DEFENDING IT INFRASTRUCTURE FOR OPEN ENGINNERING

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Abstract: *Combating computer pests, which can open back doors into networks, thus endangering the integrity of confidential information, is becoming increasingly important. Corporations should update their IT security policies to require that measures be taken against computer pests, including regular scanning and removal. Good pest control software will search for a wide range of malicious non-viral software and help create evidence documenting the effectiveness of your computer pest management program.*
When we say that the web experience is inhuman, we mean not only that computer systems fall far short of achieving human intelligence. We also mean that they, and the websites they support, fall short of treating people as people. Humanity includes aiming to please and catering to human needs. The web treats us in the most inhuman way possible — ignoring our wishes, requiring us to choose among inflexible scenarios.
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1. INTRODUCTION

How is it possible — with computers doubling in power every 14 months, encyclopedic knowledge existing on tiny chips, and high bandwidth reaching offices, homes, and even handheld devices — that our experiences with the web can still be so frustrating? Simply put, the web lacks human intelligence, insight, and flexibility. As the web becomes the primary medium of exchange between businesses and their customers and partners, the sheer inhumanity of the web has a tremendous economic impact. Despite of years of talk about the importance of the customer experience, the web still lags far behind most other communication channels in its ability to provide quick customer satisfaction. This shortfall is the reason many people would still rather pick up the telephone than try a web-based transaction. It's also the reason many web users end up expressing their frustration to (human) call center representatives. The result, in striking economic terms, is a potential customer who could have bought a product or obtained information at a transaction cost of about 10 cents, who instead requires 10 dollars worth of human handholding. And even then, this shopper might go to the competition because the web experience felt so dehumanizing. This paper addresses the fundamental technical and social reasons why the web experience isn't as good as it should be, and what companies can do, today and in the coming years, to make the web a more **human** and more successful way of doing engineering or business. Customers, partners, and employees who use your website deserve a fast, easy, intelligent way to answer their questions and resolve their problems on their own. And it's up to you to make sure your site provides it. But choosing among vendors who all tout their webbased self-service technology

as “best” can be bewildering. This document presents the attributes of a superior web delivery tool and the kind of technology that can support it.

2. POINT OF VIEWS

Every business analyst today agrees that web-based self-service is mandatory for companies to stay competitive and to deliver quality customer care and support. Customers, partners, and employees who serve themselves want relevant answers on the spot- without waiting for email responses or for a live agent. Sometimes they have complicated needs, and sometimes they have simple ones. By giving them the ability to answer questions and resolve issues accurately from a website, you reduce the need for more expensive channels.

Smart business executives are aware of the Customer Experience Gap and its importance, and they are treating their websites as a high priority. Website managers are impaired primarily by two forces: (1) a deluge of vendors who claim to solve their customer relationship management (CRM) problems but in fact often perpetuate the Gap, and (2) organizations that are slow to change, making it difficult to apply on the website the same kind of customer focus that is generally established in a sales office or contact center. These organizational and technological impairments have led to a state in which companies spend liberally on their websites, support rich content, and generate ever more traffic, while making little progress in closing the Customer Experience Gap (CEG).

Computer pests are a large and growing class of miscreant computer programs that go beyond mere viruses. Computer pests include trojan horses, spyware, hacker tools (such as password crackers, network sniffers, and keystroke loggers), remote administration tools, and tools used to initiate distributed denial of service (DDoS) attacks. Pests are generally uninvited programs that take up residence by stealth like parasites on an information system. A computer pest might be the instrument of hacking, covert data gathering, vandalism, cyberterrorism, commercial espionage, or employee sabotage. Alongside the public’s increased expectation for computer security is a call for enterprises and government to share security information. The new homeland security campaign encourages enterprises to report security vulnerabilities and incidents to private-sector Information Sharing and Analysis Centers, such as those serving the financial and high tech industries, and a proposed new Cyber Warning Intelligence Network. These information gathering groups help authorities spot and remedy patterns of Internet threat.

Corporate security policies should set aut procedures for collecting pest data and sharing it (or electing not to share it) with authorities. The logging and quarantine functions of pest detection software will make this process easier to undertake. A company should consider some issues before informing others about the discovery of pests on its system. Although sharing information with law enforcement or industry groups can help to fight computer crime, information shared the wrong way can come back to bite. The corporate security policy should address this subject in advance so as to assist quick decision-making

when an incident actually arises. Consider whether the disclosure of information will have any effect on the company's competitiveness. Will competitors who get wind of the information be able to use it to divine anything of value about your markets, financial condition, information systems, or corporate strategies? Will public revelation of a security breach (even if only a potential breach)

Unfortunately, most consumers - and many systems administrators - mistakenly believe that their antivirus software will deal with all malicious code. The result is pests going undetected. Software to remove pests does exist, however, and due diligence suggests that management ensure such software is implemented within their organizations. Some anti-pest software is specific to a certain class of pest, such as trojans. But there are now more advanced software solutions available to cover a much broader range of pests, including trojans, spyware, inappropriately installed vulnerability detection tools, DDoS agents, and more.

Finally I can say, the web has given an incredible bounty of convenient services to businesses and individuals, including the ability to buy plane tickets, books, or stocks, to track packages, and to research nearly any subject. The web continues to grow as a popular communication channel based on its great strengths: convenience, economics, omnipresence, and interoperability, to name a few. But as a business-building, or engineering tool, the web has one major weakness: the frequent frustration of customers. This breakdown makes it impossible for a company to meet its needs, in Hurst's words, to "develop brand, increase loyalty, and grow revenues." Even companies that spend hundreds of millions of dollars on advertising and on their websites generally fall short of seemingly simple goals like increasing web customer satisfaction, simplifying interactions, and fulfilling user objectives. Why? Organizational boundaries prevent the marketing, technology, and customer service organizations from collaborating effectively to give the customers a better experience.

3. THE INTERACTION ISSUES

Collaborative experiments (started with learning) approach has dealt primarily with standard, classroom-based environment, not web-based environment, which raised the question of web-based environment of how well the benefits of collaborative learning will translate to the web-based environment (Brandon, D. P., 1999). Collaborative experiments means that knowledge is not something that is 'delivered' to scientists or students, but rather something that emerges from active dialogue among those who seek to understand and apply concepts and techniques. Student-student and student- market interaction in collaborative learning communities may contribute to the achievement of educational goals by influencing educational motivation and aspirations through peer relationships (Hiltz, 1993; Johnson, 1981). The review panel and final jury would not have significant amounts of time to practice with the system. It needed to be straight-forward and easy to use. The reviewers needed a central dispatch point from which to access sites, and they needed to be able to file their

conclusions at the end of a review. Obviously, they needed to be able to navigate freely from one site to another, in order to get a general sense of the projects as a group, and they might well wish to review their evaluations as a group, or check the comments posted by other reviewers from time to time. Given the number of sites, and the sometimes slow connection speeds, it was desirable to minimize the time spent waiting for the dispatch page to reload. It was decided to implement the system as a console, keeping the page on screen. This constant presence would also serve as a visual anchor for reviewers, presenting one consistent element as they jumped from entry to entry.

Implementing the scoring console had another advantage as well. There was no way to anticipate the frame or window structures which the entry sites might utilize (via JavaScript, etc.). By opening each site in it's own window (see the right side of Figure 1), which could then be under complete control of the subject site, problems were avoided. The reviewers logged the results of their evaluations using as an HTML form. To keep the number of discrete windows on screen to a minimum, this form was presented as a frame within the console window (see Figure 1).

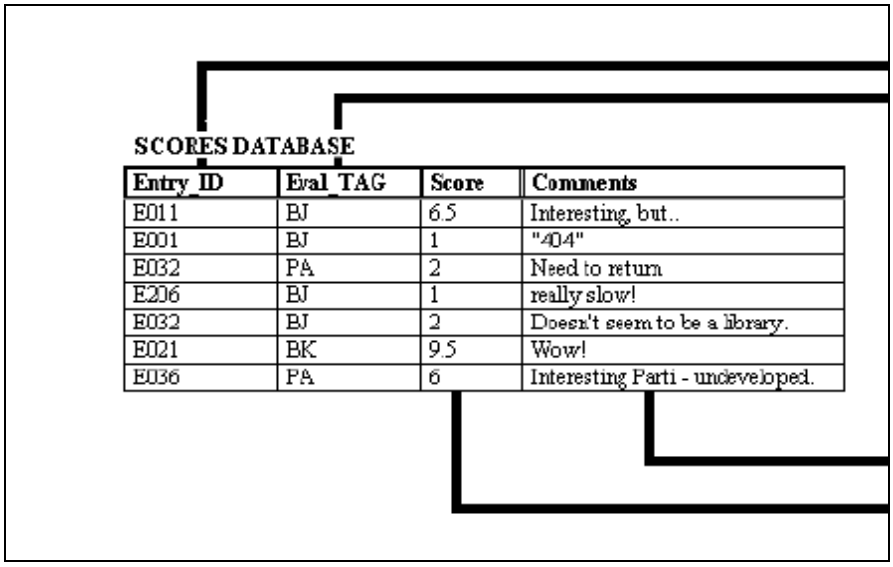

Figure 1

Finally, since site names were purposely simplistic and generic, reviewsers needed to be able to tell which sites they had reviewed and which not. In Figure 1, only site "E001" has not been visited by this reviewer, as shown by the plain (green) square in the "X" column. Record Keeping and Data Management Issues The scoring system would be online for several weeks. During this time it was possible that the server would suffer a hardware failure or that some unanticipated bug in the sofware would corrupt the database. We needed to be confident that the data was accurate.

The list of competition entries and reviewers was fixed at the start of the process (and were entered in the database directly), so the main task of the system was to record evaluations of entries submitted by reviewers, make those evaluations available to the reviewers to modify, and keep summary statistics up to date.

However, given the numbers of participants in the process, it was desirable to have a single channel through which to make the inevitable last-minute modifications. As discussed above, EVAL displays an omnipresent console to facilitate speedy navigation and aid in maintaining reviewer orientation. A simplified illustration of the distribution of screen area is shown in Figure 2, where areas 1 and 2 appear in one window, called the Eval Console, and area 3 is the competition entry window. This console is divided into two parts, an upper area (#1 in Figure 2) where different lists of data are displayed, and a lower area (#2 in Figure 2) where evaluation sheets are displayed. Whenever a score is recorded through use of the evaluation sheet, the upper window is refreshed so that it stays up-to-date.

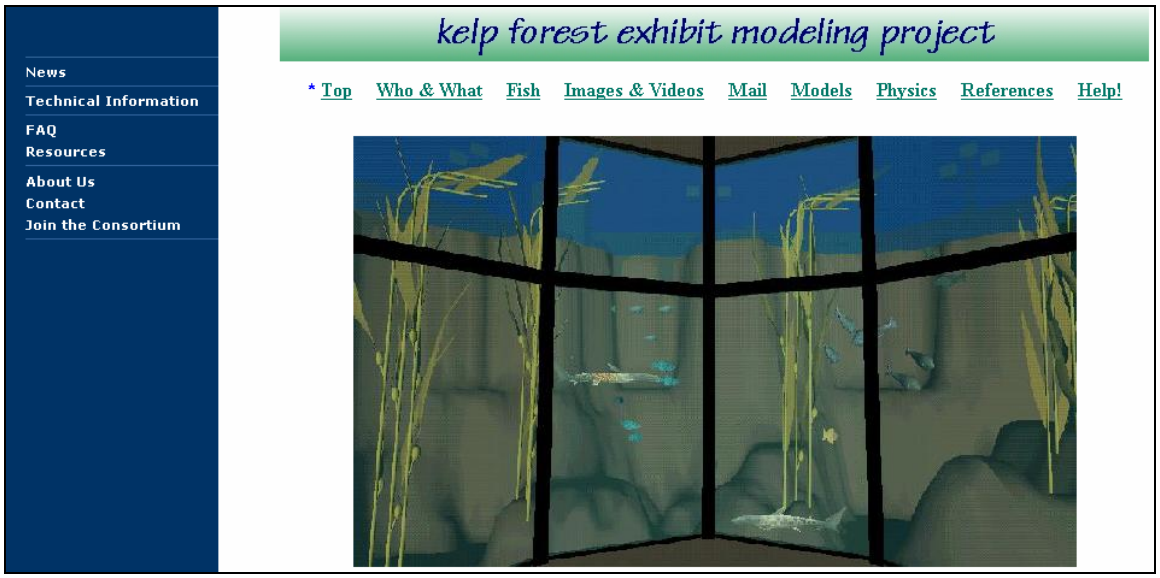

Figure 2

A well done link might be placed as in Figure 3.

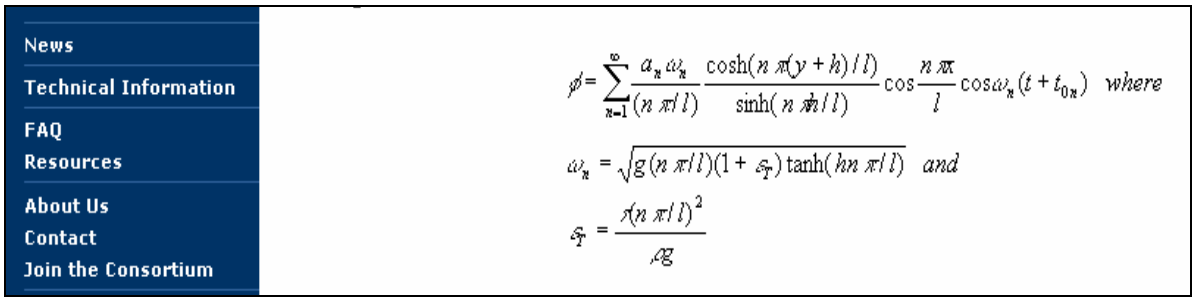

Figure 3

4. STRATEGIES AND PRINCIPLES OF SYSTEMATIC DESIGN

According to McConnell's (2000) experiences, the useful and important aspects of CSCL design includes openness in the educational process, but expecially in applying research technics – the learning community, self-determined learning, a real purpose in the cooperative process, a supportive learning environment, a collaborative assessment of learning, and assessment and evaluation of the ongoing learning process. The strategies and principles can be used in system design includes objective determining, research area and object, system function, investigation about user, control and monitor strategies, and evaluation strategies.

4.1. The framework Modelling

There are eight modules in WebICL system, which they are peer module, group module, interface module (peer and tutor), database module, curriculum knowledge module, evaluation module, tutor module, and CL tools module. The working mechanism and processes of each module is described as follows. When a user login through user *interface*, WebICL system will search his register account no in *student records database*. If his account is found, it will be used to search the learning history records from *student models database*, then the data of student model was acquired and sent them to *student grouping module*. If student's account no cannot be found in *student records database*, a new account no will be appended in the *student records database* when student finish his register form. Generally, when new student register in WebICL, he will ask to participate the pretest or psychological survey based on his knowledge background. The result of pretest or/and psychological survey and personal messages that come from register form will be used to form student model. Student learning history records or his new learning records are called nature data (ND), which it can be used to form student model and group model. This process can be simply described as figure 4.

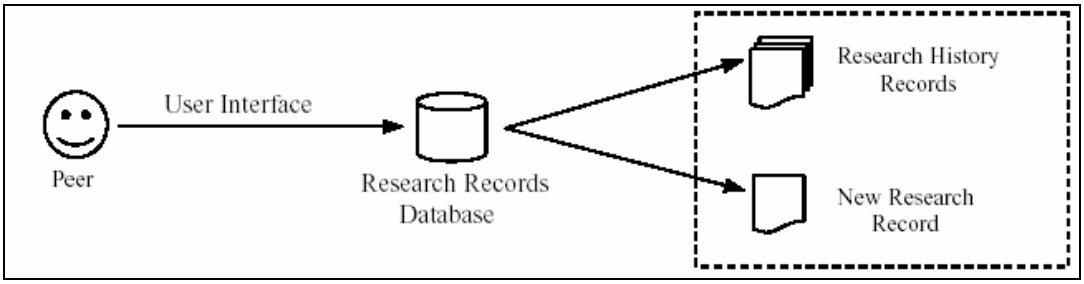

Figure 4

5. CONCLUSIONS

The first design competition was conceived as an event that would establish a marker against which future web-based competitions might be compared. Response to the competition indicates that it has. The international pool of entrants, using the web as both topic and medium, broke new ground in web-based presentation. The number of entries, the distributed review panel, and a narrow window of time for review all mandated development of an on-line system for managing the competition review process. While there is not as much direct feedback as we would like, we believe that this system demonstrated the value of an omnipresent evaluation console when navigating a complex set of web pages and interactions. Almost all reviewers were able to use the system without assistance from competition organizers. On the whole, we believe that the use of an evaluation vocabulary mapping a "verbal" evaluation to a score was successful in providing some standardization amongst reviewers. Certainly some reviewers had higher average scores than others, and there were discrepancies between reviewers, as might be expected.

6. REFERENCES

1. Inaba, A., Supnithi, T., Ikeda, M., Mizoguchi, R., and Toyoda, J. (2000). *Learning goal Ontology to Form Effective Learning Groups.* In proceedings of the International Workshop on New Technologies for Collaborative Learning. 27-29 Nov 2000, Kyoto, Japan.
2. Brandon, D. P. & Hollingshead, A. B. (1999). Collaborative Learning and computer-Supported Groups. *Communication Education.* Val. 48, pp. 109-126, Issue 2, ISSN 03634523.