

# THE DASH-AREA.COM CASE: CREATING A NATIONAL INTERNET PORTAL AS A CLASS PROJECT

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## Abstract

*This case study describes the author's experiences in using a constructivist approach in two project-oriented information systems classes. The students developed various aspects of an Internet "portal" web site designed to compete with national portal sites such as Yahoo. To increase the students' motivation and enhance their learning, the project incorporated several prominent aspects of a real business. The instructor made an agreement to share the proceeds of the project with the students if it could be sold to investors. The students also "hired" students from other disciplines to help with the project. Although the end product was not marketable, the project led to a number of insights that could be helpful to other instructors considering an implementation of this approach.*

**Keywords:** IS curriculum, IS education, interdisciplinary education, Internet, constructivism

## Introduction

The Internet is having major impacts on virtually every area of life. It provides a mechanism for delivering large volumes of information at a cost that is very low and not affected by distance. The development of this medium has led to large changes in the ways businesses and organizations deliver products and services. Individuals are now shopping, investing, and accessing news, information, and entertainment in ways that are very different from what they did before the widespread availability of access to the Internet.

The Internet also provides many opportunities for enhancing educational processes. It is being increasingly recognized as an effective alternative delivery mechanism for educational content, both in a classroom setting and for remote students taking courses via distance learning. In this context, the Internet is a new vehicle for doing things that were already being done before.

The low cost aspects of Internet also offer opportunities to do things that were not possible before. In the past, to study business processes and activities, students could analyze cases dealing with specific issues. More recently, there has been a trend toward offering course credit for participation in internship programs in organizations, to provide students with a perspective on what is happening in the real world. Both of these approaches are beneficial, but they have limitations. Cases necessarily deal with things that happened in the past, and for most of the students the subject organizations are geographically remote. Internships provide exposure to current practices in a local setting, but the perspective is largely limited to a relatively confined and lower level subset of the organization's activities.

With the Internet, it is now possible to learn about business issues in a new and more effective way. Students can work on class projects that could literally become real businesses, which could be operated by the students after the class is over, and/or sold to investors. In contrast to case studies, the issues are immediate rather than geographically and temporally remote. In contrast to internship experiences, the perspective globally encompasses a whole organization and its external environment.

### ***The Constructivist Perspective***

Constructivism is a learning theory that is becoming increasingly prominent in the fields of psychology and education. It emphasizes learning as a process in which students actively construct their own understandings about a subject or topic, rather than passively receiving content transmitted from outside sources. It emphasizes the following aspects of learning (Perkins 1999):

- active learning - in contrast to the traditional one-way delivery mechanisms of lectures and textbooks, students learn from experiences related to the subject
- knowledge creation - students develop their own mental models of relationships through personal experiences, rather than just receiving them from an instructor or textbook
- social context - students learn by interacting and sharing insights with other students

In the past, information technology was viewed as a useful mechanism for implementing constructivist approaches through simulations and “learning environments” (Jonassen 1994). Before the advent of E-commerce, the capital requirements for setting up a business were so high that many aspects could only be experienced through simulations (e.g., MSU-CIBER, 2001) rather than real-world activities. At this point in time, however, IT offers the opportunity to enhance student learning by enabling them to create potentially real businesses as class projects, rather than being restricted by the limitations of even the best simulations.

The “co-discovery method” used in the Lim, et al. study (1997) represents an implementation of constructivist concepts. In this methodology, pairs of subjects work with a computer system to learn how to use it. The study reported that, in comparison to subjects learning on their own, the co-discovery subjects scored 31% higher score on a test of what had been learned. Although the context is somewhat different, these findings support the value of the constructivist approach.

A common criticism of the constructivist approach is that it leads to “intellectual anarchy,” with each student developing her or his own unique interpretation of observed phenomena. However the social aspect provides “negotiation” mechanisms that tend to deter understandings that are disconnected from objective experience (Jonassen 1994).

When the subject is applications information technology, the possibility of unique understandings could actually be an advantage. Much of what is happening on the Internet is so new and different that there is no established and recognized base of validated knowledge. There are a wide variety of understandings about phenomena in this area, but only time will tell which are right or wrong. Furthermore, since the Internet and other aspects of the IT arena are evolving so rapidly, understandings that are found to be true in retrospect may no longer apply to current situations.

### ***The Dash-Area.Com Concept***

This case discusses an implementation of constructivism in two classes at California Polytechnic University in Pomona. The concept for the implementation originated in the author’s experiences with a previous class in web site development at another school. One of the students created a web site for a gift shop that his father owned in a suburban community in the Los Angeles area. He asked the instructor for ideas on how to increase the effectiveness of the web site in generating business for the store. The ensuing e-mail dialogue and subsequent research led to recognition of the following issues:

- brick and mortar retail activity is a very large aspect of the economy e.g., grocery store sales exceed \$400 billion (U.S. Census Bureau 2001). Conventional retailing will remain important since E-commerce is projected to ultimately account for not more than 10 percent of total retail sales (Bailey 2000)
- the Internet is global, and deals with a very large but also very widely dispersed population, while retail activity is concerned with much smaller local populations
- the large number of web pages on the Internet (the Google search engine indexed over 1.3 billion web pages as of February 2001) makes it very difficult to find web pages serving limited local markets

The author developed a concept for an Internet portal, operating through a network of individual sites, to address these issues. The main features of this Dash-Area.Com concept were as follows:

- create a network of 1000-3000 sites, each focusing on a local community (usually a city or a recognized community within a larger city, e.g., the New York city includes approximately 300 recognized communities).
- assign a unique domain name (www.[community name]-[2 letter state abbreviation]-area.com) to each site. To generate local awareness and publicity, each site would provide free hosting for local businesses and organizations, and free e-mail for local residents. All these web site and e-mail addresses would use its unique local domain name.

- use an auction to enlist a local webmasters to operate each site, and to generate publicity for the concept. The incentive for recruits would be a stake in the ultimate cash out, prorated based on the site's traffic volume.
- feature local news and content on each site, to attract visitors from the communities and nearby areas. Much of this content would be submitted to the site on a self-service basis by businesses and community organizations. Supplement the local content with additional regional and national content.
- support the local sites by a central service organization, which would provide economies of scale in web hosting, and would also provide templates, software, regional/national content, etc. to the local sites
- generate revenues largely through advertising, placed by the central service operation and supplemented by advertising solicited by the webmaster from local businesses. The local nature of the individual sites would make it possible for local advertisers to maximize their advertising effectiveness by limiting ads to communities where they have physical outlets, and for national advertisers to select communities based on the demographics they wish to target.

## Implementation of Dash Area.Com at Cal Poly

The author initially implemented this constructivist approach in CIS 461-Website Development, in the Spring Quarter of 2000. This senior-level class typically assigns team-based web site development projects. The students in this class all understood HTML and website development from work in at least one prerequisite class, and many were familiar with graphics development software. Some also had a previous class where they had learned to use ASP to access data from databases.

In the first session the author introduced the concept, as described above. The next several sessions of the class focused on competitive analysis and project management. Approximately half of the initially enrolled students dropped the class within the first week, some out of concern for the amount of work that it might require. (One of the dropouts subsequently tried to re-enroll.) The remaining students then divided into three teams of 4-5 persons. The teams operated in a competitive mode: each was to develop their own complete implementation of the full concept.

### Financial Arrangements

After the initial sessions, the author presented the financial arrangements for the class. He envisaged that the project would be passed to at least one more CIS class for additional development, and possibly to an entrepreneurship class to market the concept after that. Although he emphasized that the probability of a financial success was low, if the project could be sold the net proceeds would be divided as follows:

**Table 1. Proposed Division of Proceeds of Dash-Area.Com Project**

10%	to author
10%	to charity
5%	to be divided among the 13 students in this class (first phase)
10% (per phase)	divided among instructors and students in each additional phase
remainder (after multiple phases)	2/3 to College of Business, 1/3 to California Polytechnic University

The author had previously purchased the domain name [www.dash-area.com](http://www.dash-area.com) to implement the concept, and also applied for a trademark for the DASH AREA DOT COM phrase. This domain name and trademark became part of his contribution to the project. Although university policies prohibited hosting the domain name on any school server, he set up forwarding on the server of the domain registrar (Network Solutions) so that it redirected to the website for the class. (Some of the URLs shown below incorporate this domain name but actually forward to addresses on the school server.)

The author presented the project to the school's Office of Research and Sponsored Programs, seeking nominal funding for some additional domain names and outside hosting. However because of restrictions on investments of public funds, this office was unable to provide any funding in exchange for an equity position in the project.

### ***“Hiring” Consultants***

The author felt that the class, composed entirely of CIS students, could use help from students with skills in other areas. He therefore asked professors in three other departments to refer students to the class.

The Art Department referred a student and the author briefed her on the details of the project, including the financial arrangements. This student then came to the class for an interview with the class members. The economic aspect was that any student they “hired” would be included equally in the division of their share of the proceeds, so they had to evaluate the trade-off between getting a smaller percentage (5% divided by 14 rather than 13) versus an increased possibility of an ultimate payout. The students interviewed the candidate, and then she and the author left the room so that they could deliberate. They called us back into the room to answer some additional questions, and then we went outside again. Shortly thereafter they called us back and announced that they had decided to hire her as an artistic consultant to the project.

The class then interviewed a College of Business graduate student from an entrepreneurship class to develop a business plan for the project. Since the students were already “paying” for the art consultant, the author used a portion of his own projected share of the proceeds to “hire” the entrepreneurship student for the project.

The class also interviewed a student from the Geography & Anthropology Department who was taking his first course in Geographic Information Systems, but the author decided that this student’s skills were not developed enough to merit a position in the project. The author subsequently posted inquiries on two GIS newsgroups and sent e-mail inquiry to a school with a strong GIS program, but was unable to find a student with the requisite GIS programming skills to join the project on a virtual basis.

### ***Assignments***

The first assignment was for each team to develop a storyboard for its planned implementation of the concept, and produce a brief write-up of the key features of their site. This team project is outlined at <http://www.dash-area.com/461t1.html>.

The second team assignment (see <http://www.dash-area.com/461t2.html>) included development of a project plan. The teams used a trial version of Microsoft Project software to develop and track their plans. They also developed a nonfunctional prototype of their proposed site, and identified functionalities to be implemented in the final phase (see <http://www.dash-area.com/461t3.html>).

During this phase, each team also selected a local community for which they would develop their community site. The three chosen communities were Laverne in Los Angeles county, and Montclair and Rancho Cucamonga in adjacent San Bernardino county. All three are close to Cal Poly’s campus in Pomona.

Because of the restrictions on use of school servers, the teams were given the assignment of finding commercial web hosting for their community web sites. The instructor purchased the web hosting, and also used the individual hosting services to purchase domain names ([www.laverne-ca-area.com](http://www.laverne-ca-area.com) and [www.montclair-ca-area.com](http://www.montclair-ca-area.com)) for two of the teams. (The other hosting service was unable to acquire a domain name in a timely manner.)

The third and final team phase was to revise the initial prototypes, and add the planned functionality (on a mocked-up basis if it was not possible to make it operationally functional). The teams were also asked to identify and enlist local businesses and community organizations for free websites on the community portals they were developing.

The grading was based on three considerations:

- the quality of the team projects, based on materials turned in from the three team assignments, and on the oral presentations in the last class meeting
- individual portfolios (see <http://www.dash-area.com/461p1.html> and <http://www.dash-area.com/461p2.html>) developed by each student, detailing her or his individual contributions to the team effort
- “personal responsibility forms” (<http://www.dash-area.com/responsibility.html>) submitted by each student at the end of the class. Each student evaluated her or himself and each other member of the team in terms of quantity of work, quality of work, and cooperation.

For the final presentations, the author created flyers, which were posted at various locations on campus, and especially in the building that houses the CIS department. The second flyer was designed to be provocative. Printed in a large font, it said: “Cal Poly Battles Yahoo for Control of the Internet.” The author also sent e-mails to faculty in the business school and to people off-

campus who might have an interest in the topic. Unfortunately the “meltdown” of technology stocks on the NASDAQ during April 2000 occurred before the final presentations, and attendance from outside the class was less than expected.

### ***Passing the Project to Other Classes***

Another instructor, who had expressed an interest in the concept, was teaching a CIS 466-Senior Project class in the Summer Quarter. The author was out of town during the first 3 weeks of the class, but he passed the materials from the Spring Quarter class to a team in the other class. Their assignment was to select from the materials from the three individual sites, and use them to develop a composite site that embodied the best practices from the sites developed by the other teams. Unfortunately the team that took over the project did not make any significant progress in advancing the concept.

The author attempted to find management or entrepreneurship classes, either at Cal Poly or at some other school, which would work on the marketing and business aspects during the fall term. However he was not able to find any instructors that were interested in the concept.

## **Evaluation**

The author feels that the project was successful with the Spring Quarter CIS 461 class. The students enjoyed working with the concept, and had some very realistic experiences working with E-commerce issues that were very topical at the time. In addition, the “hiring” experience was something that they would have been very unlikely to experience in some other class.

Another very practical aspect of the project was having each team select a hosting service and buy domain names. Working with the technical people at a hosting service to set up database connectivity, which varies from vendor to vendor, was excellent preparation for similar activities outside of a campus setting.

The downside on hosting and domain names was the cost, which was borne by the author. However since that time, a number of free hosting services that offer ASP capabilities have become available. In addition, there are now services where people can buy domain names for one year for \$20 or less, rather than for \$70 for two years. Therefore an instructor who wants to try this approach could realistically have the students secure hosting and domain names at their own expense.

The interdisciplinary aspects were moderately successful. The art consultant did not join the project until it was too late for her to enroll in a class that would provide credit for the experience. Therefore she was working as a volunteer rather than for a grade. There were some problems in her family that limited her availability at the end of the quarter. On the other hand, the graduate student did a very good job with the business plan, and received an ‘A’ from her entrepreneurship class for her work.

The author judged the web site that one team developed as quite a good implementation of the original concept. He evaluated another as better than average. The third team had poor chemistry and weak project management, and did not come up with as much as expected. The team in the class in the Summer Quarter also did not do well, perhaps reflecting on the limited time that the author was able to work with them. And the attempts to subsequently pass the project on to a class outside of the CIS area were not successful at all.

One unsuccessful aspect of the Spring Quarter class was requiring the teams to contact people in their target communities. The most successful team was able to do a substantial amount of legwork in their community, including visiting the local library and taking pictures of local landmarks. However even the members of this team were unwilling to make “cold calls” with local businesses and community organizations to give away the free services associated with the concept.

For a future implementation of this approach, the author is considering having a team in an entrepreneurship class develop a concept, develop business and marketing plans, and handle whatever outside contacts are necessary. With this approach, the CIS students could concentrate on the technical aspects, leaving the other aspects to students who have interests and training that is more relevant to the non-technical issues.

### ***Ethical Considerations***

The project raised a number of interesting ethical issues. The author was being paid to teach the class. However he was also investing relatively nominal amounts of his own money in the project. The projects were developed using computers and software provided by the California State College system. The students were putting in a lot of their own time and energy in developing the concept. Each of these stakeholders deserved a share in any proceeds that might result, but there were no clear-cut guidelines as to an appropriate division.

The author believes that the proposed financial arrangements (Table 1) represent a reasonable attempt to address these issues. However he recognizes that the prospects for financial gain could easily cloud an instructor's vision in a project like this. For example, consider a situation such as the following: What if there is a conflict between tactics that are better for the students, from a pedagogical perspective, and other actions that are better in terms of the economic prospects for the project? The temptation is obvious.

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