

# Mobile App based Delivery with Home-made Website for Learning and Administrative Support – Sharing our Financial Insights with FSTE Institutions

Paper for presentation to FSTE 25th Anniversary Conference 2019,  
Developing Higher Education for Next Decade

20 June 2019 Grand Ballroom, New World Millennium Hong Kong Hotel  
2/F, 72 Mody Road, Tsim Sha Tsui East, Kowloon, Hong Kong  
Presentation PowerPoint schedule 6 June 2019

**Dr Brian Siu** 蕭錦添博士

H.Dip.SA *HKPU*, BA(Hons) *Sund.*, MSc *Lond.*, MPhil *City HK*, PhD *BuISU*

Technical Staff, School of Continuing and Professional Education  
City University of Hong Kong, Tat Chee Avenue, Kowloon Tong, Hong Kong  
Email: [dcbksiu@cityu.edu.hk](mailto:dcbksiu@cityu.edu.hk)

Presenter's Brief Profile: Worked at Cathay Pacific, HK Government, HSBC; Taught at NSW and Western Sydney Undergraduate programmes; Taught at City Polytechnic, Hong Kong Polytechnic, City University of Hong Kong Associate Degree, Top-up Degree programmes; Worked in I.T. Innovation since 2011-

10 min presentation: PowerPoint for 6 June 2019. Organizing Committee  
conference@fste.edu.hk.

Note: -this presentation may be too technical for participants not in I.T. area

Introduction

-Website tool by prominent FSTE institutions e.g. as at May 2019\*

\* Learning Management Platform Canvas, Blackboard ...but is it operationally efficient?

Case Study: Lecturing faculty asked:

“I cannot attach the student examination result” file to the Blackboard learning platform?

ERS100

-A Learning Support Website development project started in mid 2017, based on a lot of working out and research on latest Microsoft tools: → Operating System Windows 10; Web Design tool, Microsoft Expression

-Advantages: **easy maintenance** and **flexible data management**

→ can benefit FSTE Institution's Learning Support System for up-market mobile phone app usage

Budgeted planning and delivery mode through a methodology called MTO (made-to-order) which is → Mobile App based, DropBox based, Database based

ERS100 role!

12 core functions, accessible by Mobile App (register app on mobile phone screen)

(1) Program Mobile Apply, (2) Students download application form from drop box for application (3) Program Leaders accept application from drop box (4) Course teachers upload learning material to course drop box (5) Students download learning material (6) Students submit assignments to course drop box (7) Course teachers download and mark assignments from student submission (8) Course teachers upload marked assignments to individual students private drop box (9) Students receive marked assignments from teachers through private drop box (10) Course teachers upload course marks and grades for Examination Board meeting (11) Programme administrative personnel enroll teachers and students to new courses (12) Programme administrative personnel make announcements, input class and room booking information for student and teacher immediate access through mobile phone devices. (ref: Figures 1-12)

## Conclusion and Discussion:

Learning AND administrative support:

12 mobile app functions - 12 mobile app on the mobile phone device through: (only one light weight windows 10 server on a light weight PC same power as the office PC)

- Windows 10 operating system,
- Web site design based on html5, Microsoft expression web design, Visual Studio programming, Microsoft (SQL Server) database management system.
- User friendly database design through SQL Server Management Studio→easy database maintenance, MTO infrastructure provides flexible Apps (core functions)
- Cost per student low, IT staff budget low (SharePoint tool good, but does not provide persistent data storage), DropBox systems and files stored on the hard disk folders (the C: drive, 1,000GB)

Advantages: **Mobile App** based delivery **up-market** for students, teachers and programme admin. Support personnel (mobile app also desktop compatible hybrid running mode, e.g. learning material PowerPoint, Voice, Video upload to Drop Box -with home-made website for learning and administrative support

Sharing our financial insights with FSTE institutions - good for newly started institution with little support on budget and staff resource

- our major design rationale: ease of use (mobile app), ease of development (using the MTO infrastructure: OS, web design platform, programming (program libraries of Microsoft Visual Studio)
- Cost per student, IT staff budget: financial issues vs efficiency issues |

### Quick Review:

Is our Mobile App ready to support Higher Education for the Next Decade 2021-2030?

- It is ready now for quick and efficient development work based on our Make-To-Order (MTO) development methodology - using DropBox, Database, File folder infrastructure.

## 10 min Q&A

Questions from **Organizing Committee:**

1. Although the 12 core functions may be interesting, would most institutions use Learning Management (legacy issue!)
1. 2. Software/Portal instead of Dropbox? (persistent storage through DropBox and Database Storage and Database Management technique)
  - ➔ cost of website tool, cost per student e.g. use of Canvas Learning Management System
  - ➔ would institutions use Learning Management System?  
(Overseas) Partner institutions: Blackboard  
Software/Portal Purchased. Yes – cost of software, cost of maintenance personnel

**Questions from teaching faculty, programme  
administration staff, school management,  
programme leader welcome!**

Further Q&A: Any practical use now?

(factors include; partnership with overseas programmes, partner institution's learning management platform, ...)

Further Case Study: on COST & EFFICIENCY...(Proof of Concept, and Design): Student went home from Kowloon Tong campus, receive lecture note in DropBox when train arrived in Tai Wai, May 2018 efficient, access speed great!

Figure 0: First Mobile App – each function can be a Mobile App.

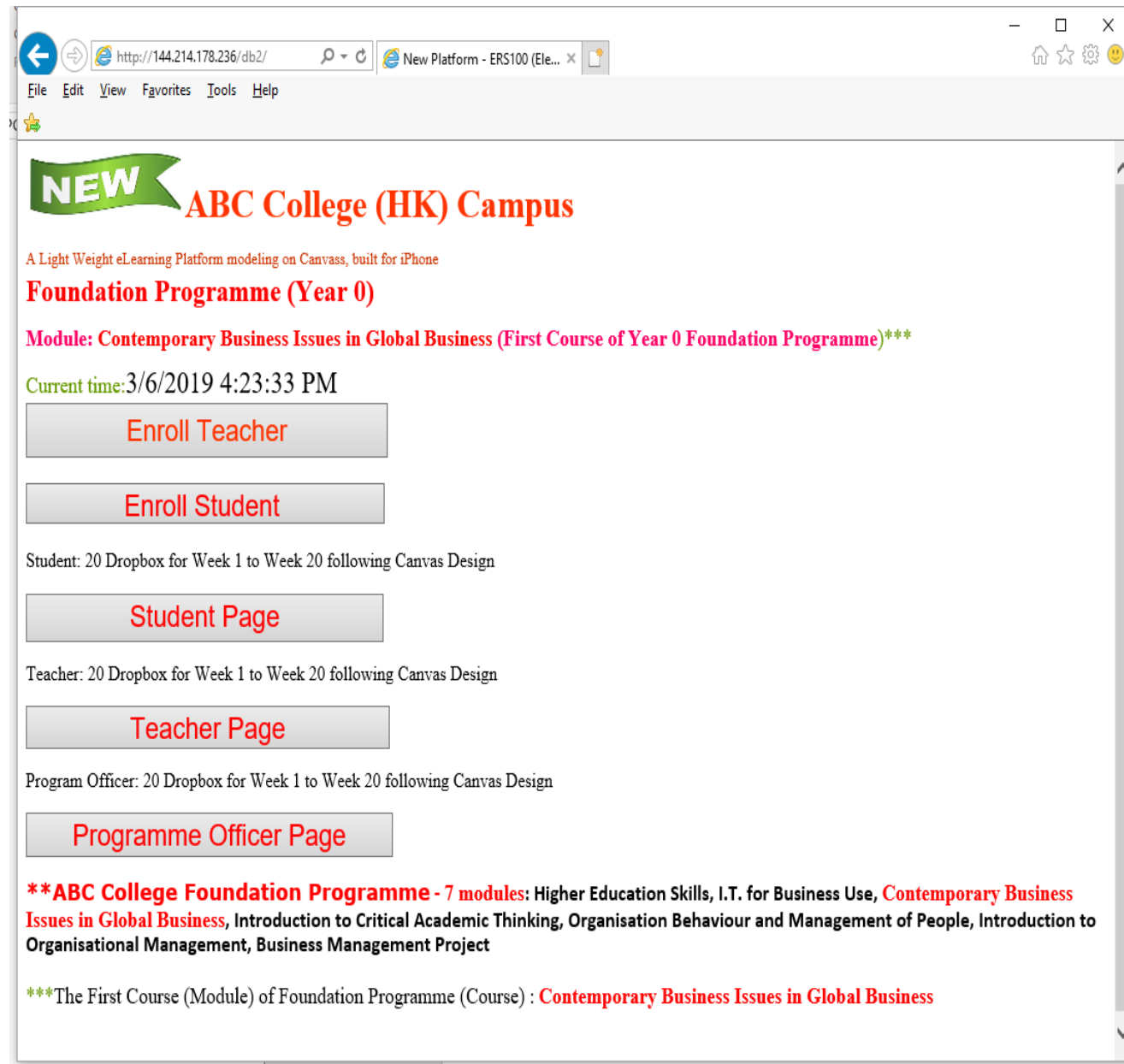
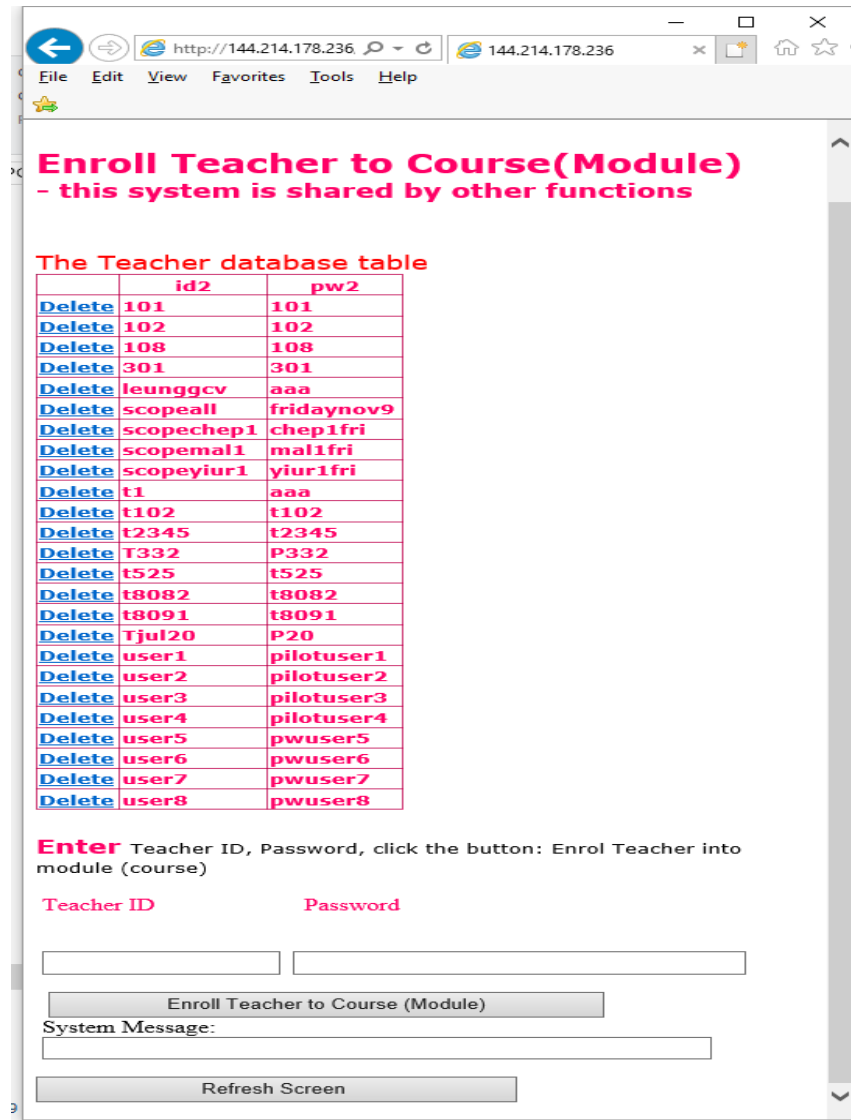




Figure 1: Mobile App - Enrol Teacher (see Figure 0).



**Enroll Teacher to Course(Module)**  
- this system is shared by other functions

The Teacher database table

	id2	pw2
Delete	101	101
Delete	102	102
Delete	108	108
Delete	301	301
Delete	leunggc	aaa
Delete	scopeall	fridaynov9
Delete	scopechep1	chep1fri
Delete	scopemal1	mal1fri
Delete	scopeyiur1	yiur1fri
Delete	t1	aaa
Delete	t102	t102
Delete	t2345	t2345
Delete	T332	P332
Delete	t525	t525
Delete	t8082	t8082
Delete	t8091	t8091
Delete	Tjul20	P20
Delete	user1	pilotuser1
Delete	user2	pilotuser2
Delete	user3	pilotuser3
Delete	user4	pilotuser4
Delete	user5	pwuser5
Delete	user6	pwuser6
Delete	user7	pwuser7
Delete	user8	pwuser8

**Enter** Teacher ID, Password, click the button: Enrol Teacher into module (course)

Teacher ID Password

Enroll Teacher to Course (Module)

System Message:

Refresh Screen

Figure 2: Mobile App – Enroll student (see Figure 0).

The screenshot shows a web browser window with the address bar displaying `http://144.214.178.236`. The page title is "Enroll Student to Course(Module)" and a subtitle reads "- this system is shared by other functions".

**The Student Database table**

	id2	pw2
<a href="#">Delete</a>	101	101
<a href="#">Delete</a>	s101	s101
<a href="#">Delete</a>	s2345	s2345
<a href="#">Delete</a>	s8082	s8082
<a href="#">Delete</a>	stud1147	bbb
<a href="#">Delete</a>	user	password
<a href="#">Delete</a>	user123	password

**Enter** Student ID, Password, click the button: Enrol Student into module (course)

Student ID      Password

System Message:

Figure 3: Mobile App – Student download lecture note and announcement (see Figure 0 Student Page).

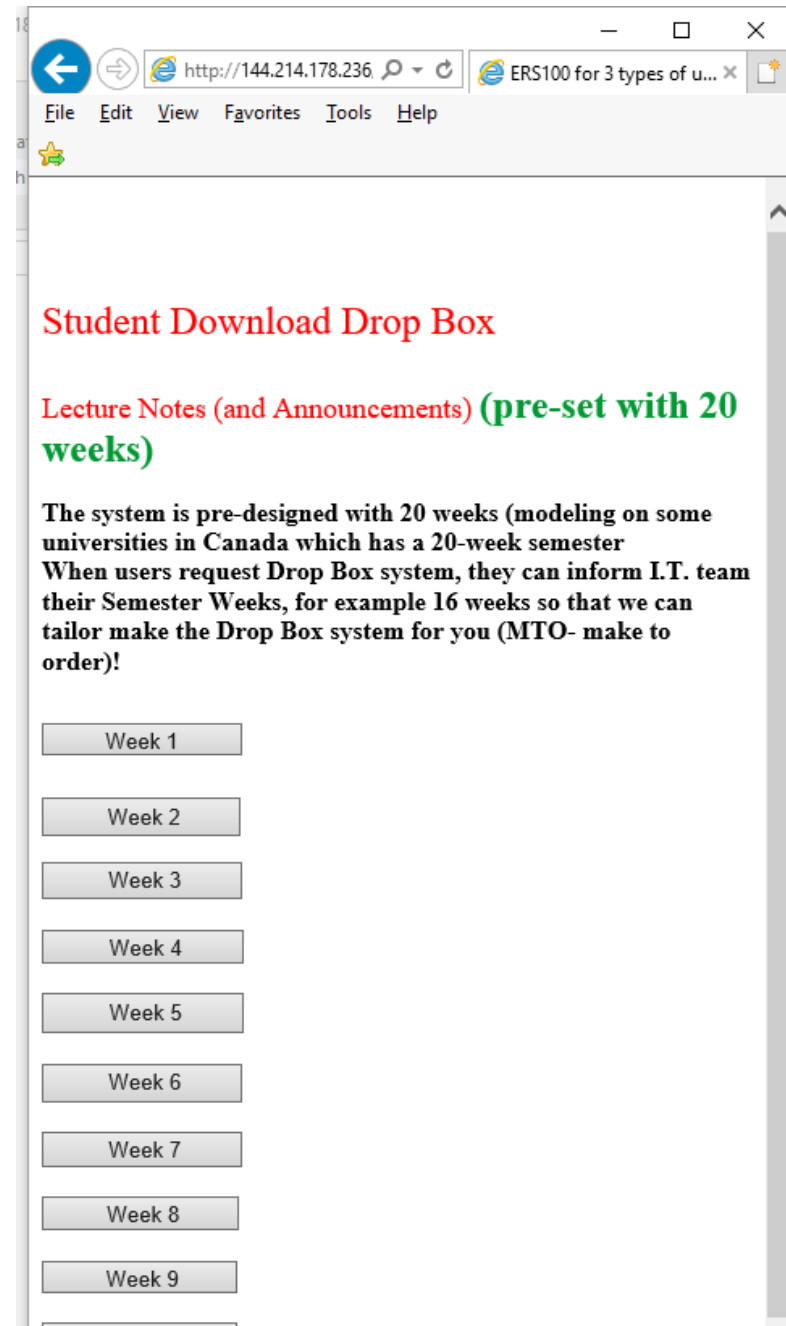
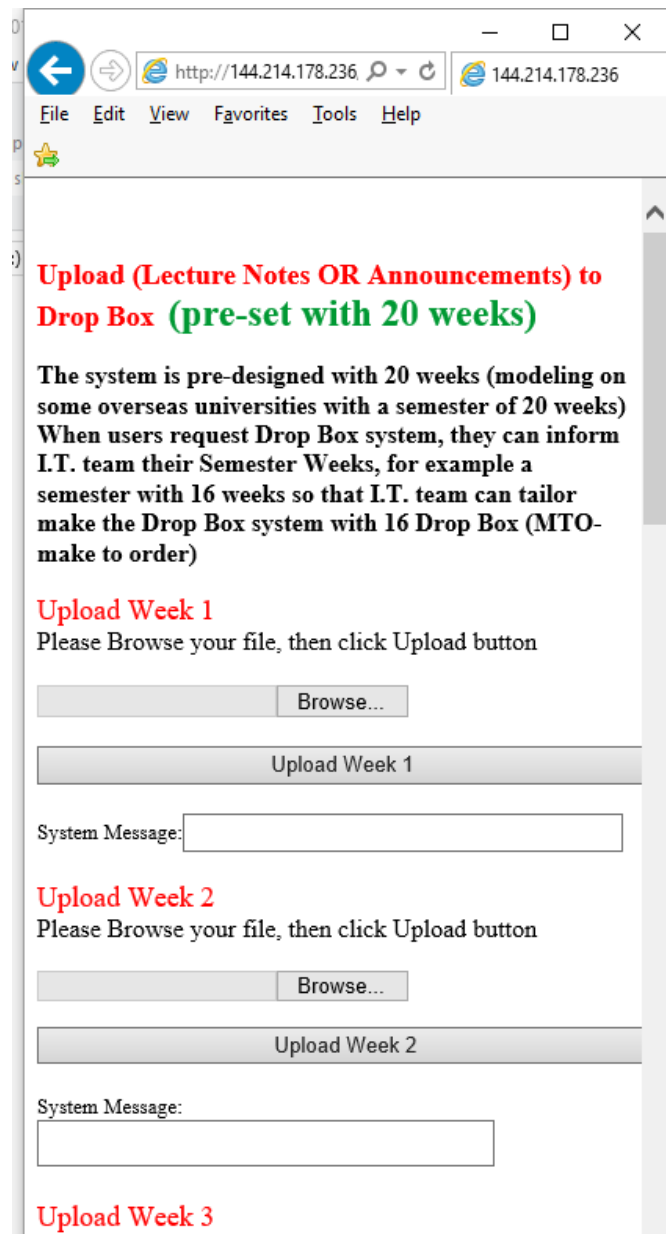


Figure 4: Mobile App – Teacher upload lecture note.



The screenshot shows a web browser window with the address bar displaying `http://144.214.178.236`. The browser's menu bar includes `File`, `Edit`, `View`, `Favorites`, `Tools`, and `Help`. The main content area of the browser displays the following text:

**Upload (Lecture Notes OR Announcements) to Drop Box (pre-set with 20 weeks)**

The system is pre-designed with 20 weeks (modeling on some overseas universities with a semester of 20 weeks) When users request Drop Box system, they can inform I.T. team their Semester Weeks, for example a semester with 16 weeks so that I.T. team can tailor make the Drop Box system with 16 Drop Box (MTO-make to order)

**Upload Week 1**  
Please Browse your file, then click Upload button

System Message:

**Upload Week 2**  
Please Browse your file, then click Upload button

System Message:

**Upload Week 3**

Figure 5-Figure 12 - covers other functions below:

(1) Program Mobile Apply, (2) Students download application form from drop box for application (3) Program Leaders accept application from drop box (4) Course teachers upload learning material to course drop box (5) Students download learning material (6) Students submit assignments to course drop box (7) Course teachers download and mark assignments from student submission (8) **Course teachers upload marked assignments to individual students private drop box** (9) **Students receive marked assignments from teachers through private drop box** (10) Course teachers upload course marks and grades for Examination Board meeting (11) Programme administrative personnel enroll teachers and students to new courses (12) Programme administrative personnel make announcements, input class and room booking information for student and teacher immediate access through mobile phone devices.

# Mobile App based Delivery with Home-made Website for Learning and Administrative Support – Sharing our Financial Insights with FSTE Institutions

Paper for presentation to FSTE 25th Anniversary Conference 2019 Developing Higher Education for Next Decade  
20 June 2019 Grand Ballroom, New World Millennium Hong Kong Hotel  
2/F, 72 Mody Road, Tsim Sha Tsui East, Kowloon, Hong Kong

Dr Brian Siu

School of Continuing and Professional Education  
City University of Hong Kong, Tat Chee Avenue, Kowloon Tong, Hong Kong  
Email: dcbksiu@cityu.edu.hk

---

## Abstract

This paper describes our Learning Support Website development project\*\* experience that can benefit FSTE Institution's Learning Support System budget planning and delivery mode. Through adopting the latest Microsoft Technology with central database control, this paper suggests that while it is an option to purchase Content Management Software and subscribe to eLearning services there is the alternative of home-based development. We postulated that it is not a must to go for subscription as some usage experience revealed issues on access efficiency, cost and usability efficiency. Our research and development work experience on Mobile App based Website delivery resulted in a set of program templates called the Make-To-Order (MTO) development methodology for enhancing new systems to support new programme, new teachers and new cohorts of students, who will be trained to use the systems using our YouTube based videos for repeated viewing and familiarization with no extra cost.

A brief overview of 12 core functions of learning support and programme administration will be described in the paper, covering: (1) Program Mobile Apply, (2) Students download application form from drop box for application (3) Program Leaders accept application from drop box (4) Course teachers upload learning material to course drop box (5) Students download learning material (6) Students submit assignments to course drop box (7) Course teachers download and mark assignments from student submission (8) Course teachers upload marked assignments to individual students private drop box (9) Students receive marked assignments from teachers through private drop box (10) Course teachers upload course marks and grades for Examination Board meeting (11) Programme administrative personnel enroll teachers and students to new courses (12) Programme administrative personnel make announcements, input class and room booking information for student and teacher immediate access through mobile phone devices.

Numerous tests have been made using the smart phone (mobile phone), with contributions as users from students, teachers and administrative support personnel. The successful result showed that the Mobile App access to learning support platform provides extra attraction for the students learning engagement.

Discussions and exchange can be made with attendees providing our insights on budgetary issues, advantages and actual benefits to different stake holders and efficiency gained through tailor-making our own systems with higher efficiency as opposed to subscribing to the rather expensive eLearning services on a student count basis or purchasing content management package which requires deep learning curve and more layers of support personnel.

Keywords: I.T. development strategy; new technology adoption; mobile-based learning support.

---

## \*\*Acknowledgements

The work was partially supported by staff development budgets from the School of Continuing and Professional Education (SCOPE); partly supported by the Microsoft Developer Network resources; plus the support and participation of volunteering students, teachers and program administrative personnel in numerous testing and releases of prototypes in the last 2 years.

Acknowledgements: Thanks to the **Organizing Committee** FSTE 25th Anniversary Conference 2019  
Developing Higher Education for Next Decade



[conference@fste.edu.hk](mailto:conference@fste.edu.hk)

- (1) Mobile Apply students log in to the system with mobile phone, Name and Email,
- (2) Programme Enrolment Workflow (Programme application)
- (3) Programme Enrolment Workflow (Program Leader accepts application)
- (4) Teacher Upload Learning material DropBox
- (5) Student download Learning Material DropBox
- (6) Student Submit Assignment DropBox,
- (7) Teacher download assignment for Marking
- (8) Teacher upload Marked Assignments to Student own DropBox
- (9) Student receive Marked Assignment in own DropBox
- (10) Teacher upload course mark for Exam. Board Meeting
- (11)) Programme Admin. Staff Enroll teacher and Enroll student (database entry)
- (12) Programme administrative personnel make announcements, input class and room booking information

**Quick Review again:**

**Is our Mobile App ready for Next Decade 2021-2030?**

**-It is ready now for quick and efficient development work based on our Make-To-Order (MTO) development methodology - using DropBox, Database, File folder infrastructure!**

**Thank You!**