Cloud Computing for Regional Services in Open Schooling

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Abstract:

Regional Services are an important part of an open and distance learning system. The National Institute of Open Schooling (NIOS) is a national institute in India providing school education and a host of Vocational and life enrichment programs through open learning mode. The Regional Services of NIOS are always overburdened with a lot of work related to propagation of open schooling, admissions, examinations, programs and research, and administration and accounts. Regional Services need to work closely with the study Centers and the headquarters to fulfill their responsibilities. Often the regional services are poorly staffed and work suffers a great deal because of non-availability of professional staff leading to stress related diseases to the Regional Directors.
In order to strengthen the services at the Regional Center, which requires attending to the problems of the students and supporting activities and at the Study Centers, and other related work involving collection of data, data entry, checking of data, communications with learners and study center coordinator, etc., one of the Regional Centers of NIOS experimented with cloud computing in the area of data entry, checking of data, preparation of database, automation of work, management of task at the Regional Center, supporting study Centers in their working, supporting learners with their problems etc. This paper discussed various issues and possibilities with the use of cloud computing in the management of regional services in open schooling.

Paper:

The Cloud Computing

The Cloud computing is the next stage in the evolution of Internet. It provides means through which computing services can be delivered to the user wherever and whenever those are required. These may include computing power to computing infrastructure, applications, business processes, and personal collaboration, etc. The term 'cloud' in cloud computing is defined as a set of hardware, networks, storage, services, and interfaces which combine to deliver various aspects of computing as a service. Several companies, including big players in the field, are now providing cloud services at a reasonable cost. These include delivery of software, infrastructure, and storage over the Internet.

Open Schooling

Open schooling now stands for a system of education where school level education is provided to desirous people using distance and open learning modes. These have become very important part of the education system now, especially in the developing counties, and are providing learning opportunities to large number of people without the need of multiplying the infrastructure. One such example is the National Institute of Open Schooling (NIOS) in India, which provides complete schooling to people, including several vocational programs. Every year it admits more than 400,000 students, examine them, and certified. In an open schooling system, the learner, learns using the self-learning material provided by the Institute, some amount of support is provided through the personal contact programs, and multimedia programs. The NIOS essentially operates through its several regional centres, and study centres. The regional centres are set up by the NIOS using its own resources and funds, whereas the study centres are set up normally at an existing school. This way the already available infrastructure of a school, including their teachers and non-teaching staff, are used to provide educational facilities and support to the learners of open schooling. The school staff work for NIOS on part-time basis, and are compensated for this job.

Regional Services in open schooling

The regional services in the system of open schooling is an integral and very important part in offering of services which is the case in any distance and open learning institution. They are called regional centres or regional

offices. They provide an important link between their institutions and study centres/learners.

The regional centres are often entrusted with the responsibilities of propagation of programs, publicity, liaison with State government, supporting study centres, admission of learners, providing student support services, organising personal contact programs, collecting examination form and free, supporting conduct of examination, appointing various functionaries for monitoring of various activities such as personal contact programs, conduct of examinations, evaluation of answer books, and preparation of results, translation of learning material, budget and payments, etc.

It may be construed that often the regional offices are overburdened with work. It is also a fact that most of the time, the regional offices are poorly staffed both in terms of number and caliber. As such, the demand is too much and resources are not sufficient to fulfill the demand. That is the reason, one will often learn from various stakeholders of open schooling that the regional Centre staff do not pick up calls, or there they do not respond to letters, emails, etc., and the work is often delayed at the regional centres.

The open schooling is often propagated with very attractive slogans such as education at your door step, flexible education, education when you want, education as to your convenience, learner friendly education, etc. However, with the poor services, several of the students of open schooling leave their learning on the way.

The question is, can the facilities provided by the cloud computing come to the rescue of regional services so that those are carried out in time and with quality. In order to find an answer to this question, we need to first of all know the requirement of a regional services in open schooling.

Requirements of a Regional Services

Normally, a regional centre has following requirements, coupled with the needs of its stakeholders, namely the study centres, learners, and the headquarters of open schooling system. Let us discuss these requirements, one after the other.

Sharing of software:

A major requirement an open schooling system is management of a database. It includes the database of admission, examination, study centres, resource persons, staff, etc. Most of that time, the regional services are seen struggling with preparing of and collecting data from study centres, validating it, forwarding it to its headquarters, and updating the data as per the instructions of the headquarters. It has also seen that while collecting the data from the study centres often they come in several formats, and forms. There could be hard copies, soft copies in different forms such as pdf, word file, excel file, dbf file, and it becomes a daunting task for the regional services to handle the data. Most of the time the data has to be re-entered and the entire process to be repeated. Therefore, one of the requirements of the regional services is that they share common software with the study centre and the headquarters. This sharing will facilitate the working of all the functionaries at all the points in a great deal.

Access:

The regional services, and other stakeholders need to access various information, and data from time to time. This includes the admission data, examinations data, learners' photographs, the database of correction cases, requests for change of subjects, or additional subjects, various office orders, communications sent to and fro between all these people. Most of the time all these are done on paper and stored in files retrieving of which takes a lots of time and energy. If the database and related information are stored properly and systematically, it will ease the life of everyone involved in this work. If a student has to know about his admission, or examination status he/she should be able to find it at the website. Similarly, if the admission has taken place by a candidate, the information should immediately flow among headquarters, regional services, study centre, and the student. If a study centre wish to know the result of their students in several examinations, or their admissions in several admission sessions, it should be able to have it with ease.

Collaboration:

Often various stakeholders in the regional services needs to collaborate with each other in order to complete the work quickly and efficiently. An example may be registration of students for examination. Normally, in an open schooling system, the student has to register for an examination and pay a fee. Fee is not collected in advance as the learner is given a choice to choose their examination papers and time. This is being done at the

study centre. The study centre, then compile the data and sends it to regional offices. The regional offices compile the data of all the study centres and sends it to the headquarters. Headquarters validates the data and most of the time send them back to the regional centres for update. This entire process takes lots of time and resources of the open schooling. if, for example, a platform is created where either the student, or the study centre or both may enter the data for examination, which itself is able to validate the data in terms of any issue of subject not available in the admission or the candidate not eligible for taking an examination, etc. and does not allow a wrong entry to be performed, the tedious process of validating the data by the headquarters and correcting it with the help of regional centre where the files are exchanged several times, the entire process could be simplified and errors may be minimized. Further, a mechanism may be developed that as soon as the data is entered in platform by the candidate or the study centre, the same should be made available to the regional office, and the headquarters for further processing. There could also be mechanism that the entered data is merged and/or segregated by the program and presented to the staff for further working. This program, then be able to generate various necessary items for the examination, for example, list of eligible candidates, list of examination centres, hall tickets for the candidates, candidates' attendance sheet, budget for the examination, advance money to be sent to the examination centres, and so on. This way, a small program and a common platform will be able to save lots of resources and time and would be able to efficiently and accurately create various forms and lists for examination work.

It is also a very common feature in a regional office that their regional officer dictates a letter or document to his or her personal assistant, she types it out, prints a draft, which goes to the regional director for correction/s, corrections are carried out, final draft is seen by the regional director, and after several drafts, the letter is finally printed. If, however, several people are able to work on the same file simultaneously, for example, on an online facility such as Google docs, Dropbox, or Microsoft 365, lots of time in checking and correcting drafts can be saved and the time taken for the final printout can be drastically reduced, and also several of our trees can be saved.

Storage:

Storage is another important area requiring attention of the regional services. It is not uncommon for the Regional Director to hear from his/her staff that the computer has broken down, or the file got corrupted or they forgot to back up the file, etc. In this situation, the Regional Director can't do anything but pulling his hairs. A place for storage of various data will sort out all these and several other problems, and add to the facility to access data without putting much energy and time for it. The large data, for example, the photographs of the candidates can also be accessed from this place and used for various tasks, such as making identity card, or examination intimation letters. This space can also serve the purpose of archiving various important documents and may be accessed by search facilities, etc.

Communication:

Communication is yet another area where regional services needs to be strengthened. The regional services receives communications from various parties, and communicate with several people. Many of these communications are routine in nature, for example, sending information to study centres about programs and activities, sending intimations to students about examination and admission dates, and for personal contact programs, etc. These can be very well automated using a software. There are also several other communications which can be automated either through the website, or by way of integrating email, SMS, e-newsletters, etc. If a suitable system is devised in the area of communication, several problems of non-responsiveness of regional services can be minimized and there would be happy study centres, and learners around.

Monitoring:

Regional centres has to do a lot of monitoring in various areas. Simple example is, it needs to monitor about a communication received in the office. There is a need to record the communication, record any discussion taken place on the communication, record the action taken, record the progress of work, and so on. Normally, this is also a weak area at the regional services. This is the reason that one finds complaints from students, study centres, etc. that the regional centre does not pick up calls or they do not respond to the letters. If effect, monitoring needs to be done for all communications, and other tasks. This area can be automated and stored for easy retrieval. This can again generate letters, emails and SMS etc. in order to communicate the outcome of the matter to the sender of the

communication. Further, there may be a possibility that all this may be stored on the website, and the sender may be able to check the progress of the case by way of entering their names or any other reference number, etc.

There could be several other applications to strengthen the system and make it more user friendly, e.g. attendance of the students at the study centres, distribution of learning material, distribution of identity cards, payment to various functionaries of open schooling system, budgets and expenditure, setting up of study centres, translation of learning material, evaluation of answer books, can be systematized and effectively monitored.

Does the Cloud Computing has an Answer

If we check the requirements of regional services vis-a-vis offerings of the cloud computing system, we can very well see that all these can be met with the facilities of a cloud computing, it may even surpass their requirements. From the proposition of common software, common platform, collaboration among staff, systems for admissions and examinations, monitoring, uniformity of work, access for information, storage, communication, etc., the cloud computing can provide solutions to open schooling regional services, and if implemented properly, the offerings and services of open schooling system can be improved a great deal and this will leave a very satisfied and happy staff at the study centres, and learners where this kind non-academic obstacles will not hinder the progress of learning of a learner, which is the main objective of the open schooling system. To take a simple example, if the learner has the facility to find out about his or her peers learners in their vicinity, there may be a possibility that they form a self-help group and can learn together or better performance.