

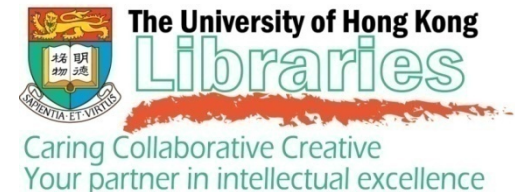


MAKING A GREAT LIBRARY EVEN BETTER: RFID AT THE UNIVERSITY OF HONG KONG LIBRARIES

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Deputy University Librarian

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Introducing RFID in libraries

- Late 1990s first installations – Singapore
- Predominately using High Frequency (HF)
- Libraries now starting to use Ultra High Frequency (UHF)
- Barcodes replaced by RFID tags
- Electromagnetic security strips replaced by RFID tags (sometimes)
- Item level tagging

Warehouse vs Library RFID

Warehouse

- Carton/box level
- Ship (mostly) items out
- Throwaway technology



Library

- Item level
- Items go out, come back in, go out, come back in, etc.
- Reusable technology



RFID in Libraries

Summary of processes

RFID in libraries, visually



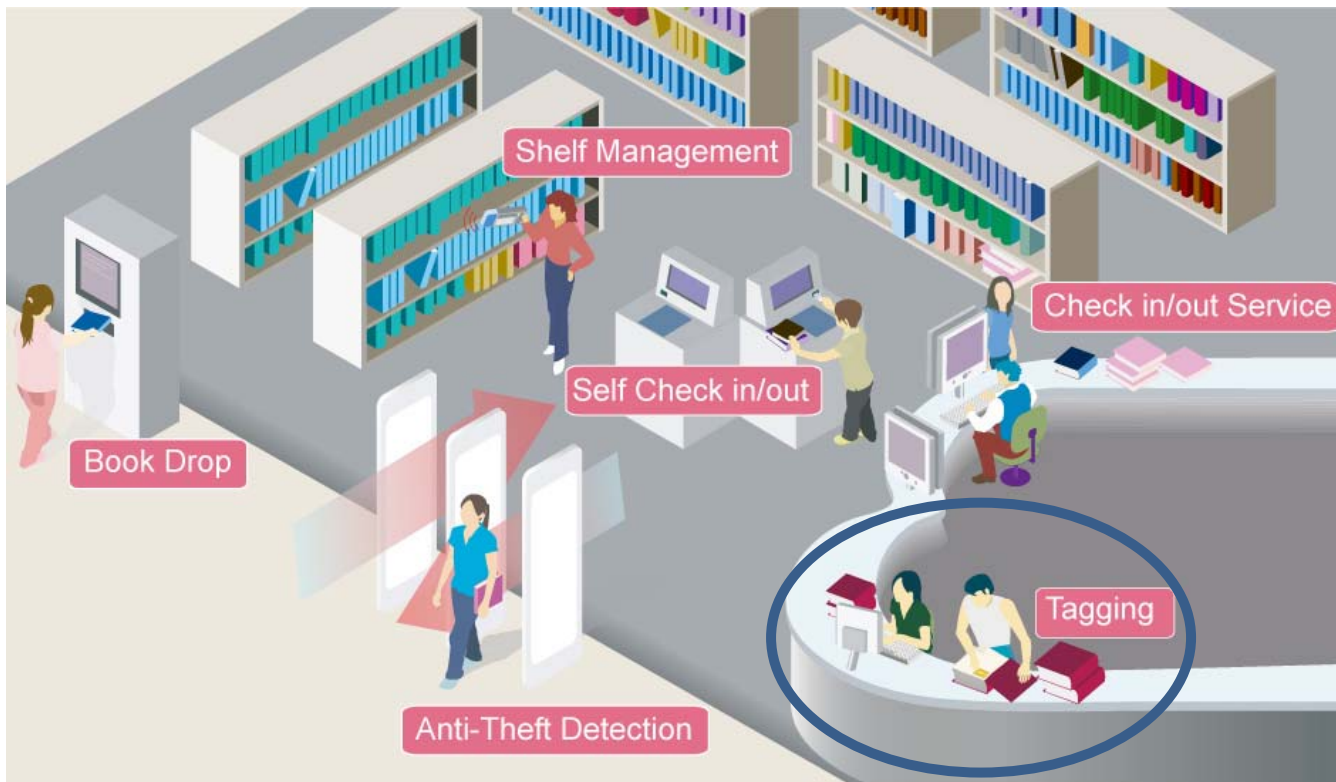
From:
<http://www.rfid-library.com/>

Benefits for libraries (1)

- Materials handling: Check-out/Check-in
- Materials handling: Self Check-out/Self Check-in
- Security
- Inventory/stocktake
- Tracking of lost items
- Shelf reading

Benefits for libraries (2)

- No line of sight: barcode vs RFID tag
- Less repetitive strain injuries for staff – improved occupational health and safety
- Increased productivity
- Improved customer service



RFID in Libraries:

1 Tagging/Conversion Process

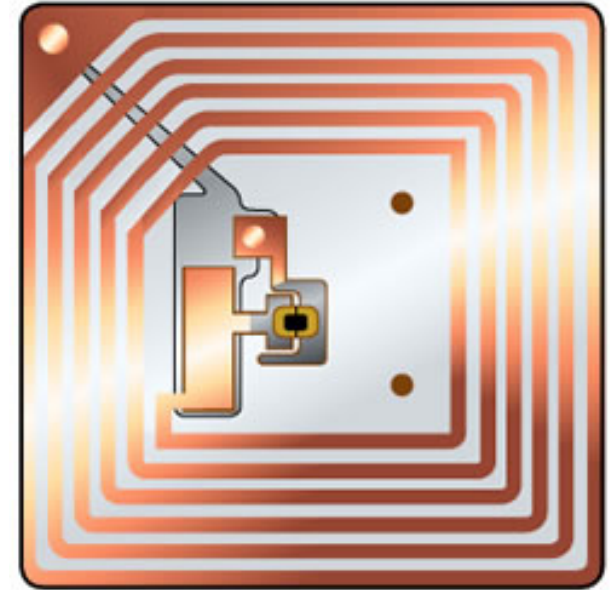
Tagging/Conversion Process



Tagging

Tagging

Tagging



1.3 million books with barcodes

Tagging

1.3 million books with tags

Only item number embedded in tag



ETIC RFID Library System - Windows Internet Explorer

http://147.8.31.18:8080/HKUAdminWeb/pages/common/main/main.action

File Edit View Favorites Tools Help

ETIC RFID Library System

HKU Libraries RFID Conversion System

Administration Statistics & Report

2008/9/12 8:31 AM
User: CCW Logout

Click "Export" button to output the report to file

Staff Performance

Staff ID: <any>
anita
asd_chanmk
asd_chansy

Report Type: Daily Hourly

From: Sep 2, 2008 To: Sep 12, 2008

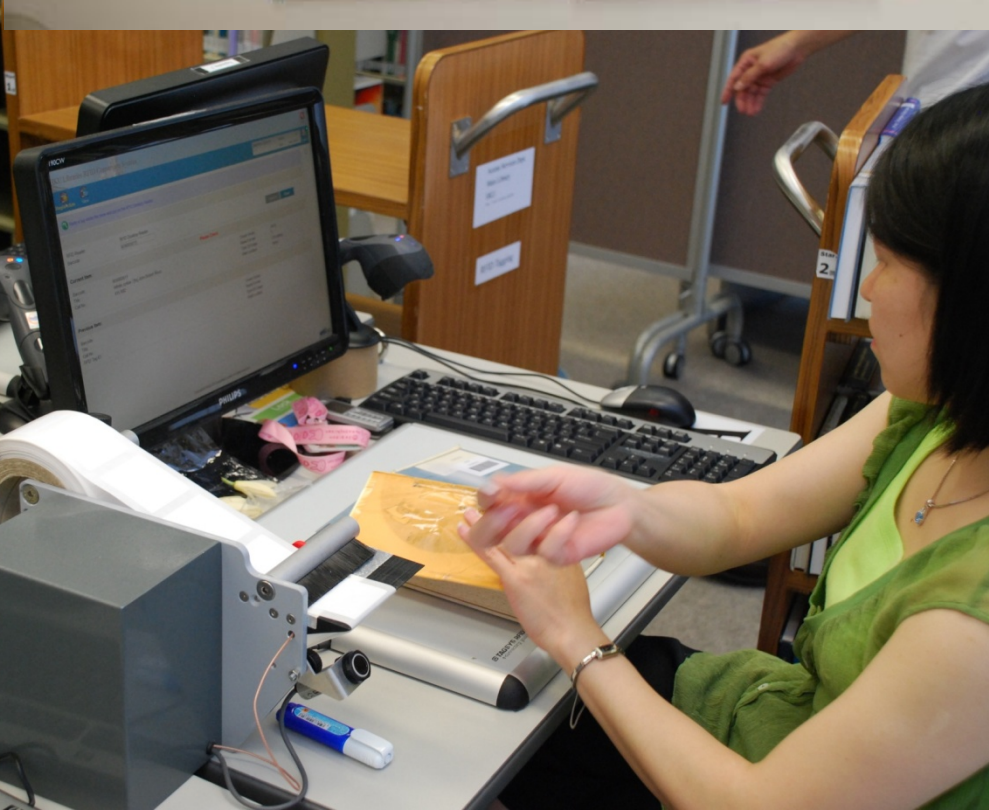
Submit

Date	Staff ID	Station ID	Action	Successful Count	Fail Count
2008-09-02	asd_yimky	8	Registration	122	0
2008-09-03	asd_yimky	8	Registration	159	3
2008-09-04	asd_yimky	8	Registration	220	4
2008-09-05	asd_yimky	8	Registration	217	15
2008-09-08	asd_yimky	8	Registration	108	21
2008-09-09	asd_yimky	8	Registration	306	7
2008-09-10	asd_yimky	8	Registration	249	7
2008-09-11	asd_yimky	8	Registration	199	14

Total: 8 From 1 to 8 Page 1 / 1

Export

Start ETIC RFID Library Sys... Welcome to HKU Libr... Desktop C8STAFF 8:31





RFID in Libraries:

2 Check in/out service

Check in/out service



Millennium Circulation - University of Hong Kong Libraries - Ruth Wong

File Edit View Go Tools Admin Help

Circulation Desk

Key or Scan Item or Patron Barcode

Search

PATRON NAME ASD RFID testing record
SS & Lib BC A889
PCODE1 -
PCODE2 -
PCODE3 0
P TYPE 11 Reg Grad - credit card holder
CUR CHKOUT 1
MBLOCK -
CL RTRND 0
MONEY OWED \$10.00
TOT CHKOUT 1363
TOT RENEWAL 0
EMAIL ASD@hku.hk

Check Out (1) | Checked-Out Items(1) | Holds(0) | Fines(\$10.00) | Check In (0) | Bookings(0) | INN.Reach(0)

Barcode	Title	Due Date	Status
x47986283	Qi meng shi dai / Wang Anyi zhu.	11 Nov 2008	

Change Due Date

Read

Check out	Check in	Status
Pause	F11	F12
Close		

Read: 0 Set EAS: 0 Invalid: 0
Queried: 0 Completed: 1 Total: 1

View Items	EAS On	EAS Off
Call No.	Status	EAS

Read

Queried

Set EAS

Completed

PL2919.A58:Q526.2007 Others Off

Fully integrated with our Library Management System (LMS)

Up to 5 items at once

Fast

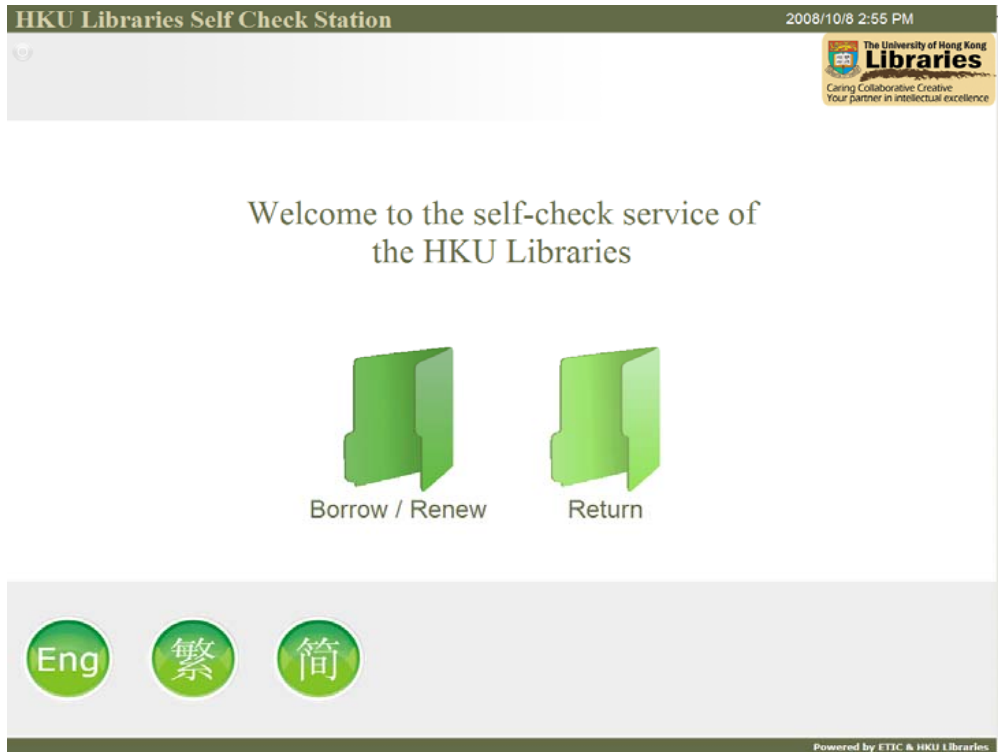




RFID in Libraries:

3 Self check in/out service

Self check in/out service



Fully integrated with our Library Management System (LMS)

Up to 5 items at once

Fast and no queuing



Welcome! **Wong Ruth Shuk Ching**

Total borrowed item(s): [9] Newly borrowed item(s): [5]



Important: Please remember to logout!

Borrow Item(s)

Call No.	Title	Due Date	Status
727.600099 M98 O85	Museum, gallery and cultural architecture in Australia, New Zealand and the Pacific Region : essays	06-04-09	✔ Checked-Out
299.935B S81 S	Rudolf Steiner : scientist of the invisible / A.P. Shepherd.	06-04-09	✔ Checked-Out
100 G34	The science of philosophy / F.H. George.	06-04-09	✔ Checked-Out
155.646 P9	The Psychology of grandparenthood : an international perspective / edited by Peter K. Smith.	06-04-09	✔ Checked-Out
100 F59	The new Tractatus : summing up everything / Bruce Fleming.	06-04-09	✔ Checked-Out

Continue placing items in the opening below until all books are borrowed. When you have finished, please remember to click the "Logout" button.



Logout



Return



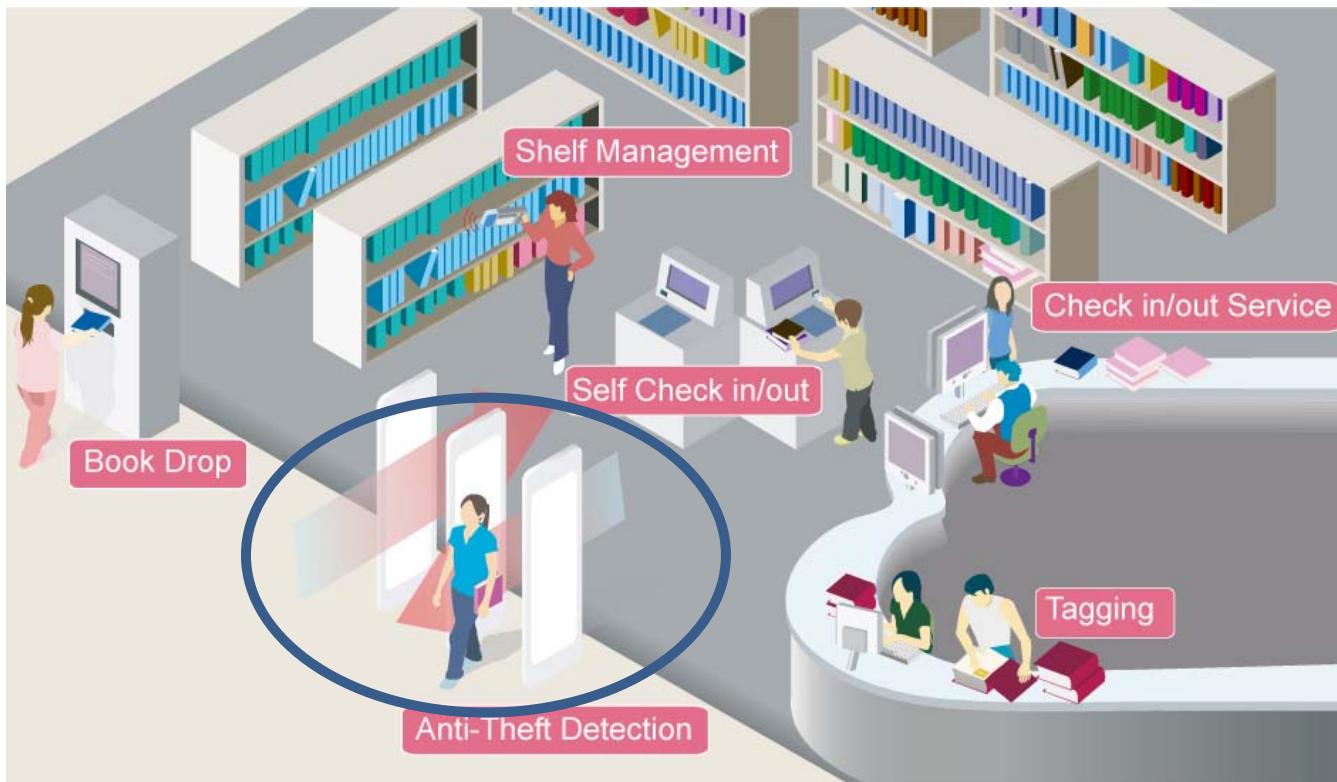
Renew



Ready For Pickup Item



Help



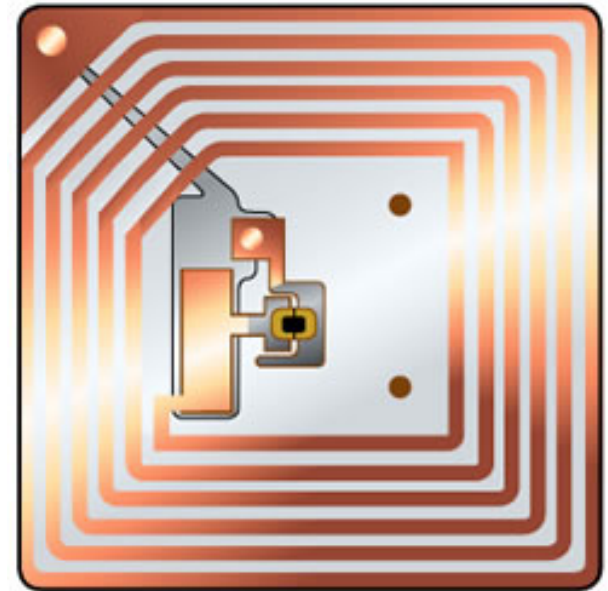
RFID in Libraries:

4 Security: Anti-theft detection

Security: Anti-theft detection



Electromagnetic strips



RFID tag with EAS bit

Security: Anti-theft detection



Some vulnerabilities



RFID in Libraries:

5 Shelf management

Shelf management

- Inventory/stocktake
- Tracking of lost items
- Shelf reading



Shelf management

- Portable, powerful hand-held WiFi "wand" antenna with lightweight reader.
- Ergonomic device quickly scans up to 20 standing or stacked items per second.
- Used to search for and identify mis-placed RFID-tagged items and manage inventory.



Sometimes it's hard to find that missing book



Sometimes it can be even harder!!



RFID in Libraries:

6 Book drop (and sorting)

Book drop (and sorting)





RFID at HKU Libraries



RFID at HKU Libraries: WHY?

- Our collection (digital):
 - e-journals – 52,841
 - Databases – 639
 - e-books – 1,573,054
- Our collection (print):
 - 2,645,696

RFID at HKU Libraries: WHY?

- Circulating items (materials handling)
 - 1.1-1.5 million loan transactions every year
 - + Similar number of *return* transactions
 - + 0.5 million items read in house
 - = **over 3 million physical items handled every year**
 - Up to 11,000 loans in Main Library in 1 day
 - Over 102,676 registered library users
- A philosophy of making library users self sufficient.

This is WHY?



Main Library: 08/10/08, 12:50



Main Library: 08/10/08, 12:50

RFID at HKU Libraries: WHY?

- Self-check (in and out)
- Patron satisfaction
- Staff productivity/savings/redeployment
- Staff satisfaction
- Security
- Inventory control/collection management
- The needle in the haystack
- Long term benefits/savings
- 24 hour service

Our requirements

- **Interface** with the existing Library Management System;
- **Self check** which will reduce the need for staff to perform repetitive check-in and check-out activities;
- Achieve a goal of **60-80% self-check**, resulting in staff savings;
- Implemented in the **Main Library** and in selected branches in the future;
- Improved decision making through the timely, accurate and comprehensive **reporting**;
- Efficient **collection management**, including stock-take, shelf reading, and identification of reserved items;
- Added **security** of Library items, resulting in a reduction in loss of Library resources.

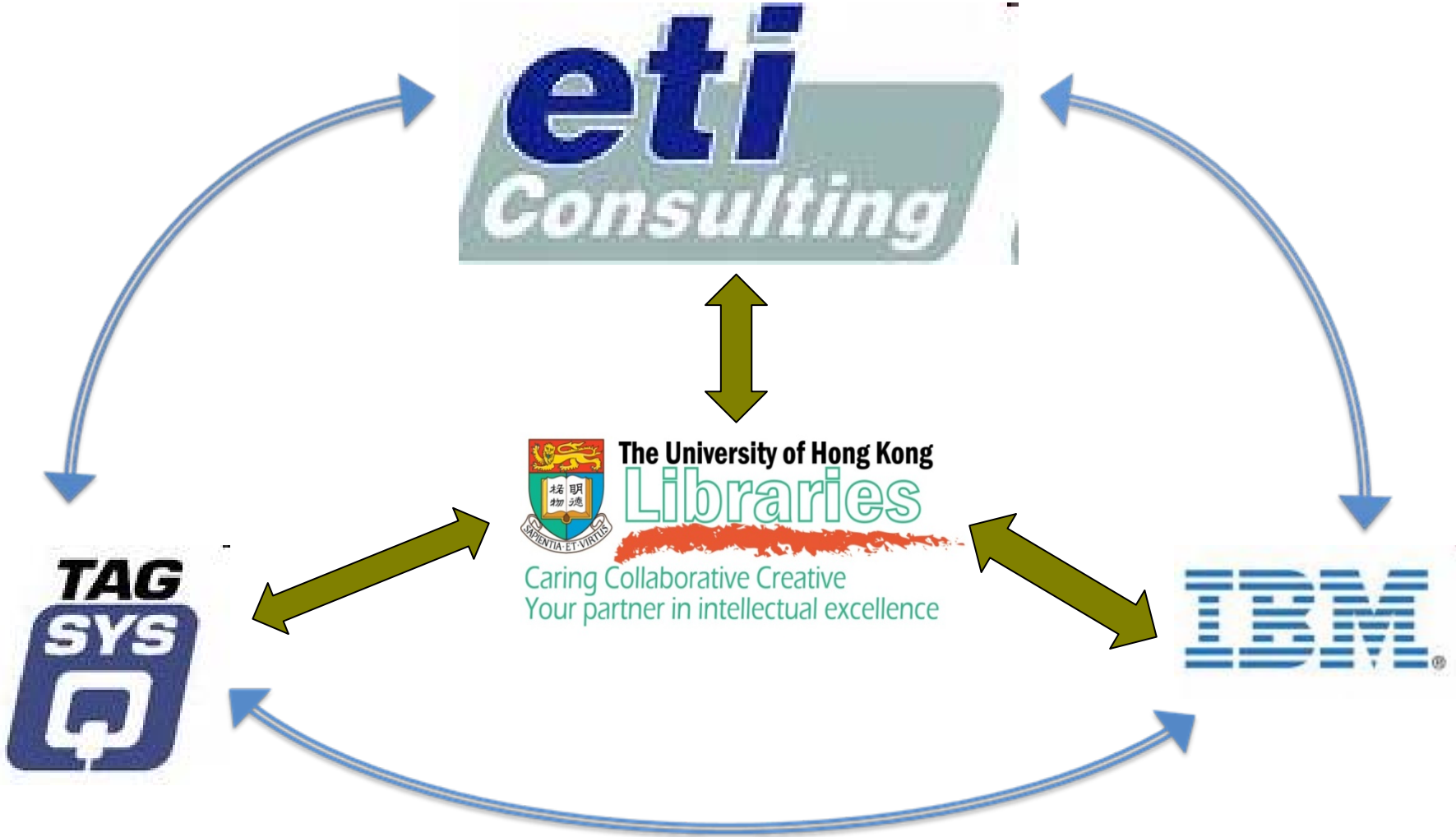
The Partnership



The University of Hong Kong

Libraries

Caring Collaborative Creative
Your partner in intellectual excellence



Why this partnership?

- International reputations
- Customised solution
- Further expansion
- Developmental opportunity for HKU Library staff

Further phases

1. Evaluation
2. Cost/benefit analysis
3. Deployment in larger branches? All branches?

Feedback

- “The new self-borrowing/returning booths are fabulous!”
- “Self serve check out stations are great.”
- “Library services are very good. The self check-in and out stands, for example provide a faster and more efficient way for students to obtain material.”
- “The introduction of self service checkout stations is particularly helpful.”

Feedback

- “The authentication process is clumsy.”
- “I feel like the self-check out stations are a waste of resources. They often don't work.”



Thank you.