



Financial Innovation and Advancing Information Technology Values in Indian Banks

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Abstract

In the wake of the financial crisis, banks around the world have to adapt to a different and rapidly changing business environment. Ongoing shifts in customer behavior and advances in technology are changing not only what customer's expectation from the banks, but also how banks and non-bank competitors deliver financial services. Taking on board the lessons of crisis, banks need to ensure that they are accessing revenue pools that offer long term growth. As the customers adopt new technologies and behaviors, and as banks and non banks alike leverage new technologies, channels and business models to capture more of their customers' business, banks need to find new ways to deliver their services and connect with customers. Effective CRM initiatives utilize advances in technology to analyze available customer data in order to improve marketing and customer satisfaction. Customer Interaction Management (CIM) seeks to leverage the benefits of multi-channel involvement with the customer, to offer proactive assistance benefiting both the customer and the organization. The use of technology, new business models to extend relationships with customers and effective relationship management strategies in place that incorporate not only staff culture and training, but also the underlying systems to support these interactions has become utmost important in service delivery process.

Keywords: Information technology, financial innovation, customer interaction management, service delivery and customer satisfaction.

Introduction

Introduction to financial innovation and advancing technology in banking: Information technology has brought a great change in working of banks and is having a high impact on their success. Today with advancement of technology and its adoption by banking industry a variety of channels and various customer touch points have been integrated so that there is no lag in the service provided to the customer.

Earlier banking meant waiting in long queues during working hours on week days just to get a passbook updated or get the busy bank employee to answer customer queries. Although a lot of technology based facilities have been provided by banks but still a lot has to be done to have a common, consistent and integrated system which is trusted by the customer and increase their satisfaction.

Technology Adoption In Indian Banks: The technology adoption of information technology in Indian banking system can be traced back to the liberalization era that began in early nineties.

The economy was liberalized in nineties and this resulted in the advent of new private sector banks. Many foreign banks

also entered the market. These banks brought with them technology based processes and working systems.

These developments made it imperative for the other existing banks to adopt technology so as to survive in the market. Thus technology adoption was more due to external changes and developments rather than internal.

Deregulation paved the way for new opportunities for banks to increase revenues by diversifying into investment banking, mortgage financing, depository services, securitization, insurance, plastic cards, etc.

Review of Literature: Many researchers have given their views on the innovation in the services in the perception of Chanakya Jayawardhana and Paul Foley, Innovation are "only accessible to people with certain qualities"¹. Scott M Davis and Kristan Moe have framed eight steps that effectively take a company from customer driven needs and work assessment to final commercialization².

Satisfaction can only result from an evaluation of a service and thus, a customer has to experience the service to be satisfied or dissatisfied with it. In this sense satisfaction is a post-experience decision. Quality, by contrast, can be assessed without a direct experience but indirectly, for instance, by

means of detailed information about a service before the actual purchase stated by Churchill and Surprenant³.

Evaluation of quality is in most cases more specific, objective and of normative character whereas evaluations of satisfaction are more unspecific, emotional and affective Dabholkar⁴.

Assessment of quality is more comprehensive and holistic, whereas evaluation of satisfaction is mostly transaction-specific Bitner⁵.

Due to the information intensive nature of the financial services industry, the primary component in the tailoring process is information personalisation, which includes financial consultation and financial content delivery, which may include financial advice or personalised transaction services. Yet, services are largely intangible, therefore, it is difficult for the providers to explain and difficult for the customers to assess before buying. This places special demands on the marketing of a service to avoid the formation of inaccurate and unrealistic expectations, taking into consideration that one aspect of service integrity is to give only promises which the service provider is capable of fulfilling B.Evardsson⁶.

Innovation is obviously important in the recent banking research, this consideration for the customer and anticipation of their future needs has become one of the leading concepts in business excellence J. Kandampully and R. Duddy⁷.

The Forces of Change in Retail Banking: Retail banking has undergone various consolidation as well as expansion phase, many mutual fund companies, insurance firms and brokerage houses are taken up by the banks so as to offer a full spectrum of financial product and services to their customers. Cross-industry acquisitions were made to stop draining of the market share. Industry consolidation was done to exploit scale economies in transaction processing. Cross-selling multiple financial products to a customer was practiced to gain economies of scale.

Banks positioning for the future and overcoming competitive threats can only be achieved by industry consolidation via acquisition. Consolidation can be viewed as a strategic response for mobilizing the banking sector.

Financial services are at the edge of performance improvements due to technology. Performance improvements will arise in the integration of front and back office functions. Difficulty to find investments in IT projects results in slow consolidation of back-office operations of banks.

Distribution strategy of retail banks have different needs which are served by aspects of innovation. These innovations in the current scenario are enhancing the platform automation for branch and call center employees and PC banking.

Now a days banks have started using electronic banking channels, Automated Teller Machines, Credit Cards, Debit Cards, Mobile Banking, Internet Banking, Call Centers, etc.

IT Leverage in Banking Sector: With the help of innovative IT, banks are able to reduce the transaction cost and handle a large number of transactions in time. Now banks can provide customized products and services easily and customers could access many services through internet. Customer Relationship Management is practiced, delivery of better service which is made by use of available conductive technology. Innovation in technology is also enhancing customer base by cross selling the products/services of insurance and broking firms, which are fee-based services. Innovative technology not only brings benefits, but risks too. A cost associated risk is lying with the implementation of innovative technology which might not bring cash flows required to cover that cost. Increased capacity due to a new technology could result excess capacity in the financial institution.

The problem which banks faced was implementation of latest and newest technology and its integration with existing system. Banks face cost overrun or cost control problems. Innovative technology has brought new risks like overdraft risk.

Innovations in Housing Loans: Booming housing loan market segment positively affects many industries; housing loans are one of the products that banks are concentrating upon so as to provide impetus to any economy, booming housing market is vital. Banks benefit from higher security, low risk weight and reasonable margins.

Risk Management: Liberalization and Globalization are forcing banks to take more risk to compete effectively in the global market place. One of the important risks is compliance risk. It is the risk to comply with laws, rules and standards. To mitigate this risk, banks should develop compliance culture in their organization. It is not only the duty of compliance specialists, but banks can also manage compliance risk by putting in place compliance functions that are in consistence with compliance principles. Liquidity risk arises when banks unable to meet their obligations when they become due. To manage the disparity of assets and liabilities, banks should analyze the accounting data both on static as well as dynamic basis. Deposits of higher value are the most important item to be monitored regularly, as sudden withdrawal of these deposits might cause liquidity problem for the bank. Also incentives to these deposits in the time of falling interest rates could create strain on liquidity.

Innovations in Customer Services: Satisfied customer is the best guarantee for stability of the organization in the long-run. Banks can satisfy their customers only by providing customized, cost effective and timely service. With the help of

electronic banking channels banks are able to provide surplus of products and services to their customers which suit them.

Research Objective: i. To study various factors those are associated with customer preference of different electronic banking channels. ii. To study the impact of technology on service quality in banks.

Research Methodology

To measure the service quality of banks in the retail banking area and to analyze the perception of respondents regarding service quality, a survey was conducted in Ajmer region of Rajasthan (India). The study is based on a survey conducted in Ajmer (Rajasthan) in 2012. Primary as well as secondary data were collected. The Theoretical foundation of the study is based on various secondary sources such as texts on service quality, articles, published and non-published papers. For the purpose of the study questionnaire was designed. The survey was based on questionnaire containing questions framed on five point Likert Scale where “1” represents highly dissatisfied and “5” represents highly satisfied, respondents were asked to respond to the statements. To measure different dimensions of service quality Tangibility, Reliability, Responsiveness, Assurance and Empathy the SERVQUAL scale was modified as per the requirement of financial service of banks. The population consists of all the customers of various banks of Ajmer Region out of these 75 respondents were selected for the survey.

Results and Discussion

Demographic profile: The total number of respondents was 75 which had a relatively more number of male (67%) than female (33%). About (55%) of the sample customers were in the age group of 26-35yrs. Majority of the respondents were married (89%) whereas only (11%) were unmarried. With respect to education background (40%) were Graduates while (24%) Post Graduates. This implies that majority of respondents were literate. The respondent's employment category shows employed (20%), Government and Private Service (50%), Professionals (22%) and others (8%). Majorly respondents were earning ranges from Rs.10, 000 to Rs. 25,000 (72%). Around (10%) of the respondents had income below Rs.10, 000 while (18%) of the respondents were beyond Rs.50, 000 in a month.

Innovation in E-Banking Channels pertaining to the Service Quality Dimensions: The term E-Banking includes all the processes which are technology based and which can be performed by customer without visiting the bank premises. The following terms all refer to one form or another of electronic banking: personal computer PC banking, Internet banking, virtual banking, online banking, home banking, remote electronic banking, and phone banking. PC Banking

and Internet or online banking are the most frequently used terms.

Most of the innovations are taking place in the area of e-banking channels. The channels are now becoming technology based. Many studies have been conducted to study the adoption of these electronic channels like i. Adoption of Internet banking and ii. Consumers' using ATM cards, debit cards, and electronic bill payment services.

Another area where innovations are taking place is IT based decision making using financial, economic and statistical modules. Specific decision support systems have been developed to enhance decision making and employ economic and statistical models to create and value new securities, estimate return distributions. The technological adoption and advancement helps the banks in performing better and fast.

Technological progress in the banking industry is also important because of the key roles of banks in providing financing, deposit, and payments services to other sectors of the economy.

In the present study respondents were asked about the latest electronic banking service they have used. It was revealed that most of the customers have adopted ATM banking. ATM facility is found to be more in usage than other facility such as internet and mobile banking. Customers are availing services of queue less ATMs, easy accessibility of ATMs, reducing unnecessary promotions in mobile banking resulting in more customer satisfaction.

Factor Analysis Results: The raw data was factor analyzed using SPSS 16.0 to summarize the 17 variable into smaller sets of linear composites that preserved most of the information in original data set. The data was subjected to principal component analysis, a method characterized under the broad area of factor analysis. The 17 variables were reduced to six principal components through varimax rotation (table 5) and Component Transformation Matrix (table 6). Kaser-Mayer-Olkin measure of sampling adequacy was 0.560 and the Bartlett's test of sphericity was 390.730 significant at $p < 0.001$ (table 2), thus indicating that sample was suitable for factor analytic procedure.

According to the analysis, six factors with eigen values greater than 1.0 were obtained and these accounted for 68.109% of the total variance as shown in (table 4). In order to establish the internal consistency, Cronbach's alpha was calculated for the 17 items which came to be 0.601 (table 1).

The factors represent the different elements of innovation in electronic banking channel with respect to service quality which form the underlying factors from the original 17-scale response items given.

Table-1
Result of Factor Analysis on the Items of Electronic Banking Channels and its Six Service Quality Dimensions

S. No	Factors and Items (Over all Cronbach's Alpha=0.601)	Eigen Value	Factor Loading	Variance (%)	Cumulative Variance (%)
1.	Innovation in Secure Service	3.337		19.630	19.630
	Employee in the bank has knowledge and competence to solve customer's problem (AS3)		0.762		
	Do you think behavior of employees instills confidence in customer (AS2)		0.652		
	You feel like switching because it's too inconvenient and little advantageous (EM5)		0.520		
	The bank has convenient timings (EM3)		0.842		
	The bank premises are visually appealing (TA1)		0.712		
2.	Innovation in User Friendly System	2.698		15.869	35.499
	Employees of the bank provide prompt service to their customers (RES3)		0.798		
	Pamphlets are clear and give complete information (TA5)		0.571		
	Security Guard and sufficient parking place available (TA8)		0.589		
3.	Innovation in Information Technology	1.797		10.571	46.071
	Customer can fully depend and rely on bank employee (RE5)		0.694		
	The bank service has up-to date equipment (TA2)		0.864		
4.	Innovation in Product and Service Charges	1.483		8.724	54.794
	Bank Branch and ATM location is convenient you (TA7)		0.550		
	Charges bank collect from you are reasonable and comparable with other banks (RE3)		0.828		
	Employee know what your need are (EM4)		0.424		
5.	Innovation in Performance Transaction	1.169		6.878	61.672
	The bank service provides best interest in heart (EM1)		0.826		
	Customer usually stands in long lines (RES5)		0.597		
6	Innovation in CRM	1.094		6.437	68.109
	Do you think that manager of the bank understand their customer specific needs (EM2)		0.842		
	The number of branches is enough (TA4)		0.467		

Table-2
KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.560
Bartlett's Test of Sphericity	Approx. Chi-Square	390.730
	Df	136
	Sig.	0.000

Table-3
Extraction Method: Principal Component Analysis Communalities of the perceived variables

Communalities		
	Initial	Extraction
TA1	1.000	0.680
TA2	1.000	0.796
TA4	1.000	0.621
TA5	1.000	0.599
TA7	1.000	0.704
TA8	1.000	0.639
EM1	1.000	0.707
EM2	1.000	0.785
EM3	1.000	0.790
EM4	1.000	0.673
EM5	1.000	0.644
RE3	1.000	0.746
RE5	1.000	0.729
RES3	1.000	0.719
RES5	1.000	0.428
AS2	1.000	0.614
AS3	1.000	0.705

Table-4
Extraction Method: Principal Component Analysis

Total Variance Explained									
Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.337	19.630	19.630	3.337	19.630	19.630	2.850	16.763	16.763
2	2.698	15.869	35.499	2.698	15.869	35.499	2.088	12.282	29.044
3	1.797	10.571	46.071	1.797	10.571	46.071	1.868	10.986	40.030
4	1.483	8.724	54.794	1.483	8.724	54.794	1.647	9.690	49.719
5	1.169	6.878	61.672	1.169	6.878	61.672	1.631	9.593	59.313
6	1.094	6.437	68.109	1.094	6.437	68.109	1.495	8.796	68.109
7	0.899	5.286	73.395						
8	0.839	4.936	78.331						
9	0.648	3.810	82.141						
10	0.587	3.451	85.592						
11	0.572	3.367	88.960						
12	0.508	2.991	91.950						
13	0.391	2.297	94.247						
14	0.332	1.950	96.198						
15	0.288	1.696	97.894						
16	0.183	1.075	98.969						
17	0.175	1.031	100.000						

Table 5
Extraction Method: Principal Component Analysis Rotation Method: Varimax with Kaiser Normalization

Rotated Component Matrix						
	1	2	3	4	5	6
TA1	0.712	0.063	0.405	0.001	-0.064	-0.037
TA2	0.038	-0.175	0.864	0.033	-0.072	-0.109
TA4	-0.273	0.279	-0.294	0.362	-0.179	0.467
TA5	-0.020	0.571	0.148	-0.117	-0.404	0.269
TA7	-0.128	0.277	0.180	0.550	-0.257	0.459
TA8	0.027	0.589	-0.073	0.514	0.141	0.051
EM1	0.075	0.071	-0.041	-0.009	0.826	0.107
EM2	0.196	0.007	0.003	-0.055	0.184	0.842
EM3	0.842	0.066	-0.121	-0.112	-0.021	-0.222
EM4	0.423	0.398	-0.338	0.424	0.201	0.019
EM5	0.520	-0.562	-0.215	0.024	0.024	0.102
RE3	0.092	-0.176	0.130	0.828	-0.006	-0.059
RE5	0.172	0.095	0.694	0.152	0.389	0.184
RES3	0.023	0.798	-0.257	-0.041	-0.118	0.022
RES5	0.046	-0.213	0.149	-0.038	0.597	0.008
AS2	0.652	-0.095	-0.020	0.129	0.192	0.353
AS3	0.762	-0.104	0.216	0.094	0.154	0.186

Table-6
Component Transformation Matrix

Component	1	2	3	4	5	6
1	0.821	-0.316	0.287	0.052	0.368	0.074
2	0.251	0.670	-0.151	0.512	-0.030	0.451
3	-0.361	-0.057	0.848	0.330	0.011	0.195
4	-0.362	-0.263	-0.329	0.202	0.748	0.302
5	-0.038	0.534	0.253	-0.679	0.419	0.111
6	-0.012	0.307	0.059	0.353	0.358	-0.806

Conclusion

In modern economy innovation plays a key role. The centrality of finance in an economy and its importance for economic growth naturally raises the importance of financial innovation. Due to this, research was carried out to establish relationship between innovation in technology and service quality in banking industry. It was established that there is a direct relationship between advancing technology and service quality in the banking industry. The use of technology in banking enhances the service offering to the customer. However, the level of service expectations varies depending on the level of experience with electronic banking and level of education of the customer. This expertise may relate to both financial and technology issues and banks need to be aware of these customer differences when designing their service offerings. The key factors for satisfaction in the Indian banking industry in relation to technology were established.

The rank of the factors according to importance the customers can be written in the descending order as Innovation in Secure Service > Innovation in User Friendly System > Innovation in

Information Technology > Innovation in Product and Service Charges > Innovation in Performance Transaction > Innovation in CRM.

Customer Satisfaction increases when the customer is fully confident that their transactions would be dealt efficiently, diligently, friendly, along with of feedback and be able to satisfy customer's complaints as they would be in a face-to-face service encounter. The lack of physical presence or personnel does not lower banking customer's expectation levels with regards to service quality, in fact it may raise expectations levels of delivery, quality, trust and the need to build, maintain and consistently enhance relationships.

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