

“Business Game” - An Illustration of Intensive Web Based eLearning Support Technologies Usage

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Abstract

The materialization of Web based learning support systems as a result of emerging advanced technologies encouraged the high-academic board at the College of Management to implement a new system, as a replacement for the existing relatively obsolete application.

HighLearn is a Web-based complete set of solutions for management and delivery of courses materials, as well as forms of communication.

“Business Game” Course, a core, interdisciplinary course, obligatory for all undergraduates at the School of Business Administration illustrates the benefits that the College has obtained from the new application implemented - HighLearn.

The entire course’s related activity used to take place on campus before upgrading the applications, and many complaints were heard from students who found the entire process bothersome. The modern, Web Based architecture enabled easy bidirectional access and smooth transactions.

HighLearn has been used over a year, and results are more than satisfactory: students access course materials, as well as other computerized support systems easily, considerably faster and safer than before. Thanks to discussion groups, interaction between students and staff was improved,

and so did the communication between students.

Introduction

Recent technological developments have brought Web based learning support systems into materialization. As part of this trend, the high-academic committee of the College of Management - Academic Studies made a decision to implement a new system, as a replacement for the existing relatively obsolete application. The IT steering committee delineated guidelines and prerequisites for a system that would serve all faculties, staff members and students. After evaluating seven different offers, the best and final offer which was chosen and implemented is “HighLearn Education Edition”, which is the common application in Israel, used by many academic institutes.

The HighLearn application was not meant to be a replacement for neither traditional frontal learning nor synchronous eLearning method used, but as another channel of interaction between students, academic and administrative staff, and external applications.

About HighLearn Education Edition

HighLearn Education Edition is a Web-based learning content management system developed by Britannica Knowledge

Systems, Inc. (BKS), to address a broad range of needs of educational institutions.

It provides a complete set of solutions for management and delivery of courses materials, as well as forms of communication. HighLearn application allows educational institutions to set up and maintain a central learning hub that helps faculty members rapidly create on-line courses. HighLearn supports various learning methodologies and enables instructors to implement a variety of online learning methodologies and to integrate all types of digital resources in their courses. Courses can be instructor-led or self-paced. The system enables the establishment of virtual communities for sharing knowledge, thus enables collaborative learning.

HighLearn Implementation Process

Interdisciplinary team was put together in order to lead the deployment process. Several matters needed to be discussed and decided: implementation pace, previous systems and their status during and after the deployment process, requires support levels for both students and staff, dealing with the consequences of organizational change, and all technological aspects, including infrastructure, hardware and software maintenance, etc.

The decision concerning pace and current systems was clear and simple – HighLearn would be implemented with one year. During the transition period all current application would be accessible, and then would become read-only, thus allowing students and staff to view existing information without being able to modify or add new data.

Other major decision was related to the academic staff: who should be involved first? Teachers were categorized into three groups, based on their technological capabilities and previous experience operating similar applications. Proper

training program was initiated. This program included several workshops to meet different needs, starting with basic computer oriented skills, eLearning concepts and general usage, basic HighLearn usage and advanced topics of all mentioned above.

System customization was required in order to comply with the college's specific needs. Those modifications were defined and carried out simultaneously in order to speed the deployment process and HighLearn integration.

Support was divided into three levels:

- Staff Technical support, including authorization errors, basic operation and computer related issues.
- Pedagogic support, including course materials and structure modification, creating virtual course sites, proper management of discussion groups and forums, etc.
- Students support, provided by the college's helpdesk. This helpdesk is accessible by phone all day long. Due to constant increase on calls, the helpdesk extended its services far beyond HighLearn related support, and now handles both students and staff.

Usage and Opinions

HighLearn went into production after a year, in 2006. During the first semester over 30% of all taught courses had a HighLearn site. By the end of year 2006, the usage rate exceeded 60%: more than 400 staff members (out of 700), over 1,100 courses (out of 1,500), and more than 5,000 students (out of 9,000).

The college's high academic committee made a decision towards year 2006 to force usage on all courses. Current statistics (end of second semester 2006) shows average usage of 80%, of which almost 90% course sites include more items than the minimum required.

Teachers' opinion was checked lately. The survey was based on online opinion poll, which included a questioner, covering different aspects, including interaction with students, how the HighLearn system improves teaching quality, and others. Most of the teachers found the new application and teaching method useful, and expressed encouraging opinions. 94% of the sample stated that they intend to continue using the HighLearn, and 87% of them would recommend their colleagues to use it.

"Business Game" Course

"Business Game" is an interdisciplinary course, obligatory for all undergraduate students learning at the school of Business Administration on the last year of studies.

Integrative approach used in this course enables students to gain managerial skills and practice, develop a broad-minded approach to the diverse operation of a business: accounting, marketing, finance, HRM, manufacturing, resource planning, International activity and more. Decision making processes and team work are inherent, by simulating a management board of a commercial firm.

The course's technical progress is carried out by simulation software. This software integrates students' decisions, and outputs detailed reports and performance indicators. Students use various analyzing and deduction tools (some computerized) in order to make their decisions.

The simulation process algorithm is based on several business models and represents the reaction of a competitive market to different prices and perceptible value of goods and services offered by the competing teams. Each team (representing a firm) is a group of 3 – 5 members, who play the role of managerial team of a firm. The industry consists of up to twelve competing firms. The market reaction to a firm's decisions is measured by demand to its

products, thus reflecting the firm's decisions suitability to the industry on one hand, and their edge over competitors on the other. Thus, the firms' performance, like in the "real world", depends on the decisions made by the other groups, market conditions and the economical state.

On the first 7 weekly plenary meetings, the entire class discusses various relevant subjects, like strategic planning, financial aspects, marketing and so on. Each group meets one or more of the game staff every week for a consultation on the professional aspects and possible consequences of decisions they make.

A decision set is loaded into the system every week, and represents six months in the firm life. The duration of the semester and the need to teach many aspects and technical usage of the software allow 8 periods, equal to four years in a company's life.

Central Control Server is used for uploading decisions and downloading results. Every team receives a set of managerial reports, which reflect their performance on the last period. The private management reports that are individually downloaded by each group include a summary of their decisions, Operational data, financial reports (income and expense statement, balance sheet, cash flow) and market research, which includes industry information, consumers related data and partial data about competitors.

Performance points calculation is based on a few factors, such as profitability, matching supply (manufacturing capacity) to market demand, financial ratios, consistency between decisions and strategy, business ethics and the way each firm is evaluated by different stakeholders.

On top of the simulation process, students are required to hand out four home assignments, and have to pass a midterm exam.

Upgrading to a Web-based Learning Support Platform

The entire course's related activity used to take place on campus before upgrading the applications. Decisions were sent to the game control server via one of the Local Area Network computers, and since there is a deadline by which students must send their decisions and hand out essays, they had to be on campus or otherwise miss the deadline time. Worse than that, if they wanted to change decisions they had already sent to the control server, they would have had to come again. On some occasions errors were found on the decisions files, and therefore each team needed to appoint a representative, who had to be on campus and correct the file. The simulation itself was processed at night, and printed reports were received by students via one of the administrative units, after identifying themselves.

Many complaints were heard from students who found the entire process bothersome. Decisions were sent using "third party" administrative office, and printed reports were sent the way, causing possible "data lick" to competitors, missing essays, etc.

The modern, Web Based architecture enabled easy bidirectional access and smooth transactions. Most of the activity became more efficient, and very independent. The geographical constraint was removed, and now any student or staff member of the "Business Game" course enjoys the following improvements:

- Web based platform for file transfer accompanied by a client-side interface, allowing students to make decisions and save them anywhere, anytime. Decision files are upload to the control server using FTP, followed by a success/failure message.
- Homework assignments (weekly cases analysis and essays) are

uploaded using the same manner. No hardcopies are used anymore.

- Results are loaded to the control server, allowing students to download them immediately, after authorization.
- Home assignments are downloaded directly, grades and comments are added to the files. No papers required.
- All other course materials, such as presentations, manuals, assignment guidelines, messages, etc. are all accessible through the virtual course site on the HighLearn application.
- Discussion groups allow better communication between students, students and staff, improving cooperation between competitors and therefore making the course more interesting.
- Virtual communication channels have been lately added to the course site. This addition's main purpose was to help team members who live far away from each other and don't share the same schedule working as a team in spite of the distance. The usage rate was very low, though.
- Every transaction (decisions upload, results download, login, essay upload and download, etc) is audited, allowing course's staff to track IP addresses, date and time, and other data.

Statistics: current semester's activity rate

- Control Server transactions (file shift)

Transaction	Upload	Download
Decisions Roll	1013	
Results Report		6537
Home Assignments	531	1964

- Course materials access rate (total hits)

Item type/group	Access Rate	Average Per Team	Average Per Student
General Instructions	20,528	256.6	50.2
Discussion groups	452	5.65	1.1
Performance comparison	3,312	41.4	8.1
Presentations	743	9.28	1.82
Control Server	8,134	101.67	19.88
Grades	8,338	N/A	20.38
Announcements	12,454	155.67	30.45
Total	53,961	674.5	131.93

eLearning mechanism in order to allow students to be somewhere else, which attendance is still being enforced.

Screen shot examples



Conclusions

Web based learning support system has been running over a year at college. Results are more than satisfactory, and according to the entire teaching staff of "Business Game" course, students access course materials, as well as other computerized support systems easily, considerably faster and safer than before. Thanks to discussion groups, interaction between students and staff was improved, and so did the communication between students – both team members and "competitors". Time efficiency allows students to focus on decision making and other course requirements, instead of being pre-occupied with administrative tasks. These way students absorb the simulation purpose and meanings faster, and benefit the course further more.

However, being able to handle major activities without actually being on campus has a few side-effects: students' attendance is not as it used to be, although meeting the staff is very important. Students tend to attend all plenary classes, and then skip other meetings with the teaching staff. One of the options we consider as a remedy for this phenomenon is adding a synchronous

*** Results in the Current Period ***										
Co. #	Return on Sales	Return on Equity	Return on Assets	Return on Invested Capital	Barn per Share	Debt to Equity	Liab to Turn over	Asset Turn	Current Ratio	Stock Price
1	0.080	0.058	0.073	0.052	0.58	0.68	1.18	0.53	1.38	18.38
2	0.045	0.063	0.063	0.022	0.51	1.63	0.76	0.49	1.17	16.49
3	0.096	0.110	0.107	0.051	1.37	0.98	1.00	0.53	1.41	46.61
4	0.085	0.091	0.097	0.048	1.36	0.72	1.24	0.58	1.41	38.01
5	0.082	0.091	0.091	0.042	0.95	0.99	0.96	0.51	1.46	33.54
6	0.100	0.100	0.103	0.050	1.07	0.86	0.99	0.50	2.08	39.80
7	0.083	0.073	0.082	0.038	0.78	0.76	0.98	0.46	3.15	30.44
8	0.011	0.012	0.032	0.005	0.09	1.32	0.77	0.46	1.14	9.59
9	0.085	0.094	0.093	0.042	1.10	1.05	0.90	0.50	1.23	43.23
Av	0.072	0.077	0.082	0.037	0.87	1.00	0.98	0.51	1.60	30.68