The Continuous Education Solution for a Country Wide Telecommunication Company

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Abstract

Competition among companies has put up a challenge regarding training and development of human resources. In a country-wide company this challenge takes into account constant trainee traveling back and forth, so, generating costs. This paper presents a telecommunication development program that uses top of the available technology to broadcast synchronous classes, over a system with full motion images in real time. It uses a transmission rate as low as 2 Mbps, easily available almost everywhere, allowing training at remote sites with all of its advantages.

1. Introduction

Actually there are many education methodologies based upon new technologies, but a lot of them without satisfactory results evidences. The lack of knowledge about new applied education technologies and methodologies is one of the main problems among professionals who are not being prepared to use those tools to be competitive in this new globalized world.

Considering new education methods, associated to new technologies, one of the greatest challenges posted to instructors is keeping people motivated and using distance learning tools for actualization, focusing in the company business.

A decade ago, there were the first attempts in distance learning as a corporate tool [5], which means using various methods to reach and teach people who are widely dispersed geographically.

In practice, how is it possible ? What is the technology that can actually be counted on ? How is it implemented ? What methodology could be used for a Telecommunication Company environment ?

2. Methodology

This work refers to, as it is seen, the best-implemented solution until today in a Brazilian Telecommunication Company, that is seeking for continuous education for all of its employees scattered all over Brazilian ten states.

The methodology used for this system, counts on WEBTV resources, chat-room, a Teleeducation system with full audio and video interactivity, which allows the participant a total interactive environment with the instructor, minimizing the discomfort caused by the non presential situation.

As a solution for those challenges it was sought one that could put together management instruments, top of technology, new distance learning methodologies, allowing organizing culture dissemination and valorization of the enterprise human capital.

PEN BrT, which is Brasil Telecom’s Extension Program is a technical and institutional knowledge-recycling program, focused in training employees on technical and administrative areas, wherever the professionals are, and they are spread out all over the Country.

The program issues were selected to provide a basic formation oriented to the Company’s core business and the main departments internal processes, searching the improvement of quality service benchmarks.

At the end of the program, the participant is supposed to have a clearer idea of each activity importance in the company’s general context, reinforcing the value of cooperative work among involved areas.

The employees qualifying matrix, which was developed under training consultants orientation and their managers, showed training necessity.

According to the philosophy that the best Brasil Telecom’s company business specialists are their own employees [6], they themselves conduct the classes. This methodology increased competitive advantage that derived from having a well-trained workforce that is up-to-date on the entire latest trends, collaborating with one another and sharing information throughout the company.

The classes are filmed, recorded and broadcasted through the auditorium’s television system.

3. Technology

The Teleeducation system implemented at Brasil Telecom uses an audio and video network exclusively for training [1]. It is based on compressed video using a MPEG-2 algorithm that allows showing VHS quality images, in real time and using a bandwidth equivalent to an E1 channel at 2Mbps. This low transmission rate
allows using the public telecommunication network for this task. This bit rate is nowadays easily available and the backbone access can be made through a variety of means. It can be pointed out, as examples, coaxial cable, HDSL modems and twisted pair.

4. Distance Learning System

For those students who do not have a TV reception point nearby, it is possible to participate in classes through the WebTV system, since the web connection has a bandwidth larger than 300 KBPS with the main server so having an excellent audio and video quality. Through the WebTV class, students can watch the instructor, presentation slides, interacting with others participants and making questions through a chat-room

For distance learning classes, the interactivity with the instructor happens by e-mail, phone call and a chat-room provided in the course home page [2]. An instructor assistant receives questions and forward them to the instructor during classes.

At the beginning of each class, presental participants receive the training material which was made by the instructor in advance. For distance online learning participants, the slides can be downloaded directly through the PEN home page – [http://www.adc.crt.net.br/pen](http://www.adc.crt.net.br/pen), for watching, printing, or online consulting during the class as well as afterwards.

Recorded classes remain stored at the Company’s library for future references. Participants who could not watch a class can request the video tape from the main server so having an excellent audio and video quality. The video will reach the participant’s desk in less than three days, for home watching. After this, he proceeds to the PEN home page to fill out the on-line evaluation and reaction forms for attendance registration in a training database [3].

Questions will be answered by e-mail or phone call directly by the instructor, who is a company employee too, during work time.

Distance learners fill out the registration participation form directly on the PEN site. There is a suggestion box, where the students can leave messages for the organizing team who manages the program.

5. Results

Until now 2,653 students participated in this program that began in September 10, 2000 and is supposed to end by June 6, 2001.

The results obtained up to this date can be considered satisfactory; some questions have been pointed out such as new technology equipment handling and a little delay pertaining to the information flow in this system. With some practice instructor and students were able to overcome these characteristics of communication.

Through the reaction and opinion evaluation and interviews with students and their managers, it was indicated that this teaching methodology has reached an efficiency of 82 percent considered through the question tasks applied under the PEN web page after classes and acceptance of 98 percent measured by a reaction evaluation .

The low cost associated to commuting and also, the fact that the employee does not leave his post to go to classes, contribute to validate the investment in this methodology.

6. Conclusions

Actually, the on-line learners can, not only access their studies from remote locations using multimedia, but they can also build online communities [4], swapping questions and answers with their tutors, and fellow students via e-mail and a chat-room.

This online learning methodology can add up to presental learning to build a successful knowledge management system and using technology to leverage the intellectual capital of the entire company, which in turn, leads to increased productivity, shorter time to access new knowledge to the company, and a superior competitive advantage.

7. References


[3] Demo; Pedro; Questões para Teleducação; Editora Vozes; Petropolis, RJ; 1998.

