

## I. School Background

Carmel Secondary School is an EMI School aiming at providing whole-person quality education to students. Teachers have been working hard in various aspects of the school. Students are willing to learn and taking part in activities of different kinds. Teachers and students have been building good relationships based on respect and trust.

## II. Needs Assessment

In recent years, the amount of various administrative works continues to increase. Teachers have been paying more effort and spending more time in handling the increasing workload. However, these works may result in neither developmental meanings to teachers nor educational meanings to students. Teachers have never undervalued their educational works in teaching, designing student assignments and projects, marking students' works, etc. These works are of important values to students in their learning. If the extra effort paid and time spent in the increasing administrative works can be relieved, both the teachers and the students should be benefited.

### The need for a new system handling students' attendance

The current tasks of handling students' attendance are mostly manual, though with the help of the Websams. Class teachers have to find out the absentee(s) in the class. After marking on the attendance registers, the janitors have to walk around the classrooms to collect all these registers and submit to the clerk responsible. In the last stage, the clerk has to input the attendance information into the Websams. These procedures consume a lot of human resources and time.

### The need for a new system for collecting fees

As students are encouraged to take part in more learning activities of different kinds, more procedures of fee collection are caused. Lots of current activities are open to students in various classes of various forms. The increasing complexity of fee collection continues to affect the daily teaching and learning tasks. A lot of precious time is inevitably consumed in these procedures of fee collection. The handling of large amounts of money by both students and teachers is certainly another problem.

### The need for an enhanced library system

Students currently use their student identity cards for borrowing books. From time to time, there will be charges due to late returns as well as damage and loss of books.

The time spent in finding coins for handling charges is especially expensive in the precious recess and lunch times of students. This is not encouraging to students who want to borrow books for reading.

#### The need for securing facilities

Some facilities and resources in the campus are of high values, for example, the servers and hard disk storage systems. In addition to their high costs, the critical data stored are worth special attention and protection. They have to be kept well from theft and destructions. Traditional locks and keys may not be as satisfactory as current technologies which can monitor the access of each of the users.

#### The need for a unified system

A Smart Card System will definitely meet the above needs of the school. All students can put their cards over a reader for taking attendance. If each of the cards can have stored values, it can be used for payment purposes. In the library, the card can be used for paying charges induced. When teachers use the card system as well, the use of the valuable facilities can be controlled and monitored more effectively for all school users.

### III. Expected Functionalities of the Smart Card System

In the required Smart Card System, a unique smart card should be associated with each student. It should be capable of storing a value amount. The following functions of the system should be expected:

#### 1. Handling students' attendance

The system is expected to streamline the attendance taking procedures. When students enter the school campus, they have to put their cards over one of the readers. Their attendance information are recorded immediately and transferred to the Websams. The attendance details for each class can soon be printed for each teacher in the classroom to verify.

The absence and late records can be used immediately to compare against the records of sick leave requests from parents. If there is any discrepancy, fast phone follow-ups can be done.

Mobile card readers should also be used for activities held in various spots in the school as well as outside the campus. These activities include Sports Day, Swimming Gala, Anniversary gatherings and the like.

## 2. Fee Collection

Students can use their smart cards to pay fees efficiently. There may be a lot of payments resulting from a variety of purposes. And each student might have to pay different items. As long as the required fees for each student in any item are input, the exact fee can be transferred in seconds. If a receipt printer is linked to the system, it can be printed immediately for reference. Students and their parents can obtain clear records of payments made.

The school staff can easily trace students who have made payments with their smart cards as well as those who have not. The latter students can then be found quickly and requested to make payments through a self-service smart card kiosk at any time convenient to them. Such a kiosk should be installed in the most accessible location in the campus.

For accounting purposes, the school staff can have a central system to produce a variety of reports related to the payments. These reports can be used for accounting, tracing students' payments, etc. As the work of handling money notes and coins is much reduced, the accuracy is definitely raised. Labour effort and time should also be definitely saved.

## 3. Library System

The smart card system should be linked to the library system. The card can then be used for borrowing books. As charges might be incurred in the cases of book damage and loss, as well as late returns, the smart card can be used to pay the charges. The payment should also be made efficiently and accurately.

In addition to the benefit that all charges incurred are made electronically, the data about the charges can thus be recorded accurately. The statistics produced might help to suggest improvements to more proper use of library resources.

## 4. Access Control System

Some valuable resources and facilities in the campus should be protected. In addition to the traditional locks and keys as well as password control, a smart card should be an essential key to access the related rooms storing the resources and facilities. A list of users with permitted rights is inputted to the system. Then only eligible users can access the rooms with their smart cards. The system can thus produce a summary of access records from time to time for security reviews.

## IV. Implementation Plan

1. A committee will be formed to investigate the implementation of the system:

Members	Responsibilities
Vice-Principal	Overall-in-charge
Chairperson of IT Development and Administration	Overseeing system installation, implementation and evaluation
Accountant	Setting fee collection procedures
Chairperson of Disciplinary Education Team	Coordinating attendance-taking matters
IT Support Assistants	Technical Support

2. Implementation Schedule:

Mar 2014	Collection of quotations from potential vendors
Apr 2014	Hardware installation
May 2014	Test run of the system
Jun 2014	Implementation of the system
Jul 2014 – Feb 2015	Continuing evaluation of operation procedures

## V. Budget

Equipment Cost	Unit Price (HK\$)	Quantity	Amount (HK\$)
Basic Package for a Smart Card System: Software: <ul style="list-style-type: none"> <li>• Attendance taking system</li> <li>• Message system</li> <li>• Integration with Websams</li> <li>• Fee collection system</li> </ul> Hardware: <ul style="list-style-type: none"> <li>• Attendance-taking Device (Fixed) x 1</li> <li>• Fee Collection Device x 1</li> <li>• Backup Storage Device x 1</li> <li>• Registration Device (Mobile) x 1</li> </ul> Installation, Training and Maintenance <ul style="list-style-type: none"> <li>• Hardware &amp; Software</li> <li>• In-house training</li> <li>• First-year free maintenance &amp; updates</li> </ul>	53,000	1	53,000
Cabling	20,000	1	20,000

Multi-Function Kiosk	32,000	1	32,000
Receipt Printer	3,500	2	7,000
Additional Attendance-taking Device	4,500	2	9,000
Required Software	5,000	1	5,000
Required Software License	2,000	1	2,000
Library System Software	5,000	1	5,000
Fee Collection Device	5,500	1	5,500
Access Control Device	8,500	3	25,500
Total			164,000

<b>Staff Cost (Post: IT Support Assistant)</b>	<b>Amount (HK\$)</b>
\$9,450 per month (MPF included) x 4 months 7 days	40,005

<b>General Expenses (Auditing Cost)</b>	<b>Amount (HK\$)</b>
Audit Fee	5,000

Contribution Breakdown	School Contribution		QEF Grant Sought (HK\$)
	Amount	Source	
Facilities / Service Cost	94,000	School Funds	70,000
Staff Cost	5	School Funds	40,000
General Expenses			5,000
Total grant requested from QEF			115,000

### Assets Usage Plan

Category	Item / Description	No. of Units	Total Cost HK\$	Proposed Plan for Deployment
Computer hardware	Basic Package for a Smart Card System	1	53,000	The assets will continue to be used by the school for the same purposes as described in the project application.
	Multi-Function Kiosk	1	32,000	
	Receipt Printer	2	7,000	
	Additional Attendance-taking Device (with software and license)	2	16,000	
	Additional Fee Collection Device	1	5,500	
	Access Control Device	3	25,500	
Computer software	Library System Software	1	5,000	

## VI. Evaluation Plan and Maintenance Plan

## Evaluation Plan

Surveys will be carried out to collect responses from users in the following aspects:

- (i) Administration procedures are streamlined.
- (ii) Overall administration efficiency is raised.
- (iii) Time spent by staff and students in daily attendance taking and fee collection is lowered.
- (iv) Accuracy of attendance taking and fee collection is raised.
- (v) Workload of staff in attendance taking and fee collection is reduced.
- (vi) Efficiency of handling book lending and charges is increased.
- (vii) Security of various facilities in the campus is upgraded.

## Maintenance Plan

The maintenance in the first year should be provided by the service vendor. Thereafter, the maintenance plans offered by the service supplier will be considered by the school in each of the following years.

## VII. Report Submission Schedule

My school commits to submit proper reports in strict accordance with the following schedule:

Project Management		Financial Management	
Type of Report and covering period	Report due day	Type of Report and covering period	Report due day
Final Report 1/3/2014 - 28/2/2015	31/5/2015	Final Financial Report 1/3/2014 - 28/2/2015	31/5/2015

