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Business Continuity Management in Banks – The Indian Experience

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Abstract

Advances in the banking sector have ushered in an era of multi-product and multi-services being delivered using multiple yet integrated channels. The use of information and communication technology (ICT) is on the increase and encompasses nearly the entire gamut of banking operations. Rising competition and customer expectations have compelled top management to implement, and continuously upgrade, agile and scalable ICT practices and solutions. The enormity and range of banking services combined with the complexity of integrated and ICT-enabled delivery mechanisms require comprehensive partnerships to be forged between banks and providers of ICT solutions, especially with regard to Business Continuity Management (BCM). This paper presents the preliminary findings of a research study to identify the essential ingredients of successful BCM implementation based on experiences of banks in India.

1. INTRODUCTION

The rise in economic activity in Asia, particularly India and China, during the last decade has spurred a surge in banking activities. Technology-driven developments in the financial markets combined with a shrinking universe and the change in outlook of society from that of "saving for the future" to "consume to make a better present leading to brighter prospects" have put pressure on the banking industry to provide continuous and reliable service. The Reserve Bank of India regulations and guidelines on implementation of technology require banks to create reliable IT infrastructure and support procedures to ensure high quality service at all times. "The benefits to be derived from the use and adoption of technology cannot be exaggerated. Central Banks the world over have been providing their unstinted support to development of technological infrastructure and to IT innovations in the banking sector. There is no doubt in my mind that technology usage is a core component of all future efforts of central banks to improve their deliverables and to play their defined role more effectively. No system or institution can hope to benchmark itself against international standards without making optimal use of technology", remarked Shri Vepa Kamesam, Deputy Governor, Reserve Bank of India in his address to the Central Bank of Sri Lanka, Colombo, on August 20, 2003.

2. OBJECTIVES OF SURVEY OF BANKS

The published literature on Business Continuity Management (BCM) deals with experiences in the banking sector in the U.S. and Europe, and has lesser direct relevance to banks in India because of differences in culture and infrastructure. A survey was, therefore, undertaken in selected banks in Mumbai during January 2004 - April 2006 to study the organizational, procedural, technological and cultural aspects of current BCM practices. The BCM experiences of the surveyed banks were collated to provide insights on the "essential ingredients of successful BCM implementation in banks".

Five major banks in Mumbai were approached to participate in the study that was conducted at various offices and branches in dispersed locations of the selected banks. The purpose of the study was to collect data and other information on the following aspects:

- The mission and objectives of the bank in the changed environment of increased competition and rise in customer demands.
- Does a wider range of products and services that are offered to customers help in the realization of BCM objectives?
- Technology infrastructure, both implemented and planned, to meet consumer demand and improve efficiency and effectiveness.
- Business continuity organization, infrastructure and processes, - what has been implemented?
- Specific learnings to ascertain the factors that affect the operationalizing of BCM.

3. METHODOLOGY OF THE SURVEY

The study was conducted in four stages:

3.1 Corporate Perspective

Two senior officials in each selected bank of the rank of Vice President and above were interviewed on several occasions to understand and record the bank's mission and vision and its linkage to BCM. Announcements on the bank's website and other published communications were also studied.

3.2 Banking Operations and Products

The range of products and services offered and the related operations practiced in the banks were studied to understand the various aspects of BCM Implementation. The methodology followed for this purpose is given below:

i. Interview one senior banking official of the rank of Vice President at the regional / corporate office.
ii. In-depth interaction with two functional managers in two or three branches at various locations in Mumbai.
iii. Spot observations were also made at the following business touchpoints:

- Bank branches for process (personal banking, loans, corporate banking, etc.), speed and effectiveness of banking transactions
- ATM outlets to get customer's perspective about ease of transactions
- Back offices to understand the integration of processes and information support at operating and strategic levels
- Online banking websites for internet banking transactions to ascertain ease of operations, range of products and customer support

3.3 IT Infrastructure

The infrastructure deployed was studied at the following locations:

- Bank Branches
- Corporate / Regional Offices
- Data Centres (both main and alternate)

3.4 BCM Organization and Procedures

To understand the policy and operational issues related to BCM organization in the bank at both corporate offices and branches, the methodology was as follows:

i. Senior officials of the rank of Vice President and above were interviewed.
ii. Communications in the form of relevant booklets on regulations and intranet / banking software solutions were studied in the selected banks.
iii. Survey questionnaires were administered at various levels in the selected banks to evaluate:
    - Critical processes, possible discontinuities and related impacts on business along with the level of implementation achieved in the bank to meet possible disruptions.
    - Aspects of continuity related to space, processes and technology.

The sample size ranged from 35 to 46 respondents, at strategic, operational and technological levels in each bank.

4. ESSENTIAL INGREDIENTS OF SUCCESSFUL BCM IMPLEMENTATION IN BANKS

The research highlighted several salient features of successful BCM Implementation. It was found that most banks address the issue with the organizational focus on strong technology and facility infrastructure. Most large banks have near world-class facility and technology infrastructure in place as well as the organizational structure and processes to ensure continuity in the event of disruptions. Banks are also factoring in their BCM implementation "softer" issues such as customer satisfaction (e.g., convenience, ease, feel-good, etc.), esteem (the image of the bank in the market and in the eyes of customers), and climate (motivation levels of employees and partners). The "harder" issues such as IT Infrastructure, facilities, procedures, etc. have already attained a high degree of maturity in most banks. These are taken as "given". Therefore banks are now aspiring to attain a higher BCM maturity level by taking necessary actions to improve the softer aspects noted earlier.

The essential ingredients of successful BCM Implementation as culled out from the research findings are grouped in three clusters, - Strategic, Operational and Technological. They are discussed in turn in this section.

4.1 Strategic

The Strategic cluster encompasses the following factors that top management should consider while setting out policy to institute reliable BCM practices.

- **Multiple Delivery Options**
  "Banks delivering their products and services through a wide range of delivery channels: Branch Outlets, ATMs, Phone and Internet Banking, Kiosks and Mobile Devices provide the freedom of choice to customers to transact using the channel they are comfortable with or which is available to them at ease" [1]. Such banks are generally found to be at a higher level of continuity from the customers' perspective.
- **Customer Focus**
  "The implementation of core banking and other IT solutions have made the huge workforce of SBI available to undertake more value-added tasks such as supporting and helping customers" remarked the Assistant GM, State Bank of India (SBI), the largest public sector bank in India [2]. With the IT-enabled self-service transaction handling

systems becoming common place in the banking industry, differentiation in products and services can only be achieved through a personalized customer-centric approach. The goodwill of customers results in their showing a greater degree of tolerance and support when the bank goes through troubled times. "The business does not stop (apparently) from the customer's perspective even if there is a discontinuity that is short-lived. In other words, the tolerance limit of customers to accept disruptions is more if they are satisfied with the bank's delivery systems" [3].

- **Concept of "Bank Customer", Not "Branch Customer"**
  "HDFC pioneered the concept of customers belonging to the bank and not a branch, as was the case prevalent then. A customer can transact in any branch of HDFC anywhere in India (now also abroad)". [4] Customers are viewed as "Bank Customers" and not "Branch Customers" from a BCM perspective.
- **Trust of Society at Large**
  Banks that serve various levels of society in urban and rural areas as well as in the personal and business segments enjoy a higher level of trust of society. "SBI is present, that too very significantly, in personal banking, industrial banking, corporate banking, rural banking, international banking etc. Almost the entire nation and that too all levels know the bank by way of personal experiences" remarked a senior official from SBI [5]. The participants of economic activity in society, wherein there is interaction between small, medium and large businesses as also between the moneyed and not-so-moneyed people, channel their banking relationships with certain large banks. Such banks enjoy greater trust and faith about their strength in terms of continuity, particularly, from the financial perspective. The customer does not feel insecure in investing in banks with larger net worth. Such banks hence enjoy very high level of continuity in the perception of society at large.
- **Rich Collaboration**
  Certain banks, for example, HDFC, have successfully entered into profit-sharing arrangements with a wide range of businesses to implement e-transactions in online shopping malls, railways, online trading and online auction sites [4]. These arrangements provide more outlets to effect transactions. The probability of disruptions is reduced through increase in the number of banking "touchpoints".
- **Trusted Partnership**
  "A large public sector bank has teamed up with Tata Consultancy Services (TCS), the total IT solutions company for software project implementation, maintenance and system administration. The hardware is supplied, supported and maintained by HP. The network services are maintained and managed by Data Craft. The partnership with these companies is a comprehensive one and is built on mutual faith and trust" [6]. The partnering organizations such as TCS and HP see synergistic arrangements for mutual growth and are hence "locked-in" with the bank. Such arrangements are comprehensive, rugged, robust and scalable, thus ensuring a high degree of continuity.
- **Centralized Processing**
  Most large banks resort to central processing of a large number of transactions. "The infrastructure at the central hubs has adequate alternate and failsafe systems to ensure high availability and continuity", remarked the AGM, SBI [2]. This allows their employees to devote more time to customer service, as they are relieved of the back office processing work, which is pushed to central hubs.
- **Range of Customer Segments**
  Larger banks service a vast range of customer segments. "Differentiated and higher levels of service are rendered to certain specialty groups (high-value, retired, etc), thereby ensuring customer lock-in" [4]. This bondage with satisfied customers leads to greater tolerance on their part, which will support the recovery phase of the bank when it has a major disruption.
- **Leverage Internal Strengths**
  Banks that synchronize their operations with the internal organization culture exhibit a greater resilience for combating eventualities. For example, if employees are comfortable with Lotus Notes, it would be advisable to use that tool for the unstructured workflow processes which are not covered by the core banking solution. [7]
- **A Hybrid Approach of "Old Economy" Manual and IT-Based Systems**
  "SBI, whilst embracing technology for automation, has retained its culture of the old-economy days of running business in branches. There are multiple delivery channels to transact business. However, experience has shown that when disaster hits, you need people to manage the crisis, particularly as regards emotions that are most important to defuse the situation. No technology can substitute this" [5]. Banks in India ought to have a judicious mix of "manual" and "IT-enabled" processes as there are limitations of infrastructure, capital for investment and slow-changing mindsets.

4.2 OPERATIONAL

The factors that go into development of operational processes and structure to ensure higher levels of Business Continuity in banks are discussed below:

- **Automation**
  "It reduces reliance on human knowledge of processes thereby reducing dependence on specifically trained personnel and giving greater flexibility to the bank in utilization of its human capital and also allowing the work force to address more value-added activities" remarked Munish Mittal, Assistant Vice President of Information Technology, HDFC Bank [9].
- **Technology for Competitiveness**
  Banks that endeavor to remain a leader in adopting the latest technology to enhance efficiency in delivering services such as B-to-B EDI systems show greater resilience. [8]
- **Product Innovations**
  The wider the range of product options, the higher is the probability of continued business. "HDFC innovated in bringing differentiated products like Private Banking and Smart Cards. Private banking provides specialized banking, financial and investment services to high net worth individuals and institutions. Smart Cards have multi-application capability (insurance, e-purse, toll payments, etc.) and can run on multiple technology platforms" [4].
- **Integration of Diverse Products**
  Integration of diverse products using enterprise applications improves employee productivity and increased customer satisfaction by providing a single view across applications [1].
- **Innovations in Delivery Channels**
  The bank that innovates in coming up with a wider range of services and products delivered reliably through multiple channels provides greater accessibility and availability to their customers. "Internet based self service solutions earn confidence of customers and improves chances of enhanced cross-selling" [7].
- **Multi-Channel Integration**
  A high degree of integration of all channels of delivery improves efficiency and ensures greater promise as regards continuity owing to regular availability of a medium for transactions through multiplicity of touchpoints [1].
- **Finger on the Pulse of Technology**
  Banks, who embrace technology for automated service delivery, benefit from higher degree of operating efficiency and continuity. "SBI has teamed up with Reliance Infocomm to install CDMA based wireless ATMs at remote locations. The bank has excellent electronic fund transfer solutions using STEPS and SEFT. The bank has advanced MICR processing equipment. It has Internet-based facility for handling trade finance transactions for corporate and commercial network branches", remarked a senior official of the bank [10].
- **Optimal Utilization of Disaster Recovery (DR) Site**
  "HDFC's DR site at Chennai is designed to ensure near zero data loss and is manned 24X7. The DR site is online and data from the banking system is replicated every 15 minutes and is designed for a quick changeover". [11] The load is optimally balanced between the main site and the DR site, which takes the operating load at pre-designated instances. Large numbers of ATMs connect to the DR site for normal operations with a facility to changeover to the central site when required. This also keeps the staff as also the systems at the DR site fully functional and attentive. "There have been instances in installations of other banks wherein the changeover to DR sites during failure has been delayed making the arrangement questionable" [11].
- **Physical Security**
  The access permissions and rights must be defined at various levels - administrators, operators and trainees - and should be closely regulated for use as well as change of roles. "The entry to the data center and sensitive areas is highly regulated through use of ID cards, security strings and biometrics. Movement of personnel and assets is regulated and logs are kept for monitoring and analysis. All without exceptions are required to declare contents and purpose of media being carried while moving from anywhere to anywhere within the organization", as noted by an official of UTI Bank. [12]
- **Customer Sensitivity Monitoring**
  Progressive banks proactively test their employees for customer sensitivity on a regular basis. "UTI engaged in an initiative called Mystery Customer Shopping, wherein the project team members simulate an exercise by visiting bank branches as pseudo customers to observe and measure their behavior. They also visit other banks and benchmark the observations with their own bank and suggest improvements / modifications". [12]
- **Optimizing the IT Workforce**

The IT departments of banks, who have experienced success in their BCM implementation, comprise a rich blend of functional and technical specialists to ensure smooth flow of operations related to transactions and customer service. The HDFC experience is a case in point: "The areas of technology operations related to application support and facilities management are outsourced. The distribution of work to the right groups, both internal and outsourced, provides better resilience to meet any eventuality". [11]

- **Location of Assets**
  "A large bank has taken special care to locate sensitive assets such as server rooms, communication equipment, data centers and work places in a manner that they are not affected by small and large accidents such as fire, flooding, etc" [6]. This aspect is often neglected and most important assets are generally housed in basements or in places which could be easily spared, whereas these have to be carefully located to withstand any unforeseen eventuality. "It is commonplace to find captive power plants, UPSs and air-conditioning equipments in the basements, which are affected the most in the unlikely event of flood and earthquakes"[6]. The major disruptions caused by the Mumbai deluge of July 26, 2005 are a testimonial to this danger.
- **Incidence Reporting and Monitoring**
  The practice of timely reporting and monitoring "exceptions" instill the right culture and resilience in the organization to ensure prevention of incidences, rather than looking for cures. The UTI practice states: "Our bank, where Vigilance is the watchword, ensures that all personnel log security incidences regularly. These are picked up, acted upon and subsequently analyzed by the helpdesk staff. The security coordinator and a high level committee periodically analyze these reports, identify loopholes, work out methods to counter them and promulgate them organization-wide". [12]
- **Internet Discipline**
  Progressive banks enforce strict guidelines for operators who connect to the Internet for operations or monitoring to ensure that good practices are followed to prevent security breaches [13].
- **Business Continuity Planning (BCP)**
  BCP in banks aims at ensuring minimum downturn of business and speedy recovery of work area and data center sites. It has well-documented and communicated actions to be taken during a crisis. "The BCP at UTI, developed with the help of TCS and IBM, is complete and comprehensive, and caters for a large number of discontinuities: technological, man-made and natural disasters. The plan is reviewed periodically for corrections and upgrades". [12]
- **Proprietary versus Open Systems**
  "UTI's IT infrastructure is supported on server and storage solutions (IBM pSeries Power4 plus and SAN) at their central data center in Mumbai. The bank has made efforts to also create facilities on open systems hardware and software. This is primarily to leverage the excellent skills in UNIX and Linux present amongst the IT staff". [14] Open systems provide an alternative to proprietary systems, which makes the organization "highly vendor-dependent". It also presents options of running parallel systems at a lower cost but almost as efficient, thus enhancing resilience for continuity.
- **Relationship with Government Machinery**
  "SBI manages banking requirements of governments at Centre, State and large cities (municipal councils). The bank has relationships with most large and medium-sized corporates" remarked the Deputy GM, SBI. [5] These relationships provide good support in the event of disasters as was seen in the recovery of the bank from major disruptions caused by forces of nature and man-made reasons in the recent past.

4.3 TECHNOLOGICAL

The following practices are crucial when setting up and operating technological structures to ensure a high level of continuity in banks.

- **Efficient Data Sharing**
  Banks should share data across products: banking, loans, investments, etc. This results in better information systems for bank operations. In addition, customers can obtain an integrated view of their business with the bank, creating both "real" and "virtual" continuity [15].
- **Reliable Data Protection**
  IT-enabled operations of gigantic volumes, such as those experienced at the data center of a bank, can only be sustained by providing appropriate protection. The enterprise servers coupled with appropriate positioning of security infrastructure should provide data protection at various levels while transactions are in process [15].
- **Balanced Portfolio of Applications**

"The bank using the right combination of standard core banking solution from quality software providers and in-house developed tools, which provide higher efficiency and are more comfortable for the workforce, is less dependent on a particular vendor. This ensures higher degree of Business Continuity", remarked a senior official of ICICI Bank [16].

- **Best-In-Class IT Infrastructure**
  The IT infrastructure ought to be scalable and should deploy the latest technology. "The use of latest technology ensures faster response, higher security, better accessibility, higher productivity and uninterrupted business. The infrastructure ought to be built using best-in-class servers, highest-level available security scheme and a rugged and reliable mesh network to support high-speed and secure data transmissions", as noted by the ICICI bank official [16].
- **Data Center Availability and Disaster Recovery**
  The dynamic requirements of progressive banks necessitate the establishment of quality and world class data center(s) together with a Disaster Recovery site to provide a highly reliable and efficient IT setup that ensures availability and data protection. "The hardware, software and data communication setup needs to be maintained by partners who have the ability to solve a whole class of problems and not just the elements provided and supported by them" [8].
- **Disaster Recovery Setup**
  "SBI's main data center is at Belapur, which houses the central database in a hierarchical client server setup. The bank's disaster recovery setup is at Chennai. The DR setup at Chennai is designed for a Recovery Time Objective (RTO) of five hours. The DR site is manned 24X7 and has adequate changeover facilities" [13]. The data center was hit briefly during the Mumbai floods, which affected banking operations throughout the bank since most banking solutions are now Internet-based. "The problem was with the location of power supply units in the basement which got flooded and hampered process of recovery" according to the DGM, SBI [10].
- **Shared Storage Options**
  Banks have to handle humongous growth of data, particularly, when using a common database across products and services and multiple delivery channels. This necessitates deployment of fast but reliable data storage both for online operations and backups. The bank storage, therefore, has to be a perfect blend of disk and tape-based online storage-cum-backup arrangements using heterogeneous platforms which are monitored by advanced tools [8].
- **Systems Administration**
  Banks ought to invest regularly in training the technical staff on key aspects of network and systems administration to ensure smoothness of operations [15].
- **Backup**
  Storage on Network Attached Storage (NAS) enhances recovery capabilities as the storage device can be located anywhere on a Local Area Network (LAN) and these devices have all the functionalities of a server. "A large bank that currently deploys SAN is also contemplating installation of NAS.The bank enforces strict policy of regular backups" [11].
- **Database Security**
  This is implemented by configuring and executing integrity checks at multiple levels: user level, application level and data administration level [12].
- **IT Security**
  IT security should be implemented at both the systems and user levels. The system level security is implemented at the network level by installing catalyst switches and Intrusion Detection System (IDS). Intra- and inter-application level security is implemented through access control using authentication at application ports and firewalls. This creates VLANs for applications running on various delivery channels. "UTI enforces access control using the model of PKI deploying "certifying authority servers" for administering "session keys" and "registration authority servers" for generating digital signatures" [14].
- **Speedy Server Rebuilding**
  The multiplicity of operations across diverse platforms makes server rebuilding an essential requirement. "The Net Backup Bare Metal Restore Option has enabled ICICI to reduce server rebuilding time by almost 50 percent". [8]
- **Redundancy of Hardware and Network**
  Building appropriate redundancy improves continuity levels. "HDFC's infrastructure has redundant hardware and systems to ensure a higher degree of continuity. Each branch connects to a regional hub as well as to a central data center with a quick changeover option. There are multiple data links, both leased and private, to facilitate data transfer" [11].
- **Network Management**

Managing networks using remote control systems enables IT staff to install, manage, de-install and upgrade software from a central location thereby improving efficiency of Network Management and enhancing continuity. "HDFC deploys Unicenter remote control solution to manage its network which has resulted in high efficiency in managing the infrastructure and savings. The solution being network-based and with alternate pathways in it comes handy while recovering systems from failure remotely". [11]

- **Internet Banking Software**
  Web-based banking solutions provide multi-exchange, multi-segment, multi-currency, single-window and intelligent decision support system for proactive client management. "The customizable and user-friendly environment provided by Internet-based banking solutions prevents blockages of transactions due to lack of information and thus enhances continuity" [17].
- **Server and Storage Consolidation**
  Currently most large banks are bringing in state-of-the-art infrastructure practices such as server virtualization and consolidation to reduce the clutter of servers. This is effected by better utilization of servers located anywhere in the setup, not just the central data center, which are made to work as central servers (virtually). "This provides greater degree of resilience, as all eggs are not in one basket, i.e., all servers in the central data center". [11]

5. STATUS OF BCM ESSENTIALS IN BANKS – A SNAPSHOT

The essential ingredients "as they exist" and "as they should be" have been analyzed on the basis of the interviews conducted with 26 senior officials of the selected banks.

Each of the "essential ingredients" discussed in Section 4 under "Strategic", "Operational", and "Technological", was evaluated in terms of the perceived Importance or Criticality (the "should be") versus the existing Status (the "as is") in the bank. The findings are summarized below for each of the three clusters.

5.1 STRATEGIC

	Essential Ingredient	Importance/ Criticality	Status in Bank
		(% respondents)	
1.	Multiple Delivery options	90	65
2.	Customer Focus	85	80
3.	Concept of "Bank Customers"	80	65
4.	Trust of Society at Large	80	50
5.	Rich Collaboration	75	55
6.	Trusted Partnership	75	55
7.	Centralized Processing	75	65
8.	Range of Customer Segments	65	50
9.	Leverage Internal Strengths	55	40
10.	Hybrid Approach of "Old Economy" Manual and IT-Based Systems	50	40

"Customer Focus" is the only essential ingredient where the current Status has matched the perceived Importance / Criticality. This is true to a slightly lesser extent with regard to "Centralized Processing". Stark differences are seen for five other ingredients, #s 1, 3, 4, 5 and 6, where the Status is at a much lower level than the highly-rated Importance / Criticality of that ingredient. Three of the ingredients, #s 8, 9 and 10, were rated lower than the others in terms of Importance / Criticality; and, the current Status of these ingredients is also low.

5.2 OPERATIONAL

	Essential Ingredient	Importance/ Criticality	Status in Bank
		(% respondents)	

1.	Automation	90	80
2.	Technology for Competitiveness	90	75
3.	Product Innovations	80	70
4.	Integration of Diverse Products	85	65
5.	Innovations in Delivery Channels	85	65
6.	Multi-Channel Integration	90	70
7.	Finger on the Pulse of Technology	80	65
8.	Optimal Utilization of DR Site	70	70
9.	Physical Security	70	80
10.	Customer Sensitivity Monitoring	70	55
11.	Optimizing the IT Workforce	65	55
12.	Location of Assets	65	65
13.	Incidence Reporting and Monitoring	60	60
14.	Internet Discipline	55	50
15.	Business Continuity Planning	55	50
16.	Proprietary versus Open Systems	50	50
17.	Relationship with Government Machinery	50	40

Ingredients 1, 2, 3, 4, 5, 6 & 7 are all rated highly with regard to Importance / Criticality, whereas Status reasonably matches this requirement only for "Automation". For the other 6 ingredients rated highly, the Status is only at a moderate level.
Interestingly, "Physical Security" is the only ingredient where the Status is rated higher than Importance / Criticality.
Four of the ingredients, #s 14, 15, 16 & 17, received a low Importance / Critical rating that is matched by the current Status in the bank.

5.3 TECHNOLOGICAL

	Essential Ingredient	**Importance/ Criticality**	**Status in Bank**
		(% respondents)	
1.	Efficient Data Sharing	90	80
2.	Reliable Data Protection	90	85
3.	Balanced Portfolio of Applications	85	70
4.	Best-In-Class IT Infrastructure	80	65
5.	Data Center Availability and DR	80	70
6.	Disaster Recovery Setup	80	70
7.	Shared Storage Options	75	65
8.	Systems Administration	75	75
9.	Backup	75	80
10.	Database Security	75	75
11.	IT Security	70	70
12.	Speedy Server Rebuilding	65	60
13.	Redundancy of Hardware and Network	65	55

14.	Network Management	65	55
15.	Internet Banking Software	55	50
16.	Server and Storage Consolidation	55	50

"Efficient Data Sharing" and "Reliable Data Protection" are two highly rated ingredients with regard to Importance / Criticality, which are also matched reasonably by the current Status in the selected banks. Four ingredients, "System Administration", "Backup", "Database Security" and "IT Security", on the other hand, stood out since the Status is rated on par or even a little higher than Importance / Criticality for these ingredients.

Several essential Technology ingredients, item #s 3, 4, 5, 6 and 7, received a high rating with regard to Importance / Criticality but the "Status" was rated lower. Five other ingredients, #s 12, 13, 14, 15 and 16, received a moderate to low Importance / Criticality rating; and, the Status for these ingredients show a reasonable match.

6. SUMMARY

The survey highlights that most banks regard the following factors as highly critical to implement reliable BCM structure and practices.

- Establish and nurture partnerships with agencies that work in a collaborative mode in supporting banking operations with technology.
- The esteem value that customers and partners hold about the bank is not only a catalyst for progress, but also provides strong support during the phase when the bank is attempting to recover from a disaster.
- A wider customer base served with a variety of products and supported on multiple delivery channels ensures higher degree of continuity, both in terms of operations and preparedness of a bank in dealing with disruptions in services.
- Most banks consider state-of-the-art technology as critical to growth and efficient delivery of service. Some large banks also do not want to give up manual processing which they consider as the last resort in effecting transactions during a major discontinuity.

With regard to the current status of BCM practice, the following are noteworthy:

- Banks have put together reliable IT Infrastructures to support their operations. These are built using high-end platforms and proprietary solutions. Certain banks also have custom-built solutions developed by in-house teams using open-source software to attain vendor independence.
- All banks that have achieved high degree of computerization have modern central data centers with distant DR Sites. The DR site utilization percentage was, however, found to vary significantly. Only a few banks are more regular with putting the actual load on DR Sites frequently.
- The composition of teams managing IT in banks is mostly a judicious mix of Banking and Systems professionals to foster a rich blend of knowledge of banking processes and technology.
- The advanced practices of server and storage consolidations to optimize data storage and processing have been implemented in the banks studied.
- Security at both database and systems levels has been implemented in most banks using complex and comprehensive third-party solutions.
- The Network and Systems Administration are carried out using remote control solutions ensuring greater reliability and efficiency.
- Most banks have built sufficient redundancy in their information and communication technology components to ensure a high degree of reliability.

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