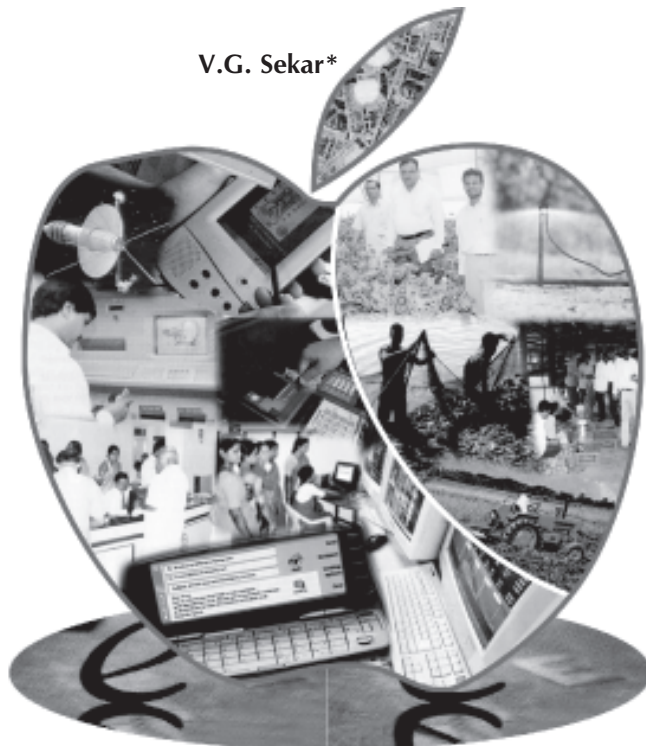


ICT- based Extension of Formal Financial Services to Rural India

V.G. Sekar*



“Everything should be made as simple as possible, but not simpler”

... Albert Einstein

The Need

It is a paradox that the predominantly agrarian Indian economy is languishing with a GDP growth rate of hardly about 2-3% from the agricultural sector while the overall GDP growth rate for the year 2005-06 is estimated to be about 8%.¹ While virtually the rest of the economy has started roaring for some years now, agriculture chugs along with its all too familiar huffs and puffs. The problems in hand are aplenty. The vagaries of weather seem to haunt time and again, the cropping patterns and technologies have not shown dynamism, support prices and subsidies have not provided any lasting solution and the formal financial sector is yet to reach out to the needy in a big way. Despite an impressive expansion of the banking sector to rural areas constituting about 48% of their total branches, hardly 18.4% of the rural populace have deposits in the scheduled banks while the lending

coverage was even less at 17.2%.² The rural poor continue to be mired in their poverty and the widening chasm between the haves and have-nots has been a cause of serious concern. Further, the glaring differences in development between the rural and urban regions need to be addressed on a priority basis. Any long-term solution should be all encompassing and involves both the financial and the so-called ‘credit plus’ approach to take care of the overall growth requirements of the rural region.

Constraints

The travails of the rural areas have been well documented. Out of more than 6 lakh villages, about 1.1 lakh villages are yet to be electrified. Even the power supply in most of the electrified villages is fickle. Decent road and rail connectivity to a huge number of villages has remained only as a pipe dream. The provision for storage of produce to enable competitive pricing is neither adequate nor effective. Telecommunication, despite some improvement in recent years, has also been a weak link. When we add the deficiencies in education and healthcare systems, the picture is complete. Here lives a totally different society with largely unfulfilled social needs.

The Traditional Approach

The traditional wisdom may indicate that vertical approach - satisfaction of basic requirements in a hierarchical manner - may be the only ‘road’ (literally speaking) to ensure development. One of the basic principles of science comes handy here. You don’t arrive at some conclusion just by eliminating some known hypotheses. It requires objective analysis and summing up of the truths to get to the solution. The sheer volume and scale of the developmental needs

* Member of Faculty, College of Agricultural Banking, Reserve Bank of India, Pune

of the rural India call for such lateral thinking to come up with some out-of-the-box solutions. In other words, the constraints in infrastructure should be viewed as matters of fact in the short-medium terms and innovative means of overcoming these challenges need to be thought of. Once this is well understood, perhaps sky is the limit when it comes to dealing with the problems head on. For example, if one thinks that an ICT-based solution should only provide 24x7 services, the limitation of power looms large against the practical implementation of such a proposition. Actually, it need not be so. First, there are some simple solutions like PDA, laptops, etc. that work on battery power and second, it may even be sufficient if the service is offered for a limited time window during the working hours of a bank. There are enough implementations to suggest that solar or bio-energy may be tapped to a good extent. In fact, there are cases of implementations in Siam using battery power charged by simple pedalling equipments. As for telecom bottlenecks, we may cite the initiative of Nex-G Systems, a Singapore-based company, which has reportedly won a deal to provide "smart" solar powered lampposts to Cameroon. The proposal is to have centrally controlled lamp posts that also enable WiFi connectivity to internet³. Besides, there are several wireless solutions available these days with varying bandwidths. The various studies on the e-governance initiatives of different states of our country indicate that among the most popular services dispensed are the facilities to download application forms for purposes like birth certificate, driving license, etc. A closer look at these services would reveal that the contents in these cases are not dynamic and may need only occasional updates. Therefore, always-on connectivity is not

a prerequisite in several cases. As for the banking or insurance industry, comparable services may include provision of information about various deposit, loan and insurance products and application forms for accessing them. These details may be updated as and when necessary by either need-based connectivity or by even using offline solutions such as compact disks.

The Khan Committee, appointed by RBI, had recommended adoption of solutions based on information and communication technology (ICT) for reaching out to the masses in the rural areas. At first glance, the traditional approach described earlier in this paper, would make one shrug and view it sceptically given the basic infrastructural constraints in the rural region. They may even be able to cite several failed experiments using ICT to support their claims and notions. The best answer to these misleading 'interpretations' based on isolated experiments lies in demonstrating the successful ICT-based business models.

Demystifying ICT

When we talk about use of ICT, the first thing which comes to mind is probably a stand alone or a networked computer system requiring direct interface by the people. No doubt, such a situation would appear to be an illusion given the poor literacy levels in general and more particularly so when it comes to operating a computer system. These are misplaced fallacies. For one thing, to use ICT-based solutions, one does not need to know anything further than what one knows today (we will explain this later i by citing certain examples). Second, an 'ICT-based' solution does not necessarily mean an end-to-end sophisticated IT-environment. It is a common knowledge that one of the major causes of price disparities between two similar markets is lack of

communication. To illustrate the point, we may cite the case of the fishermen on the Malabar coast who were selling fish at different landing points (only a few miles apart from each other) at a highly fluctuating and wide price band due to unknown demand-supply factors. A simple solution in the form of mobile handsets provided to the fishermen and the market agents at the landing points ensured price equilibrium across these landing points. The point being made is that an ICT oriented solution does not necessarily require elaborate and complex technologies. The Village Knowledge Centres (VKC) of the M.S. Swaminathan Research Foundation (MSSRF), Chennai provide another example of effective use of ICT solutions. On learning about the impending tsunami disaster through the web-based solutions, the VKCs averted, to a large extent, disaster in villages around Pondicherry by using the public address system. They also use local language journals, community radio, notice boards, etc. in the public places for communicating to the local people. In other words, the last leg communication need not necessarily be IT based.

Technology Options

The IT revolution since the past decade has reshaped the world's landscape. The limitation is not technology any longer; it has got to do more with the selection of 'appropriate' technology. When we say appropriate technology, we talk in terms of its suitability for an organisation given the infrastructural, operational and cost constraints, the business niche of the implementing organisation, the area, nature and size of its operations, business model, organisational culture and skill levels of its employees as well as the clientele. The ICT solutions, obviously, have two facets – one involving capture and retrieving of data and the other for

communication. As for branch automation, nowadays there are several cost-effective hardware and software thin-client solutions available in the market that are rugged and not so power intensive. ICT solutions for the customers can be community based (such as a telecentre with an information kiosk) or individual oriented solutions. To name a few, we may cite the examples of low cost ATMs being developed under the aegis of IIT, Chennai, the Simputer - a brain child of the Indian Institute of Science, Bangalore - an affordable simple computer with capability to communicate through wireless handsets, laptop computers with secure

technologies and their comparative features is beyond the scope of this article.

The Extended Enterprise

An important aspect not to be missed here is that today, more than ever, we no longer live in isolation. This is even more so in the case of most of the organisations that depend on their suppliers, customers, maintenance agencies, etc. A technology savvy institution is actually an extended enterprise and if it is oblivious to the happenings around the interfacing agencies, it can only be at its own peril. This aside, a financial institution may have to be constantly on vigil to survive.

played by the informal financiers, who has no interest whatsoever in the affairs of the borrowers except 'banking' on their collaterals. As per Basel II compliance requirements, in the context of emphasis on various kinds of risks faced by the banks which includes credit risk, banks may have to, per force, maintain the risk profile of the borrowers for which technology can be an invaluable aid.

Experiences Using ICT

A review of some well known experiments shows that there have been both reasonable successes and failures. Unfortunately, there is hardly any single platform where these experiences are shared. This leads to unnecessary wastage of resources and time by different players who reinvent the same wheel oblivious of the experiences of

Take for example, the borrowers of a bank. It is in the



Bluetooth connectivity to the bank system, simple hand held devices for spot billing or issue of receipts, mobile handsets to avail of multiple services or even the simple Personal Digital Assistant (PDA) which can aid in organising the field visits and serving as a ready-reckoner, smart cards that do not require always-on connectivity, etc. In short, at the current levels of telecom and power bottlenecks in our rural regions, wireless solutions with suitable in-built security features and needing minimal power would be the best possible solutions for extending the outreach of financial services. An in-depth discussion of various

interest of the bank to verify the availability of (and, if possible, aid in providing) timely and accurate information on competitive prices for raw materials as well as outputs, weather, insurance, cattle and crop diseases, etc. for the borrowers. It may even be beneficial to provide parallel and/or self-monitoring and accounting tools to different sections of borrowers like Self Help Groups. If a bank continues to conduct its operations as it has been used to over the years, ignoring these changing dynamics, it would require self introspection on its role vis-a-vis the role

others. Such isolated implementations, more often than not, tend to be mere experiments in the long run with no real benefit of actual implementations accruing. The need of the hour, therefore, is to take the initiative towards providing a solution for dissemination of experiences by different agencies. Ideally, a consortium of various players such as micro-finance agencies and banks should take the lead in this regard. The information may be shared easily through inexpensive web-based solutions that are available these days.

Business Model

A prime mover of a viable solution is not technology, though a tad surprising it may seem to be. It is actually the business model, the architecture for using the chosen technology platform in a well-thought out manner, which drives the solution. For example, when we think of the kiosk-based solution, several questions spring up. What

should be the cost of the solution, who will be owning it, how will it be accessed by the stakeholders, how shall the access charges be determined, what are the items that would constitute the information content, who will be responsible for the content creation, what are the agencies that would support the content creation, who are the technology and training providers,

what are to be the static and dynamic contents, how to ensure both online and offline updation of the contents in a feasible manner and so on. The two relatively successful business models that spring up to mind immediately are the e-choupal model adopted by ITC (see box item 1) and the n-Logue (see box item 2) model conceived with support from the TeNet group of IIT,

Box Item 1 : ITC's e-Choupal Business Model

The ITC's business model is an example of well conceived end-to-end solution architecture with a win-win potential for all involved right from the farmer to the ITC. The project was started in 2001 with the objective of facilitating the direct access to soya procurement supply chain using information technology. The model provided for supply of information through internet to the farmers so that they do not need to pay hefty premium for such services to the intermediaries who neither produce nor procure for further processing. The technology interface of the model involves installation of internet connectivity - this is called the e-choupal - either through the existing telecom lines or via V-Sat at the premises of a "Sanchalak" who is usually a respected person at the village level.

The Sanchalak provides spot quotation for the produce of the farmers after examining them vis-à-vis the relevant quotes by

ITC propagated through the net. If the farmers are satisfied with the quote, they take the produce to the nearest collection centre of ITC where transactions are completed in a matter of a few hours. The Sanchalaks are paid a 0.5% commission for the collections originated from their choupal. An intermediary called the "Samyojak" co-ordinates the group of farmers, aids in documentation and provides/collects farm inputs/outputs as well as details of their prices in the nearby mandis to ITC for dissemination. They are remunerated suitably for the rendered services. A closer look at the model would reveal that it has re-intermediated some of the existing intermediaries rather than aiming at de-intermediation. No wonder, the business model has emerged successful by providing a one-stop solution using ICT to the farmers even while fruitfully availing of the services of intermediaries.

Box Item 2 : The n-Logue Business Model

The n-Logue Communications (P) Ltd., is a company incubated by the Telecommunications and Computer Network (TeNeT) Group of the IIT, Chennai to serve the rural poor by providing cost-effective communication technology to the rural poor. A Wireless in Local Loop (WLL) technology called corDECT has been jointly designed by TeNeT Group, Midas Communications and Analog devices, USA to provide affordable, simultaneous voice and internet connectivity. The village level node can be powered by 12 v mains or solar panel with a built-in battery charger with standby provision upto 16 hours. The node aids in linking the villagers to the outside world for voice and internet two-way communications. The DECT Interface Unit, Base stations and Remote Access Switch (RAS) are among the components of the technology to provide interface with the public telephone and IP network using leased line.

It may be observed from the described system architecture that there is need for three layers to facilitate providing local services.

Foundation level agencies like system vendors and content suppliers like Government and NGOs – all co-ordinated by n-Logue. Franchised local service providers at the middle level to provide the access point services to individual kiosks across different villages in the region and, finally, the village-level kiosk operators. The kiosks may also be located in the premises of post offices, schools, NGOs or other public sites. n-Logue provides training and technical support for introduction and maintenance of the services. The kiosk operator can charge the public for accessing the services like information and advice on crop/cattle diseases, input prices, suggested cropping patterns, output prices, weather reports, e-governance/telephone/e-mail/computer training and other such services. In turn, for the connectivity services provided by the LSP, he would be required to pay the access charges. The LSP shares the revenue with n-Logue for providing the start up and maintenance services.

Chennai. Presently, Microsoft India is doing a pilot project called 'Ganaseva' covering a part of Karnataka broadly based on the grid-model (see box item 3) propounded and guided under the aegis of the Indian Institute of Information Technology, Bangalore.

Though each of the cited business models seems, and indeed is, different in its design and implementation, one message comes out loud and clear. If an implementation has to be successful, it should be both affordable and sustainable on its own. In other words, freebie solutions will make no commercial sense and they are prone to failures sooner than later. A viable solution depends on the delicate design of the matrix of cost and convenience for the different players, be it the customers, the financial institutions or the facilitating intermediaries.

Suggested Approach

Given the complexity of the issue at hand, there is no one-size-fit-all solution. The first thing which needs to

be remembered is that ICT by itself is only a tool, though an effective one at that, and it is not a panacea to all the ills facing the rural economy. In other words, the process of development is initiated by devising an appropriate business strategy which can be supported by a suitable ICT-based solution and not vice versa. With this understanding, the possible approach to resolving the problems may become clearer. The issues that need to be considered include the business goals and objectives, the limiting factors and the innovative ways to overcome them.

As the banks have now been permitted by RBI to appoint the business correspondents and facilitators, these agents may be considered for utilisation as the entrepreneurs for the services delivered through the ICT based solutions as well. Since these agents would be offered remuneration for the services, the solution should be sustainable even without passing on the cost of basic services to the customers. The kiosks

may also be gainfully located in the post offices considering their huge network. Providing for the e-marketing of produce (agricultural or otherwise) is another important service which would be of great utility. Therefore, in addition to the offline and online contents provided by the banks, the telecentre-based computer kiosks can be easily utilised for provision of these web-enabled services. Apart from various other financial services like insurance, financial planners, etc. the kiosks can also support the e-governance solutions of the governments to enable deeper penetration of such services without additional cost to the exchequer. When people have found several e-governance initiatives by different states to be extremely useful, there is no reason why banking or insurance services dispensed in the same manner cannot be equally or even more effective. In fact, for the same reason, banks can even think of funding the various e-governance initiatives since some of the services provided like

Box Item 3 :

The Integrated Multi-Entity Database System (IMDS) Model

The IMDS model has been proposed in a working paper by Dr. S.S. Satchidanda et al and issued by the Centre for Banking Technology, Indian Institute of Information Technology, Bangalore. As per this model, it is suggested that an integrated database may be maintained at a data centre for every 25 villages in the area. The data centre may have fibre optic connection with VSAT connectivity as the standby. The database should contain the profile of every adult member in the area and a Storage Area Network (SAN) based online connectivity may be needed to the various Multi-Service Delivery Systems (MSDS) to be located in the villages. The MSDS may be thought of as an ATM machine which can provide not only the cash services but also other kinds of functions like applying for loan, repayment, booking of rail tickets, etc.

Populating the data into the database (IMDS) is a major task in the exercise. It needs to be comprehensive covering the environmental data, credit related history of the individuals, the infrastructure availability and the potential for economic growth. Interfaces with e-governance initiatives like the Bhoomi project of the Government of Karnataka for automation of the land records and related workflows would also be useful in capturing the details of land holding in the IMDS. Banks sharing the IMDS may be given ownership rights to the data specific to them and no other unauthorised access would be allowed. The IMDS is envisaged as part of a grid which can be expanded nation-wide in due course.

verification of title to land holdings are actually beneficial to the banks themselves in speedy and safer clearance of loan applications and in avoiding unnecessary documentations. The key is to take care of the overall requirements of the customers. The role of relationship managers is no less relevant in rural areas than in urban areas. In short, efforts need to be made towards providing a one-stop solution to the maximum possible service requirements of the people.

As for regional rural banks (RRBs), the sector has already been moving towards consolidation with several mergers taking place of late. The merged entities can think in terms of business process reorientation with ICT-based solutions as the core enablers. The sponsor banks of smaller RRBs may allow the sharing of their computer resources 'on cost' basis which would relieve these RRBs of both issues and additional cost related to acquisition and maintenance of separate sophisticated infrastructure. The sponsor banks may also provide for the capacity building of the staff of RRBs. The recently reported initiative towards sharing of the data space in the modern data centre (which hosts a Core Banking Solution running on top of a Linux Operating System) of Pune-based Janata Sahakari Bank by Dombivili Nagari Sahakari Bank has already demonstrated the utility of such arrangements⁵.

Considering the gigantic task, it is essential that corporate support be also enlisted in the exercise. It is heartening to note that companies such as Microsoft, Wipro, etc. have already taken some initiatives in this regard. As briefly mentioned elsewhere in this article, Microsoft has already initiated a pilot project called "Ganaseva" in collaboration with several private and

public sector agencies with a centralised database architecture for use by multiple banks and other agencies in Karnataka. The announcement of the signing of MoU between Wipro Infotech and the Maharashtra Federation of Credit Co-operatives for phased implementation of grid based solution to computerise the 28,000 credit co-operatives in the State by the year 2009 culminating with the establishment of a national grid of all credit co-operatives may be considered as a landmark event⁶. The facilities envisaged include setting-up of mini-ATMs and Cash Credit Cards. In fact, even at a discounted price, reaching out to the rural region should be a viable business proposition for the technology service providers given the volumes involved. Both the software companies and the banks should also take advantage of the regulatory provision which considers the bank loans to the software industry upto an amount of Rs.1 crore for inclusion under priority sector lending. Apart from implementation of such solutions, it is essential to have service providers at every block of the region to take of the maintenance and support requirements of the systems without delay.

Regulatory support may be thought of by including the loans by banks for setting up the ICT based solutions by rural entrepreneurs under priority sector lending. Going a step further, banks may consider lending to corporate entities for ICT-based supply chain management of the rural produce and such advances may also be included without any cap under priority sector lending.

The average number of villages per bank branch works out to roughly around 18 in our country. Therefore, a time-bound target for extending the formal financial services to the households in the villages around the

region may be fixed for every bank branch by the Lead Bank in the area. This may need strengthening and empowering of the Lead Bank offices themselves. The progress of the banks in achieving the targets should be monitored by the controlling offices of the respective bank branches as also in the periodic meetings specially convened for the purpose by the Lead Bank.

Conclusion

The purpose of this article is to stress that, despite the vast size, heterogeneity and infrastructural constraints, it is very much practical to use ICT-based solutions to extend the financial services in the rural regions of our country as a conscious business strategy. It only requires appropriate vision enabled by suitable business model, appropriate technology choices and collaborative efforts of the different players in the arena. Having said that, it has to be admitted that the transformation requires a great amount of groundwork, but then, to cite Vidal Sassoon, "the only place where success comes before work is a dictionary".

References & Sources:

1. *Annual Policy Statement for 2006-07* by Dr.Y.V. Reddy, Governor, RBI
2. *Banking Statistics, RBI, 2003 and Rural Population (India) Census, 2001*
3. *Times of India, December 31, 2005*
4. *Recommendations of the Working Group on Micro Finance & Rural Credit*
5. *The Economic Times, December 28, 2005*
6. *Times of India, June 17, 2006*
7. www.mssrf.org
8. www.n-logue.com
9. www.tenet.res.in
10. Presentations at the National Seminar on ICT for Rural Financial Services organised by CAB, Pune from March 6 to 7, 2006