SUMMARY

MASS INFORMATION SYSTEM FOR TRAINING

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Introduction

Many Telecommunication organisations in the developing countries employ a large work-force. These employees are deployed at distant locations. Training of such large work-force in the conventional class rooms needs unlimited resources. This has resulted in a huge backlog of training. There is a need to explore new ways and means of training these employees by harnessing the potential of technological development. One such method is using Mass Information System (Mass IS)

Mass Information system is defined as a system that supports on-line information retrieval by way of self service for a great number of occasional users spread at different locations. The mass Information System (IS) can be administered by using different distribution networks viz. Internet, Videotext, Teletext, Radio Data System (RDS). Computer Assisted Instructions (CAI) or Computer Based Training (CBT) can be delivered using Mass IS. This paper describes a conceptual frame-work and guidelines for implementing a mass Information System for training needs of Telecommunication organisations using Teletext and RDS networks.

Goals of Mass IS based training

A number of researchers have described different goals for administering Mass IS services. For training needs, the goals are:

To save time and reduce cost of training.
To offer a better service round the clock and nationwide.
To get a service at a certain place or a certain time in most convenient way.
Elimination of bottle-necks in space and faculty through long journey.
Down loading of telesoftware.
Relief from the postal inquiries concerning courses, events, etc. by self-service of leaner by giving them direct access to data and information being regularly broadcast.

Probable Networks

The service could be operated with the cooperation of a number of network operators viz. TELCOS, Videotext operators or Broadcast organisations (television channels, teletext and RDS operators). Here Broadcast network will be described due to their economy and availability of end user terminal (TV) in every home.

Broadcast Networks

The attempts in increasing information broadcasting capability has resulted in the emergence of two systems for data broadcast. The first is Radio Data System (RDS), in which FM stations can broadcast data utilising its 57 KHz sub-carrier. RDS has many useful applications and has been used in several countries. The limitation of RDS is relatively low bit rate of 1187.5 bits per seconds. However, experiments are already ongoing to establish a high data rate transmission at 76 MHz of the FM baseband, at a bit rate of 16 to 19 kilo bits per second. Teletext is another data

broadcast service which transmits data in the vertical banking interval of the television programmes.

Teletext is a one way data broadcasting system supporting unlimited number of users. The advantage of this system is high data transmissions rates of 6.923 MB per second or over 600 pages per second.

Compression Standards

The Joint Photographic Expert Group (JPEG), the Consultative Committee on International Telephony and Telegraphy (CCITT) and the Moving Picture Expert Group (MPEG) have recommended the compression standards for still image, visual telephony and full motion pictures respectively. MPEG-2 requires 6 MB per second for Constant bit rate (CBR) for current TV picture. Application of Variable bit rate (VBR) methodology permits an average bit rate of 3MB per second or less with sufficient picture quality. This CBT which does not need the channel capacity of a full motion video needs much less bandwidth. As such it may be possible to deliver three courses or so of one hour duration in the same time period using teletext services.

Methodology

It is possible to compress the pictures and videos of CBT and transmit it using teletext system on time-sharing basis. The MPEG-2 playing capability is becoming a standard component of the new multimedia PCs. Such PCs may be available at the offices of majority of TELCOS or else a small room may be established where the learners can go and spend an allotted time in getting the knowledge and skills needed for their job using the work-station which receives the course material through such a Mass IS.

Terminal equipment.

The teletext /RDS signals can be received on conventional TV /Radio equipped with a decoder. As the broadcast technology develops, a "Set-top decoder" shall be available which shall be able to give output for a TV receiver, a PC or a Radio receiver. In such a case it will be possible to download the lesson to a printer.

Return link

This is one of the drawback of Teletext or RDS system. These are one-way delivery systems. As such, return link shall have to be a telephone line. However, one point to be remembered is that the course material or software provided could have embedded intelligence to answer most of the queries of the learner. It is also pertinent that most of the dialogue is from the teacher than the learner. However, for a truly interactive channel, videotext services could be preferred. Videotext systems have been used by Australian Universities for remote education.

Conclusion

The delivery of courses within the country using the Mass IS system is having distinct advantages. A concerted effort in this direction may go a long way in fulfilling the needs of those countries who have a huge backlog of training and need to train a large number of employees in a short time.