Implementing e-Learning at NIDA

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"An investment in knowledge pays the best return."

Ben Franklin (1706–90)

As he knew it would be, the e-Learning Initiative that had been announced toward the end of 2007 was proving to be a challenge for both NIDA (National Institute of Development Administration) and Associate Professor, Dr.Pradit Wanarat, Vice President for Academic Affairs, who had been assigned the responsibility for implementing the Initiative. Envisioned by NIDA's president as a major avenue toward enhancing the quality of teaching and learning, and attracting more students through online courses, and eventually, online degrees, the e-Learning Initiative was one of the most ambitious programs ever undertaken at the nearly forty-five year old institution, which was one of the top universities in Thailand. Now (April 2009), as the Initiative

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approached the one-year anniversary of its announcement and of his appointment as chairperson of the Institute's e-Learning Committee, Dr.Pradit paused to take stock of what had been accomplished to date, what issues remained outstanding, and what actions would be needed to advance the implementation of the e-Learning Initiative.

He could look back with some satisfaction at the progress made to date. However, he was acutely aware that there remained no shortage of complex issues that had yet to be resolved. In some instances, these issues involved the balancing of technological feasibility with budgetary realities. In other instances, the issues entailed a not-always-easy-to-decipher interplay among the "human attributes" that often accompany new strategic thrusts—the realities of skill sets and abilities (and the time demands required to develop new ones), as well as the motivation to try new approaches and the fears that change sometimes engenders. Yet, amidst it all, Dr.Pradit had to determine what steps to take to accelerate faculty and student adoption of e-Learning, and to decide how e-Learning at NIDA could be configured so that it could effectively differentiate NIDA's educational offerings from those of competing institutions. e-Learning was also considered the future of teaching and learning. Facing a great deal of resistance, Dr.Pradit needed to decide what the strategies and measure should be to deal with it.

Background of the National Institute of Development Administration (NIDA)

A government-supported institute with university status, the National Institute of Development Administration (NIDA) focused exclusively on graduate education. Its founding in 1963 had been inspired by His Majesty King Bhumibol Adulyadej's vision of advancing Thailand's development through the establishment of an advanced educational institute that would groom its students to serve as agents of national development change. Additionally, the early thinking was that NIDA would become an educational institute of higher learning that would attract many Thai scholars who might otherwise go abroad to pursue their studies. Over the intervening

45 years, NIDA, through its offering of Master's and Doctoral degrees in 22 fields, became one of the top universities in Asia. NIDA was located in a suburban area of Bangkok and was approximately a 30-miniute drive from downtown.

Vision, Mission, and Objectives

Although NIDA's vision had broadened over the years, it had remained committed to its founding purpose of "being the leading institute in Thailand through study, research and effectively serving the society in the business and administration fields." (www.nida.ac.th.) However, while its initial mission embraced support of national development in Thailand, NIDA's mission had been expanded to encompass regional development in countries outside of Thailand, with the aim of producing advanced-degree graduates that could serve in the public, business, and non-profit sectors. This expanded mission was, in large part, in response to the recognition of the increasing interdependence of nations across the globe, as well as to the priorities enunciated in Thailand's Plan for Higher Education. With new challenges emerging in international cooperation, understanding, and service, NIDA sought—through teaching, research, and consulting—to provide its students with the requisite knowledge, analytical ability, and other skills to address issues and advance objectives at the community, national, and international levels. Thus it was that, over time, NIDA had developed into a dynamic, unique, service-oriented graduate institution that strived to meet many of Thailand's and the region's critical needs in the area of development administration. (See Exhibit 1 for NIDA's organizational structure.)

Current Enrollment and Enrollment Trends

As shown in Exhibit 2, in fiscal year 2005, NIDA had a total enrollment of 9,511 students across eight academic programs—which represented a 29% decline in enrollment, compared to fiscal year 2004 (see Exhibit 3). Indeed, with the exception of the School of Language and Communication, enrollment declines were being

experienced within all NIDA schools (see Exhibit 4). The largest decline had been experienced by the School of Development Economics (51.8%), but declines in enrollment in the School of Public Administration (41.2%) and in the School of Business Administration (31.6%) were also dramatic and of considerable administrative concern.

There was speculation that the reason for these enrollment declines might have been the distance learning programs offered by other universities and graduate schools—programs that effectively widened the options available to students to pursue their educational studies while continuing full-time employment (see Exhibit 2-5). The thinking behind this speculation was that by offering alternatives to classroom instruction (which in some university distance-learning programs included abolition of the requirement to attend any classes at all), competing graduate schools were siphoning off student enrollment that might otherwise accrue to NIDA (see Exhibit 6). However, in the absence of hard data supporting such thinking, it was not universally accepted within NIDA that the distance-learning initiatives of competitor schools were the main cause for NIDA's enrollment declines. In fact, an opposing view was that, more than anything, it was the prosperity of recent years (e.g., 2005 through 2007) that largely accounted for the declines—the reasoning being that robust economic conditions had created greater employment opportunities, which in turn motivated many prospective students to postpone further educational study. The enrollment between 2008 and 2009 had increased due to economic downturn (See Exhibit 5).

Regardless of the reasons for the enrollment declines, NIDA's president, Prof.Dr.Sombat Thamrongthanyawong, who had assumed office in April 2007, believed that the implementation of an e-Learning program at NIDA would enhance the quality of both teaching and learning, benefiting both faculty and students alike. Hence, in his view, NIDA needed to move in this direction, irrespective of the actual or potential effects of other universities' distance-learning programs on NIDA's

enrollment. e-Learning, in his estimation, was a worthy programmatic undertaking in its own right, not necessarily as a defensive measure against the competitive thrusts of other universities, but rather as strategic endeavor to upgrade teaching and learning throughout NIDA's educational programs. As a result, Prof.Dr.Sombat Thamrongthanyawong assigned Dr.Pradit Wanarat, the Vice President for Academic Affairs, to supervise the e-Learning initiatives in December, 2007.

e-Learning: Its Nature, Its Diffusion, and Its Promise

The intensive use of Internet-related technologies since the late-1990s greatly changed the role of computers, with enhanced accessibility of several distributed applications and services being among the major developments. One of the most significant Internet services has been e-Learning, the primary aim of which was to increase the dissemination of knowledge between teachers and learners, as well as to create an effective and efficient learning environment.

The Nature of e-Learning

By definition, electronic learning (e-Learning) was simply any learning facilitated by electronic means. Its modalities included computer-based training (CBT) with modules, CD-ROM training, and web-enabled and Internet learning (Thomas & Cunningham, 2003). e-Learning courses provided students with an opportunity to continue their education while simultaneously continuing to pursue personal and career development. In other words, it created a more flexible way of learning. The online format offered students a great deal of flexibility in terms of when they studied, how they studied, and how quickly they could cover and master the material.

Three of the most important e-Learning types (DeSanctis, 2003) are presented below.

- The Video-Conference Classroom: it eliminates the boundaries of place-dependent, face-to-face groups, with the idea of disparate locales.
- Group Discussion Spaces: they provide a site for a working group, such as a project team, consulting team, or student learning team. The discussion space may involve places to store group documents and track team progress; often the group can modify the design of the space to meet its special needs or requirements.
- Online Communities: these are open, Internet-based forums that anybody can join to argue themes of common interest. These online societies are not necessarily dedicated to learning; for instance, some are just for entertainment and others are to produce software products (e.g., Linux).

The Dramatic Spread of e-Learning

For a number of reasons, e-Learning was becoming increasingly popular in universities and in other learning environments in a number of national settings. It was part and parcel of the educational revolution that was taking societies from a print to a digitized culture, with the corresponding demand to deliver knowledge to educate large numbers of people over vast areas without the boundaries of time or place. Various e-Learning technologies were being utilized to deliver courses and sometimes entire degree programs. For example, Indiana University offered an MBA degree program in which students took courses entirely online without ever having to go to the campus.

Although e-Learning made up a very small percentage of instructional expenditures in the education industry in 2000 (accounting for only 7 billion dollars, or less than 1 percent of the total), it grew at a rate of approximately 50% per annum between 2000 and 2005, rising to 40 billion dollars of instructional expenditures in 2005 (Rukstad & Collis, 2001). The increasingly competitive environment confronted by universities, tightened budgets, lower enrollments, and “time and place” flexibility increasingly demanded by adult learners—all of these were major driving forces behind the explosive rates of growth. In response, universities, including graduate schools, were being forced continually to review their curricula and the methods by which instruction was delivered to students. As part of their long-term strategy, many schools had aimed to increase enrollment numbers, decrease the number of extra-hired teachers, and offer more flexible schedules to target populations seeking education and training. With success in reaching new part-time, non-residential, and non-traditional students had come a dramatic surge in demand for distance learning options.

The degree to which institutions of higher education embraced online education as part of their instructional strategy could be gleaned from both student enrollment in such courses and institutional participation in making these courses available. For example, a 2005 study of U.S. schools revealed that nearly two-thirds of those that offered graduate “face-to-face” courses also offered graduate courses online, and that enrollment in online courses grew at an annual rate of approximately 18% (from 1.98 million in 2003 to 2.35 million in 2004) (Rukstad & Collis, 2001). (See Exhibit 7 for student enrollment in the top 20 largest degree-granting online programs during the 2004-2005 academic year.) This same study reached a number of additional important conclusions concerning the e-Learning modalities in evidence in American institutions of higher education (see Exhibit 8).

Further, e-Learning had been adopted by educational institutions outside those in the United States. In Israel, for example, the Virtual Tel-Aviv University was launched in the 2000-2001 academic year in response to the government's initiative to advance the implementation of learning technologies in Israeli higher education (Shemla & Nachmias, 2007). Additionally, universities and specialized training institutions in various Southeast Asian nations -- e.g., Thailand, Malaysia, and The Philippines, among others -- had also moved in the direction of incorporating online courses into their curricula.

The Promise of e-Learning

First and foremost, with the flexibility inherent in online course instruction, students and trainees—particularly adult ones—were afforded the ability to tailor their learning experiences at times and in settings that were most convenient to them on a largely individual basis. As earlier stated, for educational and training institutions, this reality opened a potentially vast, and hitherto only partially tapped, reservoir of students that might not otherwise be able or willing to alter their career or family endeavors sufficiently to enable them to attend face-to-face classes in traditional settings.

However, as suggested by research conducted on the link between technology and learning (see Exhibit 6), not all e-Learning courses had been an overwhelming success. Poorly-designed online experiences that de-motivated learners with repetitive, boring functionality, and other frustrations, served as a continuous caution to institutions desiring to utilize e-Learning instructional modalities.

In addition, the development costs for online courses were generally considerably higher than those for the traditional face-to-face classroom setting. For example, IBM Corporation indicated that the cost for developing online training was five times higher than for classroom courses. Offsetting this, however, was the fact

that, in IBM's experience, the delivery costs for online courses were much lower than for classroom courses once the basic infrastructures (e.g., computers, applications, networks, etc.) were in place.

Hence, the potential benefits that would accrue to institutions from a well-designed and well-received online program were non-trivial. For example, at IBM Corporation—with its hundreds of course offerings on different subject matter, in different parts of the globe, and throughout the year—managers averred that the savings in travel costs alone validated the move toward increased usage of online course technology (Rukstad & Collis, 2001). Similarly, Cisco Systems reported savings of $50 million in travel expenses associated with bringing staff to headquarters or other training sites. Several consulting firms indicated savings of 50% in time and 40% – 60% in costs upon replacing traditional classroom training settings with online courses (Rukstad & Collis, 2001).

Although traditional educational institutions with course offerings in just one locale would not realize a substantial savings in instruction-related travel costs, those with multiple campuses stood to gain substantially from the reduction in faculty travel costs by making greater use of online course instruction. For example, rather than offering the same course by a coterie of different professors traveling to distant course locations, it was feasible—at least from a technological perspective—to have the same or even a smaller group of faculty offer the course via online instruction.

From the point of view of NIDA, e-Learning introduced not only better quality teaching and learning, but also a new paradigm of education since it enabled the educational process to go beyond the physical classroom. Education could be delivered anywhere and at any time. e-Learning also provided a better way to deliver education since multimedia materials such as video, audio, and animation could be combined.

The e-Learning Initiative at NIDA

While not unaware of the potential cost savings of offering NIDA courses online, President Sombat's decision to transform NIDA into an "e-University"—with "e-Learning," "e-Testing," and an "E-Office"—had been guided by his conviction that NIDA should begin aggressively utilizing information technology to supplement the efficiency of learning and teaching (see Exhibit 9). As pointed out by Dr. Pradit, the assigned chairman of the new e-Learning Committee since November 2007, e-Learning at NIDA was envisioned as a supplement to, not a replacement for, classroom teaching (see Exhibit 10 for the implementation of e-Learning at NIDA). Dr. Pradit stated:

> *The objective of this project is to use e-Learning as complementary and supplementary in class. e-Learning would help enhance the efficiency of teaching and learning. e-Learning will be applied to provide a summary of lessons taught in traditional classes for student to review before examination. That also benefits students who skip that class. The summaries will be provided in the form of flash files that combine teaching slides and the voice of the professor. Moreover, professors can use e-Learning to communicate with students more easily. Professors can use e-Learning to assign homework to students, including providing extra knowledge to students outside the class period.*

With reference to the growing trend among many universities, both domestically and abroad, to offer online degrees that enabled students to "attend" classes from any setting and at any time, Dr.Pradit further pointed out that NIDA had no immediate plans to follow suit. He emphasized that *"NIDA does not [now] aim to develop and use e-Learning to provide full courses for online degree[s], but NIDA is*

attempting to implement e-Learning as a class complement and supplement. Online degrees may be established at NIDA, but this will happen in the distant future."

Implementation of the e-Learning program was expected to yield benefits to students and faculty alike, and in several ways. Apart from enabling those students who miss a class to access websites and review class summaries, the program was designed to facilitate learning-related communication. Assistant Professor Suttichai Suthithosadham, director of the Information Systems Education Center (ISEC) – who, along with Dr.Pramote Luenam, shared joint responsibility for the technical aspects of the implementation of the e-Learning system -- elaborated:

> *With such supplementary e-Learning that would be implemented at NIDA, the lecture-based contents posted online will enable students review class materials in preparation for their examination. Moreover, the LMS or Learning Management System will enable students to communicate with professors and peers.*

Mr.Sutthichai asserted further that e-Learning would enhance the communication between students and their professors, at least in part by creating a more efficient and effective mode of communication. Pointing to the increased ease of communication that e-Learning would bring, he allowed that *"[It] will help to enhance the relationship between students and professors since they can contact each other more easily at any time and anywhere."*

Faculty members would also find the system a valuable aid in the performance of some of their instructional duties, continued Dr.Pradit:

> *Professors can use e-Learning to assign homework to students, including provid[ing] extra knowledge to students aside from the class period. If professors want to assign any work to students, there is no need to set the time for an appointment as it is so difficult to get all people in the same place and at the same time.*

Professors can leave a message to inform students about work [on] the subject's web board.

These were the anticipated benefits of the new e-Learning system. However, realizing these benefits entailed a series of steps on the part of both Mr.Suttichai's Information Systems Education Center and the faculty itself.

Even though there were several benefits of e-Learning, they had yet to be fully perceived and appreciated by NIDA faculty. Indeed, continuing resistance had led to overall low participation in the project. Some faculty members were of the view that e-Learning required of them "extra" work, above and beyond that that they had heretofore been expected to do. Others were worried that someone might steal their intellectual property once it was put online. Still others were afraid that if they put all of their materials online, they as instructors would no longer be of use to the school. A lot of professors were not sure about the ownership of e-Learning materials, whether they belonged to them or to the university. A few were also worried that e-Learning would give students an incentive to miss class since they could access the same materials as the students who were in attendance. In addition, some professors did not want to participate in e-Learning because they did not want their lectures recorded, out of a concern that they might say something impolitic or sensitive, and thus be held liable in some way because of the recorded materials.

Another obstacle was that of the budget for the project. The cost of developing e-Learning for one class was ThB 300,000 (approximately US$ 9,000). With 30 classes slated for inclusion in the effort, the total project cost approached ThB 10,000,000 (approximately US$ 300,000), while committed funding for the project reached only 2,000,000 baht (about US$ 60,000).

Implementation Steps Taken to Date

Dr.Pramote, co-leader with Mr.Suttichai of the project, explained that NIDA's e-Learning system under development consisted of two main parts: the *content* side and the system operations side, which was called the Learning Management System (LMS). In order for e-Learning to occur, both parts had to be put in place. He continued:

> *. . . The appropriate format of learning content is in electronic format, such as PowerPoint, and file video that can be online or be played on the computer. In terms of content development, there are many people involved: a camera man and staff for production, a VDO auditor to edit the video that has been shot to match with the teaching slide (the teaching slide must be shown at the same time with the lecturer who gives lecture). This process takes time, about 70-80% of the entire process. Later, we get the content, and combine it with the LMS part. When you go into the NIDA e-Learning webpage, you choose the subject that you want to learn. You may need to register. There must be a screening system to screen the student who comes to this website. The LMS also includes a channel for students and professors to communicate at the website, a channel for sending homework, and channel for students to communicate with their groups.*

Some Considerations as Implementation Proceeded

As NIDA embarked on its quest to become an institution in which e-Learning would be a central feature of its delivery of educational services to its students, there was no *institutional* experience within the organization upon which NIDA could draw as a guideline for the new venture. However, over the years, a number of research articles had been published concerning issues of relevance to the

implementation of NIDA's approach to e-Learning. Early in the implementation process, these articles were shared and discussed within Dr.Pradit's e-Learning Committee, as well as among the staff in the Information Systems Education Center (ISEC), who were assigned primary responsibility for designing and overseeing the technical aspects of the e-Learning system.

A review of studies examining e-Learning programs in a several non-Thai institutions revealed a wide range of findings, with varying degrees of potential applicability to NIDA's efforts. Among these were the following:

- ***Factors Predictive of e-Learning Acceptance by Faculty Personnel**:* e-Learning adoption and e-Learning readiness were highly correlated with the training provided to targeted users, as well as to the degree of confidence (Agboola, 2006). From this, Dr.Pradit's e-Learning Committee concluded that the provision of adequate training in the use of NIDA's e-Learning system would be of cardinal importance. The Committee further speculated that faculty *confidence* in using the new system might well be a byproduct of the adequacy of the training received.

- ***Critical Success Factors Pertaining to Commonly Used Web-Based Technologies:*** Potential barriers to faculty use of Web-based learning approaches included: insufficient time to learn how to use such technology and then develop appropriate courses; lack of adequate training; lack of adequate technical support; insufficient resources; lack of teaching support; and perceived lack of institutional recognition of and rewards for efforts to integrate Web-based technologies into teaching (Pajo & Wallace, 2001). From this, the e-Learning Committee took under advisement the need, according to this particular research, to "implement a flexible and dynamic strategy in order to lessen these barriers."

- ***Age-Related Determinants of Usage of Computers in Teaching:*** Confidence in using computers in teaching was correlated with the age of faculty members, with younger lecturers displaying higher levels of confidence than older ones. Older faculty members were more likely to feel that their exposure to, and skills in the usage of, ICT tools compared unfavorably to those of their own students, thus dampening their enthusiasm for adopting e-Learning technologies in teaching (Murphy & Greenwood, 1998). Here again, the Committee concluded, training and confidence building would be critical to the realization of the objective of gaining faculty willingness to teach with e-Learning tools.

- ***Rules of Effective e-Learning:*** From a study of both faculty and students at a U. S.-based university, a researcher set forth what he considered to be ten essential rules for effective e-Learning: (i) a shared learning-centered vision; (ii) a comprehensive course design process; (iii) customized scoring guides to suit e-Learning (e.g., clearly detailed); (iv) group work strategies; (v) effective facilitators (i.e., online facilitators to provide suggestions); (vi) faculty training and support; (vii) expectation framing (e.g., a document outlining expectations at the outset of a course); (viii) meaningful faculty feedback for students; (ix) a commitment to continuous improvement of the system; and (x) the monitoring and evaluation of continuous improvement endeavors, with coordinated input from all stakeholders (including faculty and learners)(Barron, 2006). Most of these “rules” were taken under consideration, in different ways and at different points in time, as the Committee deliberated on the multiple issues requiring decision-taking on their part.

In addition to these somewhat global examinations of e-Learning experiences at institutions outside of Thailand, a couple of recent research studies into e-Learning programs at Thai universities were available to, and pondered by, Dr.Pradit's Committee. Among the salient findings gleaned from these reports were the following:

- ***Experienced Strengths and Weaknesses of e-Learning:*** The primary strengths of e-Learning programs for Thai post-graduate studies were reported as follows: (a) savings in time and transformational costs, (b) student perceptions of greater freedom to discuss their thoughts openly, (c) reduced teaching and learning costs over the long run, and (d) more time for lecturers to do research and attend to non-instructional professorial duties. Juxtaposed against these strengths were several reported weaknesses, i.e., students' lack of time management skills and self-discipline, information-searching skills, and language skills. The research found, also, that students' preferred mode of e-Learning was that in which study with lecturers constituted about 80% of their time, while self-controlled study via e-Learning technologies comprised just 20% of their time (Chockreansukjai, 2007).

- ***Primary Modality of e-Learning Programs in Thailand and the Most Critical Elements:*** Among institutions of higher education in Thailand that employed e-Learning systems, the predominant mode of usage was a supplementary one—one in which e-Learning supplemented, rather than supplanted, other modalities of instruction (e.g., classroom instruction). Infrastructure, utilization of programmed computers, and the learning environment of the institution—these were the elements deemed most critical to the success of e-Learning (Chockreansukjai, 2007).

Implementing e-Learning: Issues, Challenges, and Obstacles

Realization of the vision of incorporating e-Learning into NIDA's mode of operations was very much contingent on the e-Learning Committee's ability to address several impediments that surfaced almost simultaneously with the announcement of the new initiative and the formation of the Committee. One particular obstacle, the paucity of broadband connections to enable students to access multimedia files over the Internet, would likely remain a drawback until such time as emerging broadband technologies (e.g., fiber optics, 3G, and Wimax) became widely available in Thailand. Of this, the Committee had taken notice, even as it pushed on with the implementation of the new system.

However, apart from current broadband limitations, which were largely beyond the Committee's ability to impact, there were several additional challenges that had proven difficult to resolve. These involved cost considerations, insufficiency of critical support staff, and stakeholder resistance (including the potentially contentious issue of sorting out the ownership of e-Learning content). To be sure, planning and system design tasks could proceed while resolution of these issues was being discussed. However, Dr.Pradit and his fellow Committee members knew well that a fully functional e-Learning system could not be completed and rolled out until at least some of these challenges had been addressed.

The Challenge of High Cost

In general, one of the biggest constraints confronting IT projects in general is that cost—or perhaps more accurately, *high cost relative to budgetary resources available* to the project. In this regard, NIDA's experiences were proving to be no different than those of other institutions that had pursued a similar vision. Pointing out that e-Learning programs held the promise of yielding many benefits to the Institute, Dr.Pradit also noted that NIDA's budget contained limited allocation for the project.

He stated: *"Even [though] e-Learning will be used as a class complement and supplement only, the expenditure [required] for [the development of] e-Learning lessons is quite high – about ThB 300,000 per [course]."*

While admitting that this sum (ThB 300,000 or approximately $US 9,000) was miniscule in comparison to other types of e-Learning projects, whose costs could easily amount to millions of dollars, Dr.Pradit hastened to add that the cost for e-Learning included not just the hardware, software, and the network, but also the ongoing costs of maintenance, upgrades, and personnel. Viewed from a total cost perspective, the current budgetary allocation for implementation of the project was a serious impediment. He elaborated: *"Personnel, including human resources for supporting e-Learning classes, are now scarce [in NIDA]. For only 1 or 2 subjects, we can do it ourselves; but, when all 27 subjects are ready to record, we need to outsource all through the process."*

In this assessment, Mr.Sutthichai and Pramote of the ISEC, who bore the primary responsibility for developing the new system and making it operational, were in complete agreement— i.e., that budget constraints were proving to be one of the main obstacles to the Project. *"ISEC still lacks the necessary equipment in content set up, such as the equipment for videotaping the lectures*," explained Mr.Sutthichai. *"The budget constraints include insufficient competent personnel to clip the lecture-based content."* As project leader, many of the frustrations caused by the limited budgetary resources continuously impacted Dr.Pramote, who was even more emphatic in his assessment. *"We do not have an adequate budget to complete [the e-Learning Program],"* he stated.

The Challenge of User Resistance

One of Dr.Pradit's and the e-Learning Committee's biggest concerns was that of user resistance. Given that e-Learning would inevitably change both the way in

which lecturers taught and the way in which students learned, the developers were very much aware that they had to take the prospect of continued, even heightened, resistance into account. They were mindful of the fact that a major cause of failure of IT projects is user *rejection* of the new technology. Of concern to Dr.Pradit and other senior administrators was that e-Learning would be useless if it were to come to pass that the faculty and/or students refused to use it after its implementation.

In order to minimize the prospect that the new system would be resisted by faculty and student stakeholders, the Committee planned to introduce the changes gradually. This approach, it was thought, would enable the targeted users—faculty and students—to acclimate themselves to the workings of the system and to begin to see the benefits without being deluged by the otherwise enormity of a new way of doing things. Explained Mr.Sutthichai:

> *There are problems and obstacles challenging the achievement of e-Learning implementation at NIDA, but the gradual adoption -- step by step from the current content base (or supplementary E-learning) to the higher level of online degree -- will make the e-Learning project at NIDA achievable*. . . . *The stakeholders would gain benefit from e-Learning implementation—students could have a class review online that would benefit them for examination preparation, while professors would gain from the tools facilitating their courses, such as the LMS. Moreover, both of them would benefit from the virtual communication with online communication tools such as webboards*.

To overcome resistance within the faculty, the Committee decided to proceed on a segment-by-segment basis, particularly with respect to resisters within the faculty. Dr.Pramote elaborated:

> *Professors can be divided into 3 groups. First are the "refusers" – [those] who refuse to join this project. Second are the professors who are interested, but [who] are too busy to join. Third are the supporters. The first two groups are about 70-80% of professors. We plan to start [with] the last group. The problem is how to make the first two groups accept this project.*

One important aspect of faculty resistance that remained to be sorted out was that of ownership of faculty lectures and research -- that is, the question of who would own the copyright to the intellectual property produced by the faculty and made available electronically via the e-Learning system. Dr.Pradit and the Committee were aware that this was an area in which precedent and law were still unfolding. In some settings, professors had argued that because they were the content providers, they should also own the right to any books that they published. Further, they argued, they should own the rights to the intellectual property that was "packaged" and sold online.

Two related concerns also played a role in the faculty's resistance to e-Learning and the requirement that pertinent components of their course items be placed online for use by their students. First, there was the fear of loss of control over their intellectual property, thereby depriving them of some of the benefits of their labors. *"If anyone can access my material over the e-Learning web site, someone might steal my intellectual property, such as teaching notes and slides, and take them as their own,"* pointed out one NIDA faculty member. Second, there was the fear that if faculty teaching materials were deemed to be the property of the school, then in the aftermath of creation of the e-Learning system the faculty might be declared redundant. As one NIDA professor expressed it, *"If all of my lectures are recorded and belong to the school, the school does not need me anymore. What good am I? Why would I want to collaborate with the project that might devalue me?"*

Furthermore, the benefit of e-Learning was poorly perceived. Several professors did not see any tangible benefits from e-Learning. One faculty mentioned: "*Why do I need e-Learning? I already got good feedback from students using my current teaching method."* Another professor mentioned: *"e-Learning would complicate my teaching. I want to keep my teaching simple."* As for the perceived ease of use, a lot of professors felt that they needed to do extra work to use e-Learning. Even though the process of developing e-Learning materials was technically simple, most professors did not want to develop e-Learning materials themselves. They wanted to have a support team to develop the material for them. This was especially true for older faculty members, who were not technologically oriented.

As for the student stakeholder group, the Committee had discussed potential problems concerning resistance, but in the absence of much concrete information concerning their likely reactions, found itself dealing almost totally in the realm of speculation. Thus, the Committee's discussions to date had surfaced more issues than definitive approaches to overcoming potential resistance to use of the new e-Learning system. In this connection, Dr.Pramote's musings concerning student reactions reflected those of the Committee as a whole: *"The problem is if the e-learning is not compulsory, will they attend? For example, if we provide a forum for them, will they use it to communicate with other students, or [will] they prefer to meet each other face to face? Or [will] they just want to contact each other via telephone?"*

Insights Gleaned from the Pre-Implementation Pilot

In order to gain specific insight into faculty reactions once the new system was fully developed and rolled out to the entire Institute, and to spot and fix technical problems before full implementation, Dr.Pradit and the e-Learning Committee launched a small pilot project in June 2008 and invited 22 faculty members to participate**.** e-Learning components such as contents for each course and multimedia tools were included in the pilot.

Typical of participant views based on the pilot were those of two professors from the School of Applied Statistics -- Dr.Raweewan Auepanwiriyakul, professor of computer science and statistics, and Dr.Surapong Auwatanamongkol, professor of computer science. Below are captured some of their observations, based on their hands-on experience in utilizing the new tools that were part of the e-Learning pilot project.

Insights into Faculty Perceptions of the Benefits of e-Learning

Indicating both her reason for having agreed to participate in the pilot project and her view of one of the principal benefits of e-Learning, Dr.Raweewan stated:

> *The reason for [my] participation in this project is that e-Learning enables students to review the session that they missed. e-Learningis [of] the most benefit for students because it enables [them] to communicate with professors and peers. e-Learning should be integrated with other projects, e.g., the tutorial content for mandatory computer competency test or new staff orientation.*

Additionally, Dr.Raweewan noted, the e-Learning pilot demonstrated that it also held certain potential benefits for faculty members. She explained, *"e-Learningenables professors to post introductions [to] each chapter, which the students can learn by themselves outside the classroom. And it enables professor to manage their schedule on time.*

Dr.Surapong's views largely echoed those of Dr.Raweewan. Pointing out that e-Learning had proved of great value in helping him to communicate effectively with his students, he added:

Nowadays, I communicate with students via e-mail, and most professors post course material on the web. The professors do not communicate with students by webboard or chatroom. However, the implementation of e-Learning is beneficial in communication with students -- for example, with post-reading assignments, post-course syllabuses, etc.

Insights into Faculty Perceptions of the Obstacles to e-Learning

One of the main obstacles to the success of e-Learning at NIDA, in the view of Dr.Raweewan, was that of faculty time limitations, not necessarily outright opposition to adoption of the new instructional technologies. She averred that *"I and most professors agree with the e-Learningproject. The process in making E-content is not an obstacle; however, the main obstacle is time constraints due to having many tasks [to perform], such as research, teaching, etc."*

In order to overcome this impediment, Dr.Raweewan continued, NIDA would need to develop support teams to assist the faculty in preparing course content for placement on the e-Learning website and other such time-consuming tasks. More specifically, she stated:

NIDA should assign a specific department with Audio-Visual expertise that handles the content production and edits video-slide in order to support the professor [in fulfilling his or her] responsibility. The specific department [could] also create consistency in the e-Learning pattern. The other professors who are uneducated in the field of Computer Science [would be] are enable[ed] in making E-content due to its ease of use. The other easy alternative in making E-content is PowerPoint because it enables the insertion of sound.

Dr.Surapong pointed to the same two issues—limited faculty time and the limited availability of computer training—as being the main obstacles to e-Learning success at NIDA. *"The main obstacle,"* he asserted, *"is time constraints in making E-content and other obstacles for the other professors who are uneducated in the field of technology."* His suggested remedy was the same as that of Dr.Raweewan; i.e., the creation of a special department with audiovisual expertise to relieve faculty members of the time-consuming burden of content production and video-slide editing. In addition, Dr.Surapong ventured to point out that, ―hardware support might prove an even more critical issue than software support. He continued, *"The software in making E-content is not an obstacle because of the availability of free downloads; the obstacle is hardware, such as microphones, camera, etc. Therefore, NIDA should provide support material, especially hardware."*

Insights into Faculty Perceptions of the Copyright Issue

Both Dr.Surapong and Dr.Raweewan disavowed concern about the issue of whether the faculty members or the institution would own the copyright to course materials placed on the e-Learning web. Both stated that the content should be available for public exposure, and both had been publishing content online—one in the Adobe Acrobat format, and the other in the PowerPoint format—even prior to the e-Learning pilot project in which they participated. Dr.Surapong added the suggestion that *"the initial period copyright of e-content should be protected by Intranet in order to limit the access to only NIDA student."*

While Dr.Pradit was extremely gratified to know of these reactions, which typified the views of the small group of faculty members that had participated in the pilot project, he could not be entirely certain that the positive experiences would predominate across the faculty when the e-Learning system was fully implemented. Nevertheless, the fact that this group had emerged from their experiences in the pilot project with positive views of the potential of e-Learning for enhancing both teaching

and learning was very welcome indeed. Among other things, it indicated that the Committee would now have a few potential champions of the system among the faculty as a whole. This could help, Dr.Pradit felt, in making full implementation a success.

Seriousness of the Problems

Despite these encouraging reactions from participants in the pilot program, Dr.Pradit knew very well that his reputation was on the line. The investment in e-Learning would not be successful without the participation of faculty and students. A failure to gain such support and participation could cause considerable embarrassment. With e-Learning having been successfully implemented in several competing universities (some of which already had full e-Learning degrees that allowed students to be in class anywhere and at any time), an unsuccessful implementation at NIDA might well tarnish the university's reputation, as well its perceived preeminence among Thai institutions of higher education. Moreover, some students had been demanding an education in technology. If e-Learning could not be successfully implemented, NIDA's might sustain a further decline of enrollment as these students migrated to competitor institutions.

With respect to conversion issues, Dr.Pradit realized that the implementation of e-Learning would have a major structural impact on NIDA and that he would face some resistance from faculty, staff, and students since the introduction of e-Learning would fundamentally change the process of teaching and learning there. As a result, Dr.Pradit decided to implement the e-Learning project using a phased approach. Initially, the pilot project was introduced. The participants in this project consisted of four young and technologically-oriented faculty members. If the pilot project turned out to be successful, the phase strategy would be continued, with the gradual introduction of e-Learning on a course by course basis until such time as every course at NIDA incorporated e-Learning materials.

Where To From Here?

From all that he and the e-Learning Committee had heard, seen, and discussed to this point, Dr.Pradit was clear that three factors were absolutely critical to the success of NIDA's e-Learning project: professors, students, and resources. As he mentally summarized the insights gained from all that had been accomplished, Dr.Pradit knew that certain issues and challenges remained concerning all three factors:

The Three Critical Factors: Current Status

Dr.Pradit continued to be concerned that some faculty members—especially some of the older professors—might not be interested in e-Learning, and hence might become a core of resistance. Against this worry, however, he nonetheless held out the hope that once the "Old Guard" actually experienced the real benefits of e-Learning in their own classrooms and in their own work, some of them would eventually want to "get on board." He stated:

> *It is similar to the time when the digital visualizer was first introduced in Thailand. The professors who regularly used the original visualizer refused to use the new product, even if it helped them in teaching. Then, the digital visualizer became more popular among professors when they [learned] how to use that equipment and realized its [ease of use]. Also, when PowerPoint presentations (PPT) were [first] conducted in Thailand, professors did not use it since it was so advanced. And professors did not want to study how to use that new technology . . . . Then, [in time] PPT became popular, and almost every professor uses PPT in classes [today].*

Concluding the thought, Dr.Pradit said simply, *"Professors need to devote time, aside from the time spent on the traditional class, to prepare class material in the form of slide presentations and . . . video for e-Learning class*."

Of the three critical factors for the success of the program, Dr.Pradit was perhaps least worried about student acceptance. He explained: *"The readiness of students is not a problem in [our] implementing e-Learning because students are learning-oriented and [are] always seeking knowledge. e-Learning will be [another] . . . way for them to reach knowledge."*

In Dr.Pradit's view, the most confining factor was that of resource availability. Acknowledging that resources, both financial and non-financial (e.g., HR technical support), were scarce and would quite likely remain relatively scarce, he ventured no prediction as to whether or when NIDA might be successful in tapping a more adequate budgetary allocation with which to enable full-scale implementation of its e-Learning plans.

Looking toward the Future: Life after e-Learning

Notwithstanding the array of current challenges to the full implementation of e-Learning, seniors administrators had already begun looking to the future—to the point in time when additional projects related to e-Learning (e.g., computer-based training and online testing) could be designed and implemented. Mr.Sutthichai shared some of the thinking behind these tentative plans for future extensions of the system:

> *e-Learning projects that call for substantial investments should be applied in other projects. For instance, ISEC has interest in using e-Learning to set up content for basic computer tutorial courses for the new students [who] will have mandatory computer competency tests. However, this e-Learning doesn't cover online testing because E-testing still requires the large storage of examinations.*

> *Moreover, the limited number of computers in the computer laboratory is another constraint for such E-testing. As a result of those unfulfilled requirements, ISEC then will postpone this E-testing for several semesters.*

Mr.Sutthichai foresaw other possibilities once NIDA had cleared the current hurdles in establishing the system. In addition to the possibility of adapting e-Learning for use as tutorial software for new-student orientation (whereby students could learn about NIDA's policies, rules, and regulations online), he suggested:

> *Another possible project that employs the same software and infrastructure of e-Learning is the use of e-Learning for the purpose of new personnel orientation -- to educate them about the Institute's rules and regulations, including their fringe benefits and job description -- in order to reduce the time consumed for new officer orientation.*

Getting **to the Future: "Can We Get There from Here?"**

As exciting as these and other prospects for the future enhancements and extensions of the e-Learning system were, Dr.Pradit knew too well that, first, NIDA would have to find ways to surmount its *immediate* challenges. In this connection, he wondered what his e-Learning Committee and its ISEC technical developers group could do to accelerate adoption of e-Learning among both faculty and students—particularly faculty. Was training the most appropriate—or, perhaps the only—possibility? What should its content be, and how would it be structured and facilitated to encourage its actual *usage* upon completion? Finally, he also mused about whether some kind of change management plan might be indicated and, if so, of what it might consist. Finally, an overarching consideration was how NIDA's e-Learning system could be differentiated from programs offered at competing institutions.

Exhibit 1: NIDA Organization Structure

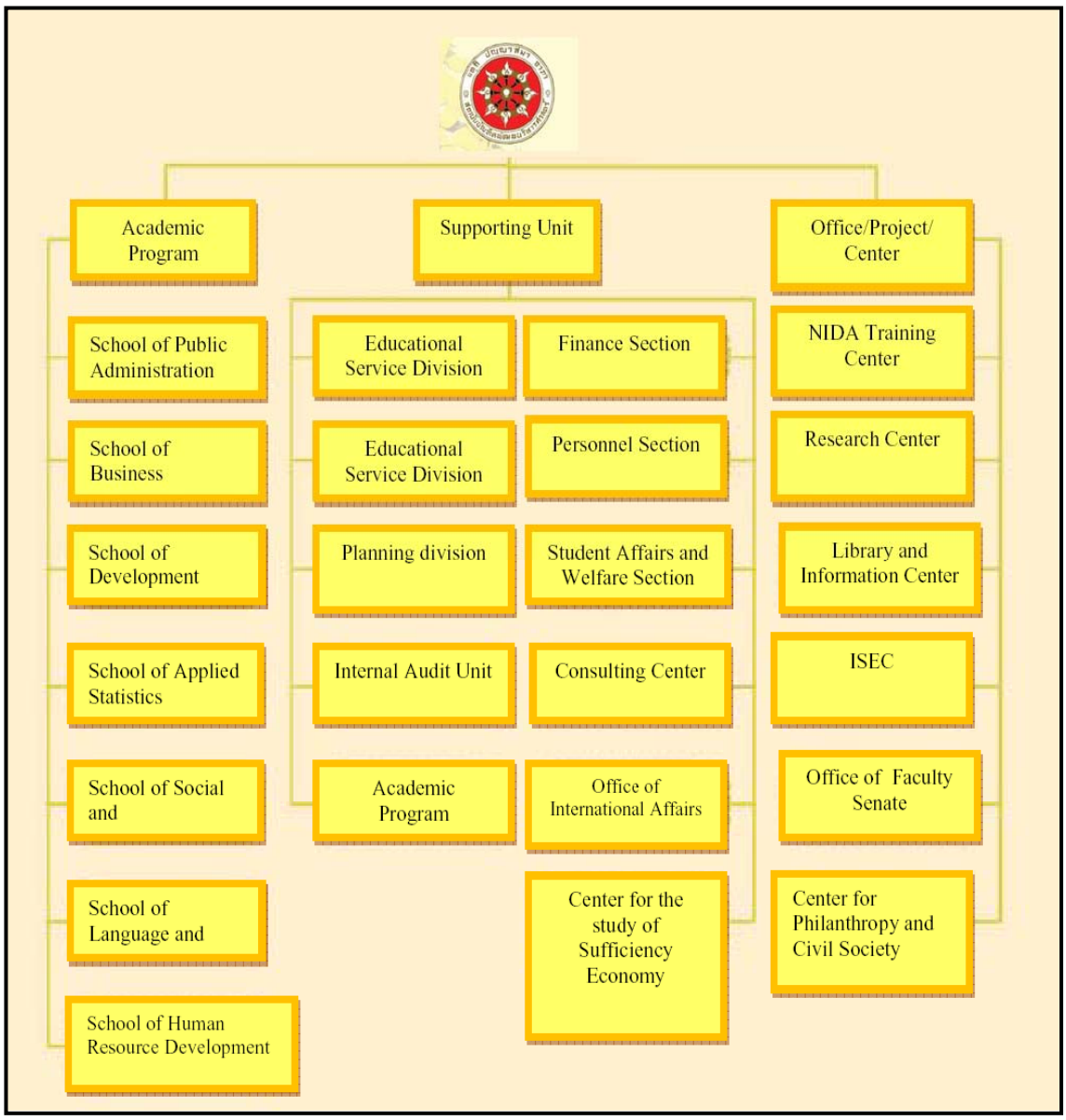


Exhibit 2: Number of NIDA Students in 2005

Academic Program	Number of Students in fiscal year of 2005				
	Doctoral program	Master Program			Total
		Regular program	Flexible Program (Bangkok)	Flexible Program (Region)	
School of Business Administration	9	575	1,171		1,755
School of Development Economics	50	181	394		625
School of Social and Environmental Development		135	576	426	1,137
School of Public Administration	146	368	1,318	1,586	3,418
School of Applied Statistics	82	351	696		1,129
School of Language and Communication		32	283		315
School of Human Resource Development	135	431		566	1,132
Total	422	2,073	4,438	2,578	9,511

Exhibit 3: Number of enrolled students between 2004 and 2005

Academic Program	Number of new enrolled students in fiscal year of 2004					Number of enrolled students in fiscal year of 2005				
	Doctoral program	Master Program			Total	Doctoral program	Master Program			Total
		Regular program	Flexible Program (Bangkok)	Flexible Program (Region)			Regular program	Flexible Program (Bangkok)	Flexible Program (Region)	
School of Business Administration	2	320	683		1,005		212	475		687
School of Development Economics	27	97	202		326	25	62	70		157
School of Social and Environmental Development		57	147	111	315		30	128	100	258
School of Public Administration	101	217	803	817	1,938	35	118	463	524	1,140
School of Applied Statistics	15	126	197		338	7	90	334		431
School of Language and Communication		16	91		107		11	114		125
School of Human Resource Development	56	186		242	484	41	145		196	382
Total	201	1,019	2,123	1,170	4,513	108	668	1,584	820	3,180

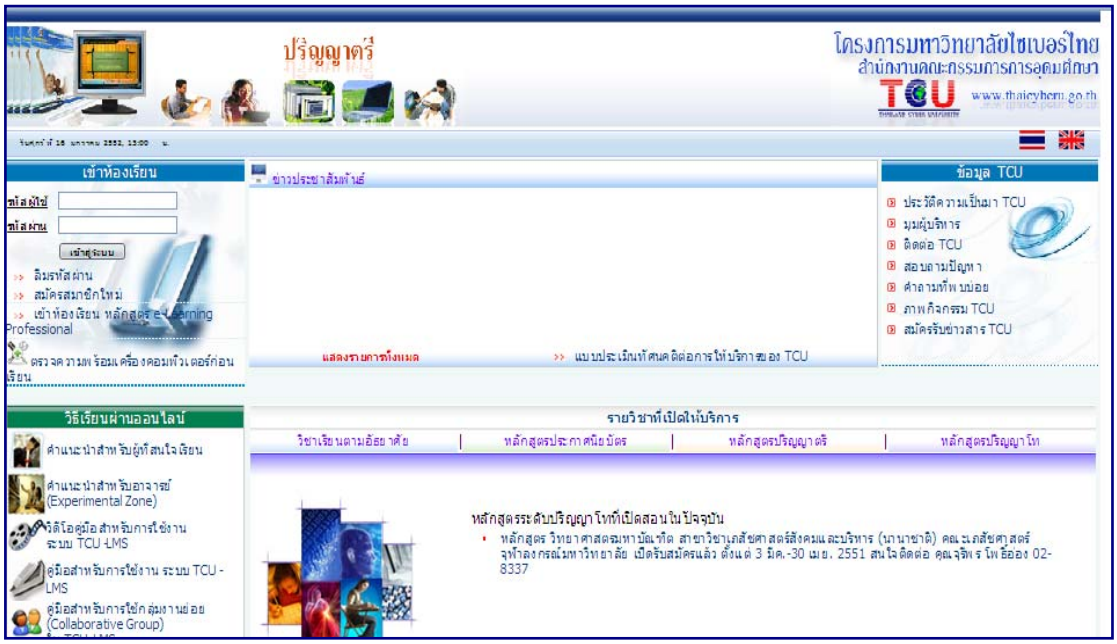
Exhibit 4: Number of enrolled compared by schools between 2004 and 2005

Academic Program	Number of new enrolled students in fiscal year of 2004	Number of enrolled students in fiscal year of 2005	Declining rate
School of Business Administration	1,005	687	-31.64
School of Development Economics	326	157	-51.84
School of Social and Environmental Development	315	258	-18.10
School of Public Administration	1,938	1,140	-41.18
School of Applied Statistics	338	431	27.51
School of Language and Communication	107	125	16.82
School of Human Resource Development	484	382	-21.07
Total	4,513	3,180	-29.54

Exhibit 5: Number of enrolled compared by schools between 2008 and 2009

Academic Program	**Number of new enroll student fiscal year of 2008**					**Number of new enroll student fiscal year of 2009**				
		Master Program					Master Program			
	Doctoral Program	Regular Program	Flexible Program (Bangkok)	Flexible Program (Region)	**Total**	Doctoral Program	Regular Program	Flexible Program (Bangkok)	Flexible Program (Region)	**Total**
School of Business Administration	6	421	949		**1255**	8	407	1017		**1432**
School of Development Economics	29	121	299		**449**	40	214	331		**585**
School of Social and Environmental Development	15	24	141	108	**288**	21	26	128	115	**290**
School of Public Administration	30	201	1100	1026	**2357**	75	198	1099	952	**2324**
School of Applied Statistics	27	197	524		**748**	39	183	536		**758**
School of Language and Communication		23	217		**240**		32	237		**269**
School of Human Resource Development		96	387		**483**		122	369		**491**
Total	107	1083	3617	1134	**5941**	183	1182	3717	1067	**6149**

Exhibit 6: Online Degree Programs in Thai Institutions



Thailand Cyber University (TCU) http://www.thaicyberu.go.th


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Exhibit 7: The number of students enrolled in the top 20 largest degree-granting online

School	Students enrolled
University of Phoenix	115,794
Park University	40,000
St. Leo University	40,000
University of Maryland--University College	37,329
Central Texas College	22,090
San Antonio College	19,000
SUNY--Empire State College	18,700
Baker College--Flint	15,248
University of Florida	14,276
Walden University	13,553
Washington State University	13,292
East Carolina University	12,578
Pennsylvania State University--University Park	12,000
Community College of Southern Nevada	10,583
Kaplan University	10,029
University of Colorado--Denver	9,372
Rochester Institute of Technology	8,630
Anne Arundel Community College	7,896
Broward Community College	7,157
University of South Alabama	6,977

(**Source**: The Sloan Consortium, 2005)

Exhibit 8: Additional Research Findings on e-Learning

The Sloan Consortium also reported that 65% of higher educational institutions primarily use core faculty to teach online courses compared to 62% that report primarily using core faculty to teach F2F (Face to face) courses. Moreover, they also showed that 75% of academic leaders at public colleges and universities believe that online learning quality equals or surpasses F2F instruction. The larger the school, the more positive the belief in the quality of online learning compared to F2F learning. However, increasingly e-Learning is being selected by campus-based students as part of campus-based, face-to-face classes, as well as in online and blended eLearning programs, and e-Learning continues to offer flexible alternatives for meeting the ongoing organization requirements of a diverse workforce. Although not every e-Learning professional has had online teaching experience, more than 95 percent have had experience integrating computer or Web technology into their face-to-face teaching (Kim & Bonk, 2006).

In addition, a rise in blended learning instruction is expected that combines face-to-face with online offerings, rather than fully online courses. Moreover, academic institutions have made huge advances in the way in which they deploy e-Learningas part of their core curriculum. As new tools emerge, many learning technology experts are now looking at how virtual environments can be used to provide high-quality educational experiences. Emerging technologies that are making their mark on the learning arena include motion-capture, gestures, haptics, screencasting, IP TV, virtual reality, visualizations, and advanced performance management tools (Hemming, 2008).

Technology in and of itself may not guarantee better learning, but when effectively deployed, technology can help focus attention while attracting and maintaining the learner's interest. In reflecting on the importance of design experience in software development, Kevin Mullet (2003) noted that looking at it from a learning-

oriented perspective, when technology can help strengthen learner motivation, focus attention, make a learning moment more memorable, or demonstrate the relevancy of learning to performance, the greater is the likelihood that technology will have a direct positive effect on learning (Wagner, 2008).

To conclude, designers of e-Learningmust balance their desire for effective experience with the demand for effective instruction. The high percentage of e-Learningcourse completion failures has been attributed to poorly-designed online experiences that demotivate learners with repetitive, boring functionality and other frustrations (Wagner, 2008).

Exhibit 9: The Vision of NIDA's President

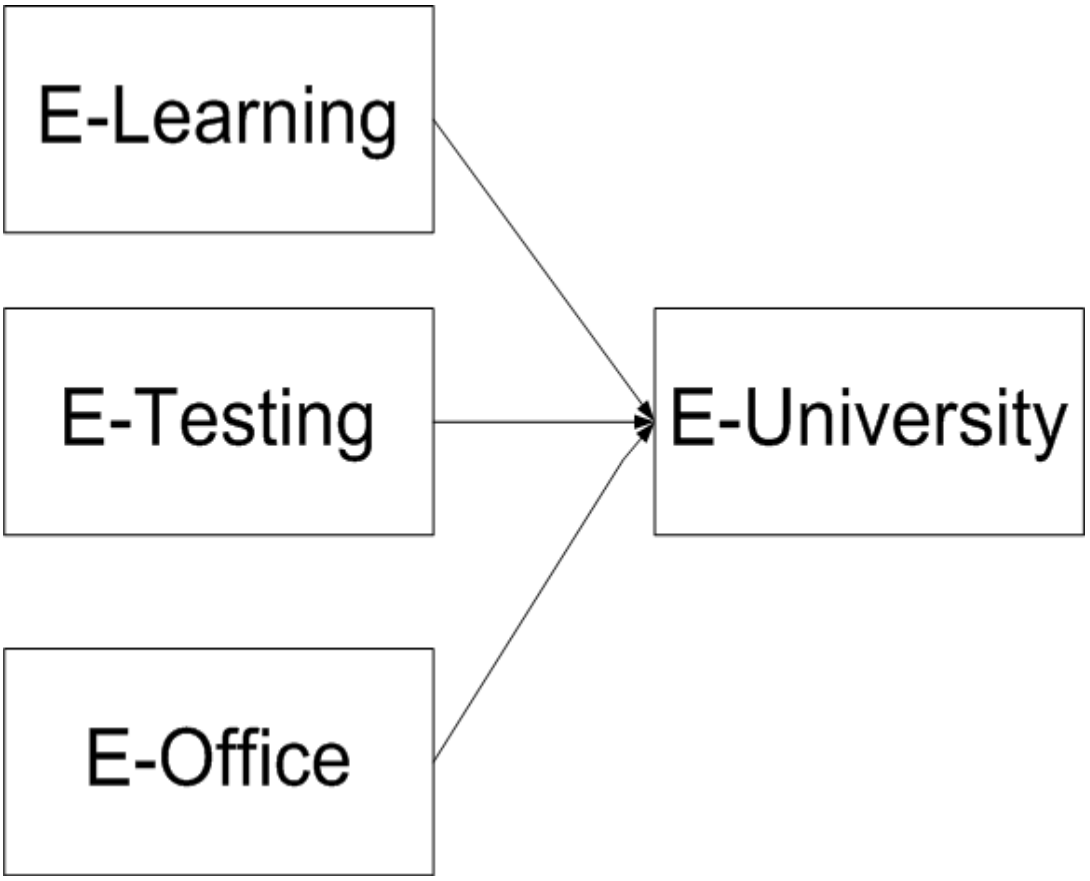


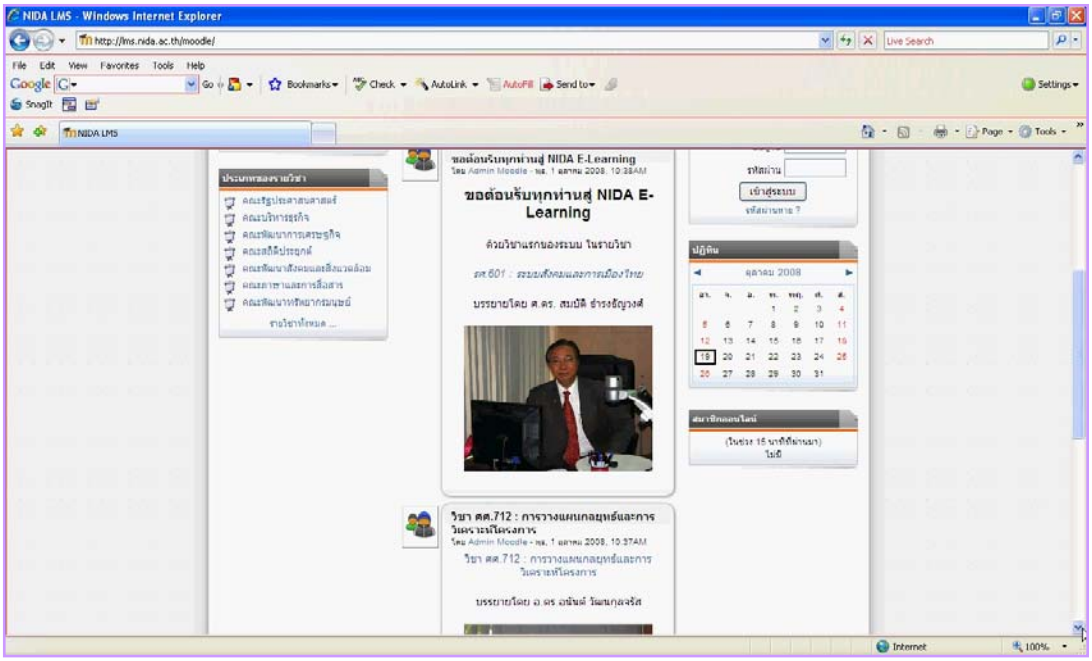
Exhibit 10: The implementation of e-Learning at NIDA

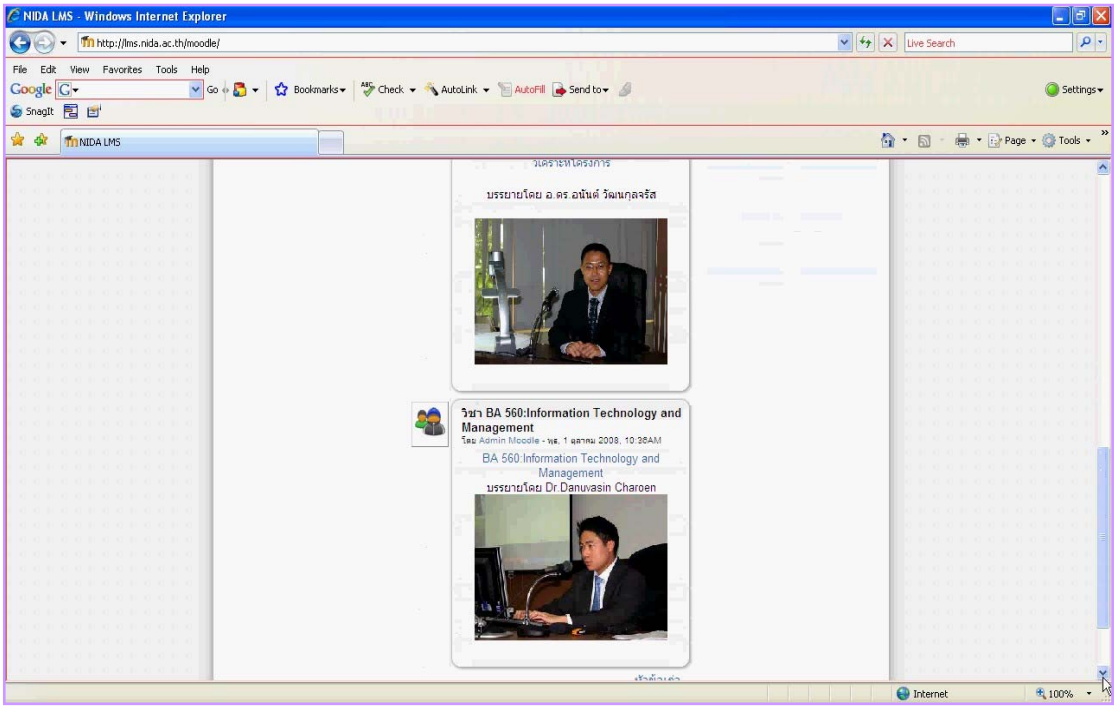

To produce the content, the developers record the lecture in a classroom.

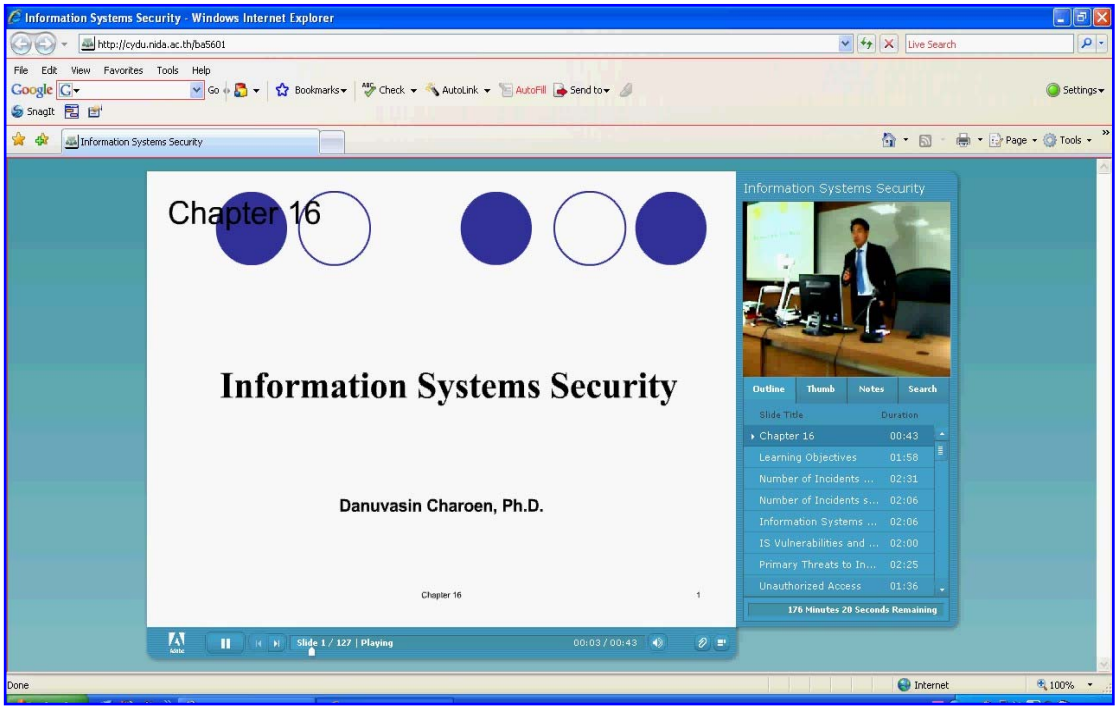

Students in a class

The lecture slides together with the video are posted on the e-Learning web site (lms.nida.ac.th)

Currently, NIDA e-learning project is still a pilot project. Three professors are volunteers to participate in the e-Learning project.







Example of e-Learning material

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