areas you want to improve. When a new institution is just starting out and firm processes do not yet exist, it would be more appropriate to begin with an ERP system as a way to structured operational processes. However, it would be a challenge for a comparatively well-established institution to adopt an ERP system.

Reflections and recommendations

Recommendation 5:

Identify a clear rationale for adopting an ERP solution and when it should be implemented. For example, research-focused and teaching-focused universities would consider different ERP solution and their approach to centralizing and decentralizing aspects of the ERP system maintenance and application services can vary substantially.

PeopleSoft.

ORACLE®

Reflections and recommendations

Recommendation 6:

As an ERP system is meant to facilitate the work of leadership and foster appropriate governance, ERP projects should be endorsed by the senior management of the institution, which should remain actively involved throughout the project implementation.



Reflections and recommendations

Recommendation 7:

The institution should enforce an adequate policy on customization and have a comprehensive and effective staff development program. Employees of different departments should receive training on how to work as a team on the project implementation. Ensuring a culture of change and change management is crucial to any ERP system implementation project.



Reflections and recommendations

Recommendation 8:

The institution should establish key performance indicators in order to perform post-implementation measurements to ensure sustainability of the ERP system implementation.



Thank You



Contact:

Allan Yuen

hkyuen@hku.hk

Centre for Information Technology in Education

Faculty of Education

The University of Hong Kong