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KNOWLEDGE MANAGEMENT & ITS APPLICATIONS IN DISTANCE EDUCATION

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ABSTRACT

It is the digital economy age in which we are living presently. Thus, traditional thinking is proving futile and newer methods are substituting the older ones. If one has to achieve developmental goals, one has to build a knowledge repository. Success of any system today is defined by its knowledge capital. For example for a university, knowledge is a key sustainable edge and Faculty/students are their key assets.

Knowledge management (KM) can provide a university with an opportunity to integrate processes, facilitate collaboration, and form relationship across traditional organizational boundaries. It no longer stands that the most knowledgeable only will conquer; it has become that one who actually uses that knowledge will get the edge. KM provides the opportunities to rethink, recast and re-engineer.

Present communication tries to build a framework for open universities to effectively use KM to maintain relationships with existing students and attracting new students, build high-valued knowledge assets, build a knowledge based value-chain to respond to the changing demands for education

Keywords: Knowledge, Knowledge management (KM), knowledge assets, value.

INTRODUCTION

Sir Francis Bacon (1597) commented, "Knowledge is power". It is now that people are realizing the vision in the statement. As now everything seems to be knowledge-based. In distance education setup, intangible assets like information and services depend on knowledge for their production and distribution and tangible assets like learning materials, audio/videos etc depend on knowledge for their design, production and delivery.

These knowledge-based assets attract increasing returns e.g. if one prepares material for a new course to be offered to the learners then there is a significant cost incurred initially but subsequently it will be the printing cost later.

The value of these materials will only increase as their usage increases. So knowledge has made it possible to have a highly valued asset without incurring additional costs. In other words, one can say that knowledge has enabled one to create a new value, which will bring returns for a long time.

Now let us go further, suppose this course is launched and an analysis is done to identify who are the takers of that course. It is found that there is a huge clientele who is interested in courses of this type. So knowledge has enabled opening for a new market and enabled the decision makers to develop a new business model for this clientele. This is just the beginning of a knowledge-based process.

There are immense possibilities like offering a new program to the newly found clientele, probing the international market for that program, accomplishing learner satisfaction by offering them a program of their choice which nobody else offers etc. In fact it is the beginning of evolution of an intelligent organization that knows how to get competitive edge. Many of the processes, in the organizations offering distance education, are capable of triggering such scenarios. All this is possible because of a will to pursuit knowledge.

KNOWLEDGE MANAGEMENT

According to www.dictionary.com, knowledge is nothing but familiarity, awareness, or understanding gained through experience or study and management is the act, manner, or practice of managing; handling, supervision, or control. So any act or practice to handle your familiarities, understandings and awareness in a meaningful manner is knowledge management. Knowledge management is also concerned with finding new knowledge, propagate that knowledge and thus utilize it. Knowledge management (KM) has emerged from earlier buzzwords of computing like data processing, data management and information management.

Tiwana (2000) commented, "Knowledge management enables the creation, communication and application of knowledge of all kinds to achieve goals". According to Kidwell et al (2000), "there is tremendous value to higher education institutions that develop initiatives to share knowledge to achieve business objectives". Since educational institutes are also not spared from the global competition, it is essential that they sustain their competitive edge. Heinrichs & Lim (2003) postulated three unique prerequisites for sustaining competitive edge. According to them, these are good human resource, good learning culture and the use of information technology tools for effective knowledge management. Na Ubon & Kimble (2002) identified some common elements in knowledge management & online distance education. These common elements are formation of academic communities, building collaborations, building trusts in knowledge sharing and shared understanding among students. Time is not very far when only knowledge based business would prevail.

APPLICATION OF KNOWLEDGE MANAGEMENT IN DISTANCE EDUCATION

Sridharan & Kinshuk (2002) tried to find alternative ways of using knowledge management tools to support learners to leverage their learning. They tried to investigate what knowledge base structure is appropriate for the knowledge management in learning situation. Kidwell et al (2000) asserted that if knowledge management tools are applied effectively, they could result in "better decision-making capabilities, reduced product development cycle time (for example, curriculum development and research), improved academic and administrative services, and reduced costs".Liao S.-h. (2003) classified KM technologies in seven categories: KM framework, knowledge-based systems (KBS), data mining (DM), information and communication technology (ICT), artificial intelligence (AI)/expert systems (ES), database technology (DT), and modeling, together with their applications on different research and problem domains.

It is time that new approaches, like data mining and knowledge discovery open new avenues in distance education for understanding the phenomenon and more importantly in devising methods which will ensure better teaching and learning process. The table below depicts the possible application areas of Knowledge Management and Data Mining in Distance Education.

Table: 1
Application Areas of Knowledge management

sno	*Area*	Application Examples
1	Printing of Self-Instructional Course Material	Analyze data on printers/time taken in printing/allocation of work to printers.
2	Continuous Assessment - Assignments	Analyze marks region wise/ Compare them with Term-end component. Verify the payments made for assignment evaluation.
3	Admissions	Develop strategies to enroll new students, retain old students (create interest so that they join new programs).
4	Material Distribution - Stores	Decide what courses to be stored together (On the basis of Popular/Compulsory combinations), what to do with outdated or obsolete materials.
5	Coordination	Maintenance of employees records, etc.
6	Assessment Data	Check for trends in the marks obtained in assignment/ Project/ Term-end examinations.
7	Study/Teaching Methods	Identify words/concepts that need more efforts form the student, Text mining.
8	Demographic Studies	Analyze students on pre-admission data, data during their study and data on their views after passing out.
9	Course Combinations	Analyze students on the basis of the course combinations they take and its effect on their performance and also market acceptability.
10	Drop-outs & Students on Roll	Analyze these students to discover what has haunted them and what forces them to stay on rolls.

It is not very difficult to find applications of these seven categories with in the broader framework of Distance Education. For example, Saxena et al (2003) classified the learners on the basis of knowledge delivered by the student database. They have taken information on 19 student parameters and applied cluster analysis to segregate students in different clusters.

The aim of the study was to empower the decision support system with different sets of students for which the system has to think differently. Khare et al (2003, 2004) conducted three research studies for knowledge discoveries on distance learners.

These were on performance of IGNOU science graduates, student support network in Distance Education and performance science students in theory component.

Over a period, many Open and Distance Learning Institution (ODLI) have gathered huge quantities of student data, which, in certain areas, are maintained systematically (admissions, examinations, etc.) but in others, not so systematically (non-receipt of materials, counseling support, postal interactions, etc).

Today's knowledge society demands instant flow of information that is generally not available with the unsystematic database and thus institutions find it difficult to achieve intended goals.

Application of KM techniques and their validation to create a knowledge path needs to be examined in various areas of Open and Distance Learning Systems (ODLS). The areas are:

- **Study Material Development data related to pre-development surveys, need survey, availability of experts in the field, development time, and printing time.**
- **Student Registration data related to geographical distribution, academic program options, choice of medium, age, sex, etc.**
- **Support Services data related with learner support network, counselor identification, attendance of learner, student query, library, teleconference, audio-visual utilization, continuous assessment, cost of delivery, student feedback, etc.**
- **Study Material Production & Distribution data related with printing schedule and performance, course inventory management, predictive dispatch data mining, courseware distribution, management information systems, and maintenance database.**
- **Evaluation and Certification data related with term-end examination, evaluation of term-end and continuous assessments, evaluators database, certification database, quality assurance, etc.**

There do exist few initiatives towards this. For example, through EDUSAT, the first Indian satellite developed for the educational sector, IGNOU has expanded the educational facilities in the remote areas.

A national digital repository is being created by IGNOU, which contains the contents of all courses offered by IGNOU.

CONCLUSION

Today, world is full of data and the need is to use that data to find useful information that is hidden in the volumes. For example, thousands of students join the distance learning programs with different institutions and thus, become part of dataset. Each institution has a lot of pre-program data about these students but there are very few empirical studies, which highlights any useful insight into this data.

A lot has been done in the field of knowledge management in corporate sectors for enhancing marketing or to understand the psychology of buyers. But in educational research, the concepts of knowledge management are yet to be exploited. The

components of pedagogy, listed above, generate and accumulate data with completion of each academic cycle.

This accumulated data may not be sufficient to obtain knowledge that can improve decision support system. Still, the quantum is sufficient to understand the learners, learning styles and learning environments. Unfortunately, distance education institutions are not exploring the possibilities of using the available datasets as is done in commercial sector. The patterns, associations, or relationships among all these data can provide information for better functioning of ODLIs by converting the datasets into knowledge about past patterns and future trends.

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