

THE DISCUSSION ON BANKING SYSTEM IN RURAL AREA THROUGH CLOUD COMPUTING

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Introduction

Cooperative banks leverage banking software with a prefixed monthly cost eliminating the need to purchase the banking software or make huge investments for setting up data centers. Cooperative banks are responsible for the infrastructure facilities within their branches, head office and other service outlets (PCs, printers, branch servers, UPS, LAN, switch, etc.) along with regular maintenance. For the data centers and disaster recovery centers, NABARD partners with technology providers including Net App by deploying Net App FAS storage systems as a private cloud. Harnessing the power of its patented Net App Data storage operating system, the FAS storage systems simplify data management across the CBS platform from the local office to the data center to the cloud. The systems integrate the latest flash, networking, and processor technology innovations while offering advanced storage and data management capabilities including de-duplication, Snapshot, Snap Mirror and Snap Manager.

“We cannot stress enough about the importance of the core banking platform to rural cooperative banks and NABARD. Through CBS we have been able to reach out to India’s rural sector and through the deployment of Net App’s solution in the project, being implemented by leading IT vendors; we have taken a step closer in achieving our goal of financial inclusion in India. We are expecting that implementation of CBS will also help in freeing staff time, allowing them to focus on serving customers better and winning new customers”.

According to the research, Indian **banks** must compulsorily open at least one-fourth of their incremental branches in rural areas. However, the high cost of operations in rural areas mean that profit from this business is hard to come by until now. The research says that going ahead, as these branches develop economies of scale, increase use of technology and use low-cost channels like banking correspondents, profits will start coming in.

It sees a lot of potential in **technologies** such as cloud computing, mobile and virtualization alongside low-cost channels such as business correspondents who augment business per branch in the coming months.

The researchers estimate that the cost per transaction in rural branches is Rs.100-110, higher than the Rs. 70-85 it costs per transaction in non-rural areas. However, business correspondents who operate with hand-held devices or through small stores in rural areas, enables a transaction at a 15th of the cost of a branch.

While business correspondents are currently used mainly for liability-based transactions such as deposits and payments related ones and contribute to 8-13% of total liability-based rural transactions, the proportion could well touch 25-30% in the next few years.

At present, however, for most business correspondents in rural areas, this business is typically a side business. “They are either grocery shop farmers who are also members of a panchayat; and so, the compensation given to them by banks or corporate business correspondents is not their only source of income. Therefore it sees that the model can be sustainable even though the remuneration is relatively lower.

It estimates that the number of transactions through banking correspondents will increase to 752 million by fiscal 2018-19 up from 329 million in fiscal 2013-14 as cost of transactions fall. By 2018-19, the report says that rural banking will outpace overall business growth with economies of scale bringing about a reduction in the overall operational costs.

Education System in India – Primary Schools, Secondary Schools, Colleges and Universities

In India, government sector and the private sector provide education. Both the union government and the state government control the education in India. Indian education system is divided into different levels such as pre-primary level, primary level, middle school level and high school level education, secondary education. In Indian school education system, the National Council of Educational Research and Training (NCERT) is the apex body for curriculum- related matters. The NCERT provides support and technical assistance to a number of

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schools in India. In India, the various curriculum bodies governing school education system are: The state government boards, in which the majority of Indian children are enrolled; the Central Board of Secondary Education (CBSE) board; the Council for the Indian School Certificate Examinations (ICSE); All these boards have their own standards of education. In rural and urban education, the standards are varying. Following section briefs the rural school education.

Rural School Education System

In India, while condition of some of the rural school is still improving, the financial conditions of these rural schools are not good. There are few schools in rural areas where students have to walk/travel far away distances to avail school facilities. Some of the rural schools do not have proper infrastructure. Rural schools need proper and adequate education facilities. Rural students need direction and guidance in learning. They don't have direction to choose the study, knowledge and subject materials. Rural students are quite enthusiastic and hard working in nature. If efforts are made in right direction, then drastic development can automatically happen in rural areas.

We expect, every rural and rural education system should have the following:

- i) Sufficient number of schools
- ii) Good transportation facilities to avoid children walking miles to reach the schools.
- iii) Basic amenities like drinking water and
- iv) Advanced education
- v) Computer education and computer training.
- vi) Group classes should be taken by using video conferencing and audio conferencing
- vii) The teachers should get facilities with tools like laptops, printers to provide notes and other important notices to the children
- viii) Better infrastructure as sometimes children are even made to sit on the floor due to non-availability of furniture.
- ix) Computer aided teaching.

Involving rural children in other learning activities like analytical, problem-solving, decision making, sports, co-curricular activities and competitions. Such events and activities tend to help in the overall development of the children. Figure shows the expected rural school infrastructure Some other identified needs for improving the rural education systems are :

- i) Quality education and adequate study materials
- ii) Expert guidance in learning

- iii) Sharing the knowledge about recent trends and opportunities
- iv) Exposure of modern world and
- v) Proper guidance towards pursuing job- oriented courses
- vi) On-demand knowledge.

In reported rural schools problems are:

- i) Lack of money
- ii) Lack of infrastructure
- iii) Ambiguity in selecting the study materials
- iv) Proper direction towards learning
- v) Lack of qualified Indians in Indian education
- vi) Differing expectations of education programs
- vii) Lack of involvement and control of educational matters
- viii) Difficulties of students in higher education and
- ix) Far too many instant-Indian education experts.

Cloud Computing Technologies for Rural Education

Virtualization is a foundation for cloud computing technology. This technology provides software, hardware, infrastructure and storage as services. Cloud DSaaS and IaaS are especially suitable for rural application. Data Storage as a Service - A teaching database can be established making modern network of teaching resource and digital library building from where many can learn. The cloud can contain online e-books, teaching materials, directions, courseware and various educational videos etc. Infrastructure as a service: To avail various operating systems environment, network and storages. Many services can be provided by the school clouds system such as: online videos, course material, interactive learning games, online training, presentation etc.



Figure: overview model of cloud access

Cloud technology implementation flow for rural school education

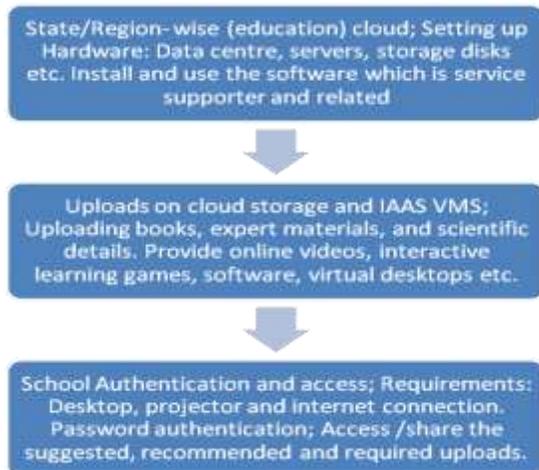


Figure : Cloud computing at rural education

Figure shows how the storage and infrastructure can be accessed by rural schools system over internet. Figure shows the flow of installation of cloud for rural school education systems. First step is a creation of storage and infrastructure. Second step is to upload the materials by expert and create infrastructure which are adequate to rural schools. Finally, provide those services to rural schools. At rural school end, teacher can access these services over internet. They can present to the students. Using above virtualized/cloud computing approach, we can overcome the problems of rural school education system by providing demand Digitized books, expert materials, scientific experiment details, On-line teaching videos, interactive learning games, software, virtual desktops, applications, huge storage etc.

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