International Journal for Educational Media and Technology
2007, Vol.1, Num. 1, pp. 35-47

The Korea Agency for Digital Opportunity & Promotion's e-Learning Initiatives to Bridge the Digital Divide in South Korea

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The Korea Agency for Digital Opportunity & Promotion (KADO) began to provide e-learning from 2001, via the site Baeumnara, primarily to the 4 major underserved groups including the disabled, the elderly, housewives, and other low income classes-farmers or blue collar workers. This research was proposed to design the strategies and future directions for the development and management of Baeumnara content. To do this, the SWOT matrix model was adopted in order to analyze strength, weakness, opportunity, and threatening elements of its content, based on the findings from the reviews of e-learning trends and programs for the underserved groups both in the United Kingdom and Australia, the survey on the user satisfactory level of its content, and a meeting with the managerial staff of Baeumnara. As a result, 5 main areas of strategic tasks were suggested and their subordinated tasks were reclassified into medium- and long-range strategies in terms of timeliness and practicality.

Keywords: digital divide, e-learning, underserved groups, SWOT analysis, the Korea Agency for Digital Opportunity & Promotion

Introduction

Advancement in information technology and its related social factors have accelerated the growth of an information-intensive society. In this information age, accessibility to information environments is diverse, and the gaps between the information haves and the have-nots are greater than ever before. Thus, the most advanced countries in information technology consider information or digital divide closing as a hot issue of current times and gear their efforts toward improving information accessibility for the information-deprived, in particular, and for the public in general.

In Korea, the Korea Agency for Digital Opportunity & Promotion (KADO) has become established in accordance with the Digital Divide Closing Act in 2003 as a relevant institution of the Ministry of Information Communication (MIC). KADO is a specialized government subsidiary providing the disabled, the elderly, and farming and fishing villagers with easy and affordable access to information and communication services, so elevating the quality of life of these groups and achieving a more balanced development of the national economy. KADO is specifically engaged in seven goals: information access environment creation, skills and content development aimed at bridging digital divide, international cooperation to narrow the global digital divide, public IT education to upgrade people's IT literacy, promotion of public awareness about the digital divide, encouragement of productive information use and prevention of informatization adverse function, and research and development on the digital divide and its bridging strategies.

In relation to these goals, KADO is one of the major businesses involved with the development and distribution of useful content to the underserved. To this end KADO operates a number of free online sites and services for informatization in association with MIC, including 'Baeumnara', which means education land in Korean. In 2001, 9 courses were initially served to 16,394 people through the site. The number of courses then increased annually up to 46 courses in August, 2005. So, the total number of served people reached 490,228 in 2005(KADO, 2005).

However, the number of enrollments in the courses offered through Baeumnara has gradually decreased each year since 2002, and less than 20% of those enrollments completed. This shows the recent tendency in which the issue of digital divide has shifted to the issue of digital opportunity (Kuttan & Peters, 2003), in that the underserved is disadvantaged not only in terms of IT accessibility but also in terms of its productive utilization. Thus, KADO realized that it was inevitable that the organizational scheme of information education may be reconsidered for the underserved as well as for the general public through Baeumnara. As a result, the current research was suggested to outline a strategic direction of online content development and management to KADO in accordance with recent trends in e-learning for the digital-deprived.

Thus, this research aimed to provide KADO with both medium- and long-range development plans corresponding to the fast paradigm shift in the information society and in so doing reviving information accessibility of the underserved through Baeumnara. To do this the SWOT analysis was applied as a research method, based on the findings of environmental factors and internal abilities of Baeumnara and its contents. Specifically, e-learning trends for the underserved were firstly analyzed by reviewing e-learning programs and related policies in domestic and international communities. In particular international trends in e-learning for the underserved were reflected by the case of Learndirect (http://learndirect.co.uk) in the United Kingdom, and that of Inclusive e-learning project (http://www.flexiblelearning.net.au/flx/go/home/projects/2006/inclusive) in Australia. Secondly, user level of satisfaction of Baeumnara's content was surveyed. Thirdly, e-learning experts' comments on the trends of nationwide e-learning for the digital-deprived and KADO's e-learning strategies were collected and analyzed from two seperate seminars. Fourthly, the current management policies and perceived problems of KADO's e-learning service were identified at a meeting with the managerial staff of Baeumnara. Then, SWOT analysis was finally performed to develop a roadmap of KADO's e-learning for both the general public and the underserved through a scan

of its internal and external environments.

Trends of e-learning for the underserved in the UK and in Australia

The trends and service systems of e-learning for the underserved in the UK were reviewed at Learndirect (http://learndirect.co.uk). Like KADO, Learndirect delivers e-learning courses to inspire existing learners to develop their skills further, win over new and excluded learners, and transform the accessibility of learning in everyday life and work. Thus, the analysis of Learndirect may suggest innovative strategies of e-learning for KADO.

Review of the site suggested that delivered content was authentic, rich, and various. With respect to the practicality, the courses are classified in detail thus aiding the user in their choice of course, which are linked to certifications. The content is varied not only in type but also in the level of content matching the diverse needs of an individual.

E-learning in the UK is also characterized by its operation which is intimately related to off-line learning centers. Learndirect operates a network of more than 2,000 online learning centers providing access to a range of e-learning opportunities throughout the UK. So, the user can access Learndirect courses through the site or any learning center located conveniently from their residence. The courses can be free or charged depending on a number of conditions including the user's qualifications and the methods of service delivery. The budgets for course development and tutoring are supported by government related organizations, and online learning centers are various in terms of their scale. These flexible management systems contribute to the user's accessibility to the content. And the social system in the UK encourages the easy development of innovative content. External organizations can submit a proposal of content development online ensuring content relevant to the changes of social demand can be developed in timely manner. Additionally e-learning content is developed by external professional organizations and then encouraged to be delivered through Learndirect by a content broker like the University for Industry (UFi) (http://www.ufi.com).

In Australia the trend of e-learning for the underserved was analyzed based on the execution of the Australian Flexible Learning Framework (AFLF), which was proposed in 1999, and has been executed since 2000 in relation to the employment of the disabled and the youth. The framework is a national strategy collaboratively funded and managed by the Australian government and all states and territories. AFLF is operated by a strategic focus group of governments, called the flexible learning advisory group (FLAG) with financial support from the federal government and the government of states and territories. In particular this framework sets in operation the inclusive e-learning project designed to increase the uptake of e-learning in the underserved. It is a continued project from 2005, whose outputs are on the web site, http://www.groups.edna.edu.au/course/view.php?id=89.

This review indicates that Australia is also highly concerned with bridging the digital divide through e-learning. In particular, the Australian government's organizations are functionally associated and take part in the performance of AFLF which contributes to the optimal utility of

limited resources and budget for the actualization of the framework. The approach of information education in Australia is bottom-up, based on the autonomous initiation of the public in online communities. Therefore, the e-learning content, which was developed based on the AFLF projects, is extremely practical and relevant to the special needs of underserved individuals. Overall, information education in Australia has been fostered through the development of offline communities for various types of small groups and even for an individual. The communities provide a fertile ground for useful and practical content and resources for the underserved. Tele centers are located throughout the country and provide the communities with a space for an offline meeting. Additionally, such centers provide useful information of online, or offline, training programs of information education more effectively than other channels of advertisement.

Survey of user satisfaction in Baeumnara and focused group meeting

Survey of user satisfaction in KADO's e-learning based IT education

The user's satisfaction of online IT education courses through Baeumnara was examined during the period of the 27th of January to the 5th of February in 2006.

Participants

There were 573 responses from 1452 enrollments in 58 courses (40% reply rate). The participants comprised 323 males (56.4%) and 250 females (43.6%). Their ages were 190 individuals in their 50s (33%), 151 in their 40s (26.4%), 129 in their 30s (22.5%), 91 in their 20s (15.9%), and 12 in their 10s (2.1%). They were resident in Seoul (n=147, 25.7%) and the capital region (n=120, 20.9%) in common and the remainder were spread throughout the country or overseas. The participants were low earners in general; their annual incomes were commonly in the range of 0 to less than 15million won (n=236, 41.2%) and that of 15 million won to less than 25million won (n=137, 23.9%). Their professions were various, including office workers (n=90, 15.7%), the job-less (n=78, 13.6%), housewives (n=68, 11.9%), students (n=64, 11.2%), teachers (n=59, 10.3%), the self-employed (n=50, 8.7%), government employees (n=37, 6.5%), professors or artists (n=13, 2.3%). Their academic backgrounds consisted of 280 university graduates (49%), 213 high-school graduates (37%), 19 middle-school graduates (3.3%), and 18 unschooled or elementary school graduates (3.1%).

Procedures

This survey was performed during a 10 day period through the internet. The survey questionnaire was uploaded onto the Baumnara site and the participants' responses were automatically coded and recorded to the server.

To analyze the data, frequencies and percentages were calculated basically analyzed in order to group the participants' constitutions in terms of sex, age, residence, annual income, profession, and academic background. Then, the group differences of the participants in terms of the items of course information were analyzed by the performances of frequency test and Chi square test. The participants' satisfaction of the contents, the delivery service, and the learning environments

were analyzed by a series of one-way analysis of variances. Additionally, the participants' suggestions were analyzed by frequency test, Chi square test, or classification.

The survey instrument

A questionnaire of user satisfaction of Baeumnara's online courses was developed and used. It consisted of 35 questions comprising sections regarding bio-data (6 items), course information (6 items), satisfaction of content (9 items), quality of delivery service (5 items), the learning environments (6 items), and suggestions for improving (3 items). The items on the satisfaction survey were measured by a 5 point scale. The details of each item category were as followers.

The bio-data included the items of sex, age, resident area, average income, profession, and academic background, and the information on the attended courses included the number of enrolled courses, type of courses, an approach route of Baeumnara, motivation of attending, a place to login, an environment encouraging attendance. The satisfaction of the contents included items such as the diversity of courses, course organization, the relevance of the learning period, faithfulness of content, the amount of tasks, the level of difficulty, the practicality, the allowance of re-attending, and the advisability of courses. The satisfaction of the quality of delivery service included such items as the effectiveness of courses, the effectiveness of evaluation, and the interaction with tutors, with peer learners, and with materials. The satisfaction of the learning environment included the information search, course search, navigation, the system's stability, help, and the information on attending. And the suggestions for improving included which courses should be enlarged, new courses to be offered, and others to be revised.

A reliability test was performed on the 27 items of the questionnaire, besides the 6 items on bio-data, and Cronbach's α for the 573 participants was high, .80.

Findings

Over 80% of the participants took one or two courses; 303 participants (52.9%) took a single course and 187 (30%) did up to two courses. The practical and applicable courses were more popular (n=237, 41.4%), than the basic (n=157, 27.4%) or the professional ones (n=168, 29.3%). In particular the performance of one way analysis of variances on the different groups in their ages, professions, or academic backgrounds indicated that the basic courses were more popular to the over 50s, the job-less, housewives, and the groups with less formal education. In contrast the courses in the areas of practical and application or the professional were demanded more by the 30s and 40s, the government employees and students, and the groups with a higher level of academic background.

The participants were made aware of Baeumnara mainly through an internet search (n=260, 45.4%), by recommendation (n=198, 34.6%), through a company network (n=41, 7.2%), an advertisement on mass media (n=22, 3.8%), and others (n=52, 9.1%). The participants' motives for studying through Baeumnara ranged from it being free of charge (n=286, 49.9%), having useful content (n=192, 33.5%), good learning management (n=49, 8.6%), easy material (n=18, 3.1%), and others (n=28, 4.9%). 468 participants (81.7%) logged into Baeumnara from their residences. Over half of the participants (n=318, 55.4%) logged into the site together with friends or neighbors and/or family members, and one third (n=176, 30.7%) did so alone.

The participants' satisfaction was analyzed based on the area of content, of the service delivery method, and of the learning environments. Means and standard deviations of each area are shown in Table 1.

Table 1. *Means and SD of variables on content satisfaction*

variables on the satisfaction of content	mean	SD
13. Variability of courses.	3.98	.783
14. The course material is well organized.	3.91	.768
15. The study period is neither too long nor too short.	3.05	.769
16. The course material is faithful (interesting & useful).	3.91	.758
17. The amount of tasks in a course is reasonable.	3.57	.776
18. The difficulty of material is well structured.	3.66	.770
19. The material is applicable to real life.	3.82	.741
20. I have the intention of attending another course with Baeumnara.	4.36	.621
21. Baeumnara's courses are recommendable to neighbors.	4.34	.632
22. Unlike books or video tapes, the course itself is relevant for an independent study.	3.90	.823
23. Evaluation results (a test or an assignment, etc) reflect well on my understanding of material.	3.73	.791
24. There were frequent interactions with a tutor (mail, messenger, telephone, etc).	2.29	.951
25. There were interactions with peer learners of a course.	2.27	.912
26. Participation in various activities (click events, filling in blanks, etc) helped better understanding.	3.20	1.018
27. It is easy to search for information on Baeumnara courses at the site.	3.73	.760
28. The attended courses are easily searched at Baeumnara.	4.12	.683
29. It is easy to move to the course, which I want to see.	3.84	.795
30. The delivery service is steady and stable.	3.45	.982
31. The procedure of course attendance is explained in detail.	3.85	.680
32. My pace of study is known.	4.21	.629

Kaiser-Meyer-Olkin (KMO) measurement showed the value of .91, indicating the variables are sound. KMO & Bartlett's test of sphericity showed the value of 3725.661 indicating that factor analysis should be utilized ($p< .001$) and communalities exist. As shown in Table 2 the results indicated that factor loading of each item is over .5 and each factor's Eigen value is above 1. Thus, the items were classified under one of 4 factors including content, interactivity, learning environments, and the relevance of course duration. The first factor, content, included the most explicable variance, 23.367%, interactivity came next with a value of 14.072%, the learning environments followed with 9.404%, and then course duration with 6.244%. Cronbach's alpha for the content was .883, for the interactivity it was .612, and that of the learning environments was .762.

Table 2. *Outcomes of factor analysis on the items for content satisfaction*

no	Items	Factor				commu-nality
		contents	interact-ion	learning environ-ments	course duration	
13	course diversity	.663	.276	-.034	-.181	.550
14	course organization	.753	.205	.131	-.026	.627
15	relevance of learning period	-.081	.063	.126	.720	.545
16	faithfulness of content	.797	.196	.081	.022	.680
17	amount of tasks	.612	.141	.165	.088	.430
18	level of difficulty	.656	.185	.222	-.001	.514
19	Practicality	.682	.163	.177	.062	.526
20	allowance of re-attending	.544	.141	-.056	.560	.632
21	advisability of course	.574	.191	-.018	.469	.586
22	course effectiveness	.659	.224	.120	.165	.526
23	evaluation effectiveness	.556	.203	.240	.115	.421
24	interaction with tutors	.145	-.030	.725	.005	.548
25	interaction with peers	.155	.065	.744	-.022	.583
26	interaction with material	.143	.143	.654	.127	.485
27	information search	.304	.574	.320	.059	.528
28	course search	.153	.729	.103	.082	.572
29	navigation	.102	.731	.110	-.100	.566
30	system's stability	.205	.530	-.028	.080	.330
31	help	.338	.647	.084	.055	.543
32	information on attendance	.201	.552	-.129	.254	.426
	Eigenvalue	4.673	2.814	1.881	1.249	
	Explicable variances	23.367	14.072	9.404	6.244	
	Accumulated variances	23.367	37.440	46.843	53.087	

One-way analyses of variances were performed to show the differences between the groups, diverse in sex, age, residence, income, profession, or academic background in order, on content satisfaction, the interaction, the learning environments, and the course duration. The results indicated that the mean of satisfaction for the course content was 3.92 indicating that the course content is highly satisfactory. One-way ANOVA indicated that there were no significant group differences in sex, residence, or academic backgrounds, but significant differences in income [F (4, 568) =4.646, p<.01] and profession [F (8, 560) =3.123, p<.01]. Post-hoc analyses indicated that the less than 15million won income group was significantly less satisfied with the content than the more than 45 million income group. The teacher group showed significantly higher satisfaction than either the student group or the others.

The mean of satisfaction for the interactivity was 2.59 which was relatively low. One-way

ANOVA indicated that the group differed significantly regarding sex only [t (1, 571) =6.246, p<.05], indicating that the male participants showed higher satisfaction than the female for the interactivity during course study.

The mean of satisfaction for the learning environments was 3.87, showing high satisfaction. No group differences were found except for that in income. That is, the less than 15 million won income group demonstrated significantly lower satisfaction than the 35 million ~ 45 million won income group.

The mean of course duration was 3.05, showing neutral satisfaction. This was not significantly different in sex, age, residence, income, profession, or academic background.

A further suggestion from the participants showed that there was a desire for more courses to be developed in practice and application (n=312, 54.5%), in the professional (n=178, 31.1%), in the basic (n=61, 10.6%), and in other areas (n=22, 3.8%). This suggestion was significantly different in the participants' sex (χ^2=15.580, p<.01), in their ages (χ^2=84.119, p <.001), in their professions (χ^2=55.429, p <.001), and their academic backgrounds (χ^2=52.905, p <.001). That is, the participants wished to develop more courses in practice and application as well as those of a professional nature. However, this was a little difference, depending on the diversity of groups. Young ages of less than 50 suggested more development of the practical and applicable courses as well as the professional, which may be very useful for employment. On the other hand, the job-less and the group with lower levels of academic background than middle school graduates demanded more of the basic courses than the other groups. The participants suggested a course list for development and also pointed out a number of problems or ideas for revision of course development and management.

Focused Group Meeting with experts and interview with Baeumnara staff

The meetings of experts focused on the directions of online information education for the 4 underserved groups (housewives, elders, the disabled, and the others i.e. the low income class, students, etc). In particular, curriculum, resources, difficulty levels, features, targets, organizational and managerial characteristics, and specialties in Baeumnara services were discussed. At the first meeting four experts on e-learning or information education for females, and two Baeumnara staff participated. At the second seminar there were various participants including seven experts on e-learning, IT, and the online business community, and two Baeumnara staff as well as four examiners of the 1st draft of this research.

In addition, a member of the research team of the current study visited KADO and conducted an interview with 4 staff members of Baeumnara in order to investigate the organization's human and physical resources, working processes, course development and management, visions and business plans, etc. The findings from those meetings are summarized as below.

Baeumnara may already realize that its service only for IT education has limitations. Although new courses have been continuously developed, the increase in the amount of content may face limits in the process of planning and development, and also in quality control, if the process is internally performed as it has been.

Baeumnara has developed content which lacks in the utility of various media, and has no objective evaluation system of learning achievement. These may be obstacles against encouraging access to the site and course completion by participants. It might be difficult to expect better quality of content with the limited budget and staff at the current time.

However, KADO has the physical attributes necessary to develop an internal link between online and offline education, and has a large number of non-member subscribers who have logged onto the site but do not take any courses. These may be the grounds for expanding the roles of Baeumnara in online information education. In addition, the active role of tutors' has contributed to the positive impressions of participants of courses even under the limited scope of the current learning management system. However, the current system of tutor support may become strained and limited if the content becomes too varied to meet the needs of diverse participants. Therefore, the tutoring system needs to be examined and restructured corresponding to the extension of service.

KADO also suggested an investigation of the organizational capacity mostly towards the development of a specialized course, relevant to social changes and the organizational characteristics. Baeumnara may concentrate more on information education for the underserved groups than IT education. The organization's limited resources need to be intensively supplied to carry on the development of its 1 or 2 special projects in association with the government's related organizations, private companies, and various private resources.

SWOT analysis

SWOT analysis was conducted based on the data from the review of online education in the UK and Australia, the survey of user satisfaction on Baeumnara, and the outcomes of seminars as well as the meeting with its staff. This method has been often used to suggest a strategic development process (*i.e.*, Park & Sohn, 2004; Kim & Lee, 2003). Underlying the assumption that an interaction between environment and ability is the major factor in making a success of a strategy, this method suggests drawing the factors of opportunity and threatening from environment and the strong and week factors from abilities. Thus, a number of research steps were applied based on the research method: Firstly, strong points, weak points, opportunities, and threatening factors of KADO were extracted from the data and were classified into 4 areas including content, learning environments, management-organization, and management-development. Secondly, a number of strategies were generated based on the extracted SWOT elements from the first step as shown in Table 3. In Table 3, the strategies of opportunity-strong point were generated under the principle, of which the opportunity factors are encouraged to develop. The threatening-strong point strategies were under the principle, which avoid the threatening factors and develop potential strong points. The opportunity-weak point strategies compensated for the weak point regarding it as a turning point to find opportunity factors. The threatening-weak point strategies compensated for both the weak point and the threatening factors.

Table 3. *Baeumnara's SWOT strategy*

DIMEN-SION	SUBORDINATED STRATEGIES
O-S	▪ practical and job-related content supply ▪ diverse and systematic content supply ▪ supply of content based on the instructional design for active interaction ▪ continuous improvement of tutor management and control system ▪ more flexible and diverse in the amount of learning and study duration, based on the students' characteristics ▪ Development of LMS with the advanced function of course information (advice, help) & navigation ▪ maintaining free course policy ▪ promotional advertisement and events to be aware of free learning opportunities to public ▪ links between learning centers or educational organizations in the country to increase the access to free education ▪ continuous development of curriculum based on the analysis of social trends ▪ development of special content relevant to the needs of the underserved ▪ public advertisement or development of special content relevant to the needs of u-learning ▪ re-examination and/or closing old content served for a while ▪ admittance to the educational needs of overseas Koreans by translating past contents in English
T-S	▪ maintaining the free course delivery service ▪ strategic cooperation with external organizations
O-W	▪ supply of the content relevant to job professionalism ▪ supply of the content relevant to IT application education ▪ supply of the content for language learning relevant to foreign language implications ▪ revision and renewal of the early developed content ▪ supply of instruction design based content ▪ supply of content guiding the learners' flow ▪ restructure of content in order to admit the objectives of certification courses. ▪ support of various learning methods for active interaction with a tutor ▪ improvement of tutoring system ▪ development and management of a learning model relevant to the content for blended learning ▪ development and dissemination of learner-centered printed materials ▪ complex utility of various media (video, multimedia materials) ▪ strategies for the improvement of course completion ▪ development and management of LMS/ LCMS with interface relevant to the needs of each class ▪ maximization of task productivity by task analysis and task re-division of KADO staff in the information education support team ▪ regularity of the user's need analysis and execution of the survey ▪ continuously reflecting on the educational service and management or organization the outcomes of need analysis ▪ device of management system able to improve the expertise of e-learning management ▪ setting up and management of Baeumnara learning center relevant to the local specialty and improvement of tutor support ▪ reexamination of a management system to improve the expertise of e-learning management ▪ regularity of the mid- and long-term management plan of the educational business for online information education and efforts of its actualization ▪ making an effort to guarantee a grant for the extension of online information education ▪ reinforcement of education and training for the staff to improve her expertise and increase of training at the e-learning related organization internally and externally of the country ▪ business cooperation with external companies and consideration of contents re-use ▪ development of content unique to Baeumnara
T-W	▪ sharing of the content and services with the related external organizations through business liaisons ▪ increase of the customizing and reuse of content (a charge or commercial) ▪ reexamination of the quality of content by reducing the number of courses to be developed ▪ investigation of a representative course of Baeumnara and supply

Conclusions

Examination of SWOT analysis suggested 5 main areas of strategic tasks: promoting accessibility to Baeumnara, improving educational effects, maintaining content and services relevant to the needs of targeted social classes, extending and disseminating content, and intensifying organizational capacity. The subordinate tasks of each category are as follows:

Firstly, the promotion of accessibility to Baeumnara involves infrastructure leading to easy access to LMS, public relation events geared towards increasing the popularity of Baeumnara, keeping up the policy of free delivery service, online education liaisons with local learning centers and educational organizations, LMS/ LCMS development and management with an interface relevant to the needs of diverse user groups, setup and maintenance of Baeumnara online education centers coping with communities.

Secondly, the improvement of educational effects includes continued consolidation of tutor management and management systems, instructional design-based development of content, and control systems for professional e-learning management.

Thirdly, the maintenance of content and services relevant to the needs of social classes involves an increase in the amount of practical content, regularity of large scale surveys of user's needs, the content of basic skills for employment and job specialties, curriculum development system based on the analysis of social trends, content development for the demand of u-learning, and specialized programs for multi users.

Fourthly, the extension and dissemination of content involves strategic business cooperation with external organizations, development of Baeumnara as a portal site, and application of blended learning.

Finally, the intensification of organizational capacity includes task analysis and restructure of information education support teams, strategies of work cooperation with internal and external organizations and divisions, regular formulation of medium- and long-range management plans and self evaluation of its process and performance, ensuring budget, intimate work relationship with the center of bridging digital divide, and education and training systems for staff excellence in performance.

The main and subordinate tasks were reclassified into medium- and long-range strategies in terms of their timeliness and practicality. Each task and strategy is characterized by its independence as well as its interrelationship, and so requires systematic and organic approaches in the process of practice. The medium- and long-range strategies are shown below in Figure 1.

In conclusion, the current research suggests the medium- and long-term strategies and tasks of Baumnara for online information education as shown in Figure 1. These strategies and tasks, once implemented, expect to improve the productive accessibility of the information have-nots within the limits of their resources. Besides Baumnara, managed by the representative public agency KADO, there are a number of sites managed by private organizations with the aim of

bridging the digital divide in Korea. They may face with more or less similar barriers to the public agency. The suggestions of the present study therefore may be applicable to these other organizations also, of whom are currently or planning to deliver information education through the internet for the underserved in Korea.

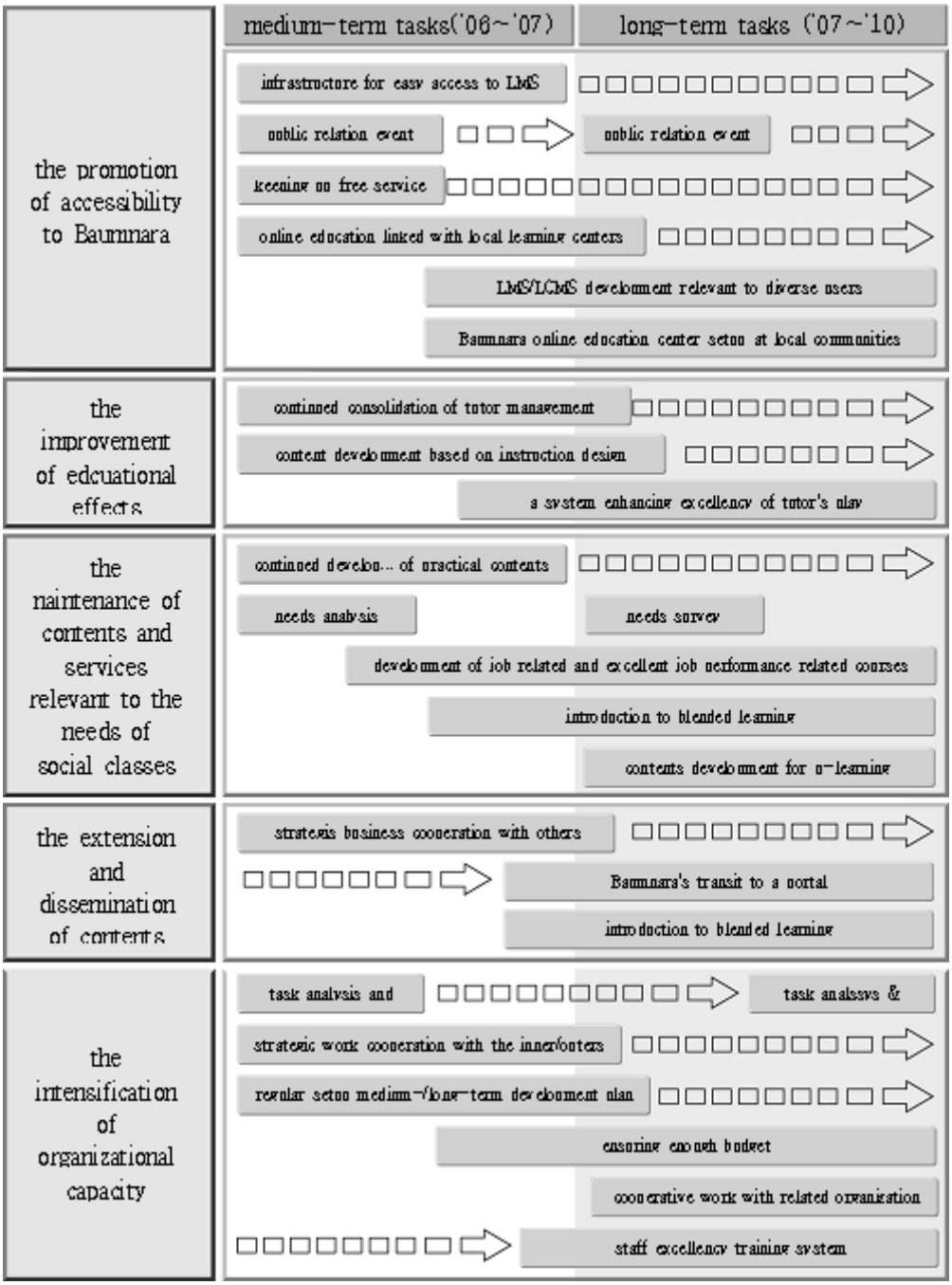

Figure 1. *Flow of medium- and long-term strategies and tasks*

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Related Sites

Australian Government Information Management Office (http://www.agimo.gov.au)

http://ncle.kedi.re.kr/

http://www.agimo.gov.au

http://www.dfes.gov.uk/cybrarianproject/background/history.cfm

http://www.dfes.gov.uk/ukonlinecentres/

http://www.dfes.gov.uk/wired/

http://www.dreammiz.com/main/main.html

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Inclusive e-learning project (http://www.flexiblelearning.net.au/flx/go/home/projects/2006/inclusive)

Learndirect in UK (http://learndirect.co.uk)

Victoria State's TeleCentres (http://www.telecentres.wa.gov.au)

WorkVentures Sydney (http://www.workventures.com.au)

World Submit Award (http://www.wsis-award.org/)

WSA (http://www.wsis-award.org/)