# Field Trial of Student Support Solution in Collaboration with Chulalongkorn University

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**Fujitsu constructed a student support solution based on the Fujitsu Education Solution Campusmate-J/Student series of comprehensive student support systems and tested it in a one-year field trial in collaboration with Chulalongkorn University of the Kingdom of Thailand from June 2013 to June 2014. The objectives included evaluating its effectiveness and expanding its functionality to meet the needs of other universities in Thailand and Japan. This solution provides information and advice tailored to the needs of students who excel in sports, art, or music. In the trial, various types of information related to the target students was collected from multiple departments at the university and consolidated into a system so as to make it visible. This system is aimed at identifying students who need support, creating opportunities for advisors and students to communicate with each other, and improving student services.**

## 1. Introduction

Today, universities in Japan are being called upon to educate and develop students who can help solve a variety of national problems, ranging from a rapidly aging society due to a low birth rate, to the globalization of corporate activities and intensification of international competition due to the economic rise of emerging nations. At the same time, student values are becoming increasingly diversified, and there is a need for a support system that can accommodate the individual situation of each student.

In response to this need, Fujitsu developed three systems to support communication between faculty members and individual students and has been providing them to Japanese universities. These three systems, Campusmate-J/StudentChart, Campusmate-J/StudentView, and Campusmate-J/StudentSupport, comprise the Campusmate-J/Student series of comprehensive student support systems.

Although this student support solution has so far been marketed only within Japan, it could also be used in universities overseas that face problems similar to those in Japanese universities. Such an expansion into the global market would create new business opportunities, and the knowledge gained in that process could stimulate innovation that leads to an improvement in Fujitsu solutions provided within Japan and to the creation of totally new services.

With this in mind, Fujitsu surveyed universities in the ASEAN region in 2012 and conducted a field trial of a student support solution at Chulalongkorn University, a highly distinguished institution of higher education in the Kingdom of Thailand, from June 2013 to June 2014.

This paper first describes the survey done to select a target country, three key problems facing Chulalongkorn University, and Fujitsu's proposed solution. It then presents the objectives and significance of this field trial, the hypothesis testing, and the results. It concludes by discussing the knowledge gained from the field trial and future directions.

## 2. Selection of location

We start by introducing the history behind the launch of the field trial at Chulalongkorn University.

### 2.1 Survey

First, to ascertain differences in information and communications technology (ICT) penetration and needs among various ASEAN countries, we conducted a

survey on ICT maturity and the associated market environment. The following summarizes the survey results for Thailand.

1) ICT maturity

- The proportion of schools with Internet and broadband access[1)] is 100%, and schools themselves possess ICT infrastructures.
- The percentage of students who have been using computers for five years or longer[2)] is the same as in Japan, and there is no hindrance to computer use in schools.
- The number of students per school computer is 25,[1)] which, when compared with the 13 students per computer in Malaysia, indicates that computer use in school is still lagging.

2) Market environment

- The ratio of public expenditure on education to total government expenditure[3)] is 29.4%, the largest outlay in the ASEAN region.
- The enrollment ratio in tertiary education[4)] is 44.7%, which is about eight points above that of second place Malaysia (36.5%).

Taking all this into account, we concluded that the level of ICT maturity is high in Thailand, that an ICT infrastructure has been set up within schools, and that students have experience in using computers. We also found from the market environment that the country expects its universities to grow. Furthermore, we learned from knowledgeable persons that issuing academic transcripts takes a relatively long time and that registering for courses is still done manually, evidence that ICT use in schools is lagging. We thus decided to focus on Thailand.

## 2.2 Problems facing Chulalongkorn University

We then surveyed several universities in Thailand regarding their use of ICT and found that they faced problems similar to those in Japan. In particular, Chulalongkorn University, Thailand's highest institution of learning, faced three problems in terms of supporting their students.

- Each department in the university manages student information separately, making comprehensive referencing of student information difficult.
- Some scholarship students who excel in sports, art, or music cannot meet the academic requirements while participating in such extracurricular activities, making the termination of those activities or even withdrawal from school a possibility.
- There are few opportunities for advisors to counsel students who are having trouble balancing schoolwork with their extracurricular activities.

## 2.3 Proposed solution

In response to the problems described above, Fujitsu proposed a student support solution based on its Campusmate-J/StudentChart system with added functionality designed to meet the specific needs of Chulalongkorn University. The Campusmate-J/StudentChart system (**Figure 1**) unifies and visualizes student information, thereby providing a means for communication that can be used by both faculty and students. It aims to promote student development through a multifaceted, total-service approach.

# 3. Objectives and significance of field trial, hypothesis testing, and results

When the field trial commenced in June 2013, the first step was input of data into the system and visualization of that data. Collection of feedback from the university through hypothesis testing began in December. This trial was conducted in collaboration with the Office of Student Affairs of Chulalongkorn University and with about ten advisors from various departments in the university. The target student population comprised about 500 students who excelled in sports, art, or music. After discussing the objectives and significance of the field trial, we describe the hypothesis testing and present key results.

## 3.1 Objectives and significance of field trial

As mentioned above, the problems facing Chulalongkorn University are similar to those facing universities in Japan, so Fujitsu's solution can potentially contribute to their elimination. Although this solution has been introduced at many universities in Japan, this was its first overseas implementation. We therefore adopted a field-trial approach with the following objectives, which reflect benefits for both Chulalongkorn University and Fujitsu.

1) Chulalongkorn University

- Identify students who need support by

unifying and comprehensively visualizing student information currently managed separately by each department in the university.
- Improve student services centered about the Office of Student Affairs by creating opportunities for advisors and students to communicate with each other.

2) Fujitsu
- Obtain early feedback and needs-related information from the university by limiting the number of participating individuals and running the project in a "small start" manner.
- Expand its functionality to meet the needs of other universities in Thailand and Japan.

## 3.2 Hypothesis testing

We performed hypothesis testing centered about results achieved by operations within Japan and the expected effects of the trial. We tested whether the existing functions were sufficient to achieve the stated objectives from a strictly objective viewpoint. We also tested whether the operation mechanisms were suitable. We identified six expected effects of the trial.

1) Unifying and visualizing student information would enable advisors to identify students in need of support.
2) Comprehensively visualizing and analyzing various attributes of student information would enable an advisor to isolate the points on which to focus for a student in need of support.
3) Associating information such as a photograph of the student's face with a student under an advisor's care would make it easier for the advisor to contact the student.
4) Having a unified view of student information would enable the Office of Student Affairs to encourage departments and advisors to help students in need of support.
5) Constructing the field trial environment in a small-start manner would make it possible to quickly obtain feedback from the university and determine requirements for making improvements.
6) Testing the field trial results across the entire university as well as at other universities in Thailand

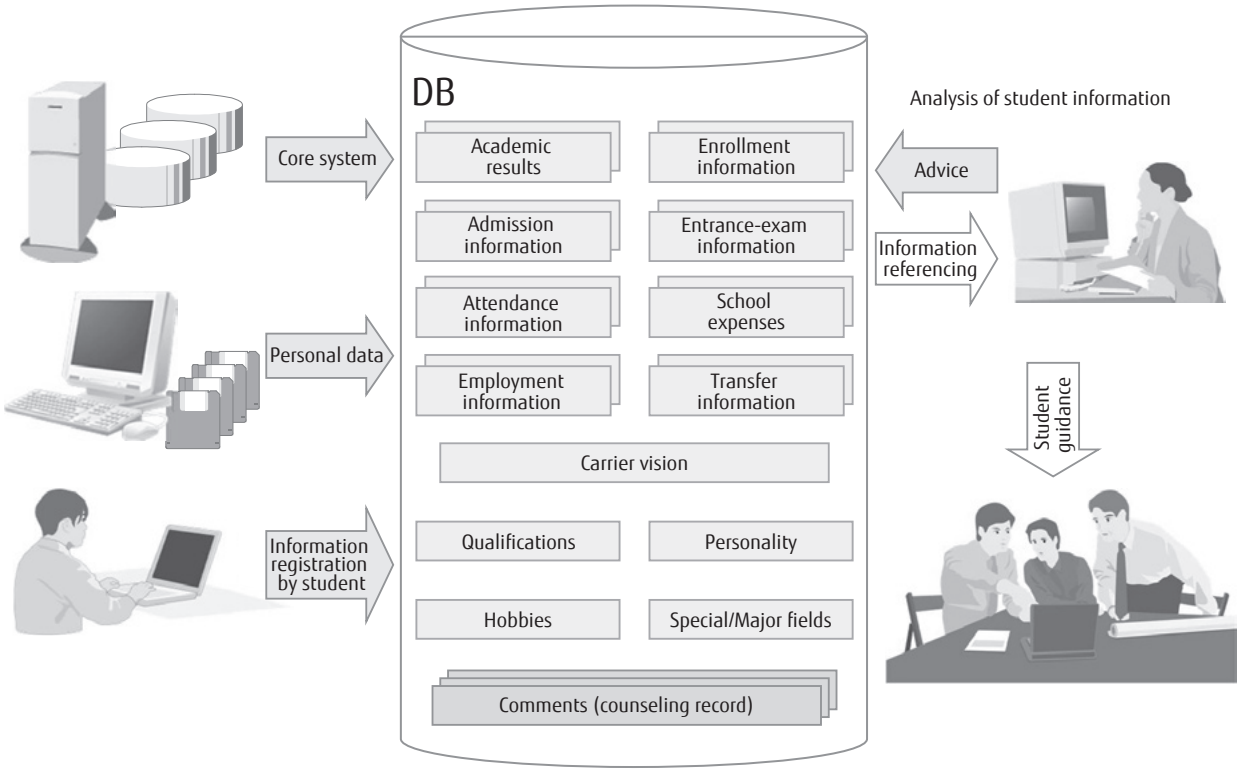


**Figure 1**
**Overview of Campusmate-J/StudentChart system.**

and Japan would make it possible to assess the effectiveness of this solution in universities facing similar problems.

### 3.3 Results of hypothesis testing

Five results in particular were obtained from the field trial, which ended in June 2014.

1) Unifying and visualizing the student information with a focus on academic results, number of earned units, etc. helped to identify students needing counseling in their schoolwork (about 10% of targeted students).
2) Making it possible to reference a comprehensive set of information on individual students that includes, for example, the results of sports matches in addition to schoolwork-related information clarified that students majoring in sports required extra support to prevent their suspension from matches or even withdrawal from school.
3) Enabling sports advisors to access the system enabled them to obtain a good understanding of students under their care. This capability is expected to generate opportunities for face-to-face meetings with those students.
4) The holding of briefings for advisors by the Office of Student Affairs, the further linking of data based on the proven benefits of interlinking department data, and further calls for data collection should help enhance the unified management of data in the future.
5) The prompt gathering of student information and the early launch of hypothesis testing are facilitating the collection of feedback from the university and the determination of requirements for making improvements.

## 4. Knowledge gained from field trial and future directions

### 4.1 Knowledge gained

1) The operations of Chulalongkorn University and the characteristics of its students are quite similar to those of Japanese universities, and there are many problems in common. Consequently, in addition to the possibility that Fujitsu can contribute to solving the problems of Chulalongkorn University through its student support solution, there is also the possibility that ideas and approaches applied can be utilized by Japanese universities.
2) Promoting the independent use of this system by students is difficult, just as it is in Japan. It is therefore desirable, as an initial approach, that advisors who are closely involved with students be encouraged to use the system to stimulate activities that enhance student support.
3) The results of a market survey at Chulalongkorn University and other universities in Thailand show that a number of systems have been separately set up within each school and that those systems are poorly linked, unlike in Japan. Since the exchange of information among those systems has been done in a manual manner, consolidating the information they contain is problematic. Fujitsu's student support solution has contributed greatly to solving this problem.
4) Heightened concerns about security and privacy have hindered the smooth integration of various types of information within a Japanese university. This has lengthened the time it takes to put a system into operation and has complicated the process of making adjustments among the departments holding the information. In contrast, Fujitsu's student support solution made it possible to collect information in a relatively short period of time. One reason for this is that the project did not cover Chulalongkorn University in its entirety but instead targeted a specific number of students and faculty members. However, another reason is that concerns about security and privacy are not as great in Thailand as in Japan. Understanding this characteristic of the Thai market and applying it as know-how enabled us to collect information and analyze/utilize that information at a relatively early stage and to present specific benefits on the university side. Using these results as an example, we plan to convey the need for and advantages of such information integration to universities in Japan.

### 4.2 Future directions

Our activities to date have resulted in the construction of an infrastructure for visualizing and sharing various types of student data including basic information, academic results, and extracurricular activities

and for providing student support through cooperation among faculty members. In addition, the process of consolidating information has deepened our understanding of the educational system in Thailand. Going forward, we aim to enhance our student support solution on the basis of the results obtained in this field trial. This will require providing new functions for analyzing such consolidated information and expanding the range of targeted students to all students in a university.

We plan to study the expansion of this solution to other universities in Thailand on the basis of the results of this field trial. Additionally, we plan to feed back the knowledge we have gained to the Campusmate-J/Student series of systems for enhancement purposes in collaboration with the faculty of Chulalongkorn University.

## 5. Conclusion

The importance of student support in universities is growing every year even in Japan. We aim to apply the knowledge we gained and the new approaches we adopted in this field trial not only in Thailand but also in Japan to help universities better support their students. We view this project as an important first step toward the creation of novel solutions focused on students.

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