Results and Analysis

5.1 Demographics

5.1.1 Response Rate

Table 3 lists the sample size of the questionnaires that were sent to 1200 bank branches.

Table 3. Response Rate

<table>
<thead>
<tr>
<th>Initial Sample Size</th>
<th>Undeliverable</th>
<th>Adjusted Sample Size</th>
<th>Number of Total Respondents</th>
<th>Adjusted Response Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1200</td>
<td>130</td>
<td>1070</td>
<td>243</td>
<td>22.71 percent</td>
</tr>
</tbody>
</table>

For reasons of wrong address, a branch closed or shifted and returns with simple comment "undeliverable" the adjusted sample size was 1070. All survey respondents were at managerial/supervisory level. Help from IT industry particularly from the onsite IT manpower of IT Division, DCM Ltd. and Sysnet Ltd. was extensively taken to track the questionnaires within banks. This help from the IT industry in administering this questionnaire resulted in the response rate of 22.71 percent.

5.1.2 Organization Profile Description

As shown in Table 4, out of the 243 respondents, 63 respondents (25.9 percent) were from Nationalized Public Sector Banks, 139 (57.2) from SBI, 36 (14.8) from SBI Subsidiaries and 5 (2.1) from Private Sector.
Table 4. Organization Profile Distribution (n=243)

<table>
<thead>
<tr>
<th>Organization Profile</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nationalized Public Sector Bank</td>
<td>63</td>
<td>25.9</td>
</tr>
<tr>
<td>SBI</td>
<td>139</td>
<td>57.2</td>
</tr>
<tr>
<td>SBI Subsidiary</td>
<td>36</td>
<td>14.8</td>
</tr>
<tr>
<td>Private Sector Bank</td>
<td>5</td>
<td>2.1</td>
</tr>
<tr>
<td>Total</td>
<td>243</td>
<td>100</td>
</tr>
</tbody>
</table>

5.1.3 Respondent Organization’s Hierarchical Distribution

The targeted sample units i.e. bank branches constituted 211 (86.9 percent) of the respondents, 7 (2.9 percent) were from regional offices, 4 (1.6 percent) from zonal offices, 4 (1.6 percent) from divisional office and 16 (6.6 percent) from Head office as represented in Figure 5. This distribution ensured a representation of the views of other offices too apart from the targeted sample of bank branches on the IT adoption in bank branches.

![Figure 5. Respondent Organization Hierarchical Description (n=243)]
5.1.4 Geographic Distribution of Respondents amongst Regions

All the six major regions of India viz., North, West, East, South, Central and Northeast were represented in the study as shown in Figure 6. The majority of the respondents were from West constituting 33.7 percent and least from North East (2.9 percent). North followed West with 32.9 percent, followed by 15.2 percent respondents from Central, 11.1 percent from South and 4.2 percent from East.

![Respondent Office's Geographic Distribution](image)

Figure 6. Respondent Office's Geographic Distribution (n=243)

5.1.5 Employee Strength of Respondent’s office

The staff strength of respondent offices varied with 57.5 percent having 11-25 employees, 17.2 percent having less than or equal to 10 employees and 25.3 having greater than 25 employees as depicted in Figure 7.
5.2 Organization Orientation

5.2.1 Organization Orientation

In the orthodox literature, production orientation referred to the focus on minimizing production costs in order to sell the product as cheaply as possible (Kotler 2000). Earlier when standardization was the key to increase productivity, this may have had some validity but now in the modern production management the key elements are quality, flexibility and the integration of control systems. This has given rise to a revised orientation and that is production/technology orientation. This is also known that any organization will have a mix of orientations; the critical would be the dominant orientation that is prevalent in an organization.

True flexibility and responsiveness to consumer needs has become possible now due to new production technology. This allows even large global players to get interested in smaller and niche market segments and launch a suitably focused attack (Pearson, 1993).
The extent of the use of innovation and how profoundly the organization's use of the new technology is influencing and altering the processes, structures and organizational orientation has produced more results of interest than technology use or user adoption (Fichman and Kemerer, 1997).

Of the 243 respondents, 60.5 percent pointed out that they provide banking services to meet consumer needs indicating a marketing orientation whereas 39.5 percent indicated that they provide services at the lowest possible cost to serve the market signifying production/technology orientation. Further probing into the respondents' indication of their agreement or disagreement with certain attributes of marketing and technology orientation as described by McCarthy and Perreault (1987), Kotabe (1998), Zehner (2000) and Cairncross (2002), the present study has employed a paired t-test of means differences between the responses to the indirect questions on the orientation towards marketing/technology.

*First indirect question combination*, the two classes (marketing/technology) represent respective means $\mu_1$ and $\mu_2$ where we need to decide between the hypotheses:

- $H_0$: $\mu_1 = \mu_2$, and the difference is due merely to chance.

- $H_1$: $\mu_1 \neq \mu_2$, and there is a significant difference between the classes.

Under the hypothesis $H_0$, both classes come from the same population. The mean and standard deviation of the difference in means are given by $\mu_{\bar{x}_1 - \bar{x}_2} = 0$ and

$$\sigma_{\bar{x}_1 - \bar{x}_2} = \sqrt{\frac{\sigma_1^2}{N_1} + \frac{\sigma_2^2}{N_2}} = 2.34$$
where \( \sigma_1 \) and \( \sigma_2 \) are the standard deviations as estimates. Thus, 
\[
t = \frac{\bar{X}_1 - \bar{X}}{\frac{\sigma_{\bar{X}_1-\bar{X}_2}}{\sqrt{N_1} + \sqrt{N_2}}} = 2.744 (0.007^*)
\]

For a two-tailed test the results are significant at the 0.05 level where \( t \) value lies outside the range -1.96 to 1.96. Hence, the study concludes that at 0.05 level there is a significant difference in responses between the two classes and that the second class is probably better.

*Second indirect question combination*, the two classes (marketing/technology) represent respective means \( \mu_1 \) and \( \mu_2 \) where we need to decide between the hypotheses:

- \( H_0: \mu_1 = \mu_2 \), and the difference is due merely to chance.
- \( H_1: \mu_1 \neq \mu_2 \), and there is a significant difference between the classes.

Under the hypothesis \( H_0 \), both classes come from the same population. The mean and standard deviation of the difference in means are given by \( \mu_{\bar{X}_1-\bar{X}_2} = 0 \) and

\[
\sigma_{\bar{X}_1-\bar{X}_2} = \sqrt{\frac{\sigma_1^2}{N_1} + \frac{\sigma_2^2}{N_2}} = 1.783
\]

where \( \sigma_1 \) and \( \sigma_2 \) are the standard deviations as estimates. Thus 
\[
t = \frac{\bar{X}_1 - \bar{X}}{\frac{\sigma_{\bar{X}_1-\bar{X}_2}}{\sqrt{N_1} + \sqrt{N_2}}} = 5.685 (0.000^*)
\]

For a two-tailed test the results are significant at the 0.05 level where \( t \) value lies outside the range -1.96 to 1.96. Hence, the study concludes that at 0.05 level there is a significant difference in responses between the two classes and that the second class is probably better.

* figures in parenthesis shows two tailed significance level.
* figures rounded off up-to 3 digits in parenthesis shows two tailed significance level.
It is assumed that the respondents' response should lie at two extremes in the 5 point Likert type scale. The results worked out as per the paired sample t-tests justify such proposition. Polarization of responses is more inclined towards technology orientation than towards marketing orientation which can be assessed from the mean value of technology orientation being larger than the marketing orientation.

Majority of the respondents, 97.2 percent, were in agreement with the statement that their organization is using technology to improve quality of service as depicted in Figure 8 and

![Pie Chart](chart.png)

**Figure 8. Is Organization using Technology to improve Quality of Service (n=243)**

97.5 percent agreed that organization is using technology as a practice to create value (Figure 9). Studies have shown that a new view and perception of technology is required before it can be exploited to its full potential. This new perception would see technology not merely as a new tool but rather as a new
organization practice to be followed and this understanding explains why the use of technology is also part of the technology Caimcross (2002).

Figure 9. Is Organization using Technology as a practice to Create Value (n=243)

The orientations are not at the exclusion of each other and none of the orientations can be overlooked. The orientation refers to the degree to which a particular functional or object orientation is considered supreme and influences the way decision making is done in the organization or the way people perform their jobs.

5.2.2 Responsiveness and Flexibility

Responsiveness refers to the capability of an organization to offer acceptable level of service at all times and flexibility describes the ability of an organization to be open to change and support continuous improvements. These two characteristics as part and parcel of technology orientation of an organization are not only dependent on it for results but also are the main reasons that provide further
impetus to technology orientation getting enmeshed as a continuing organization practice (Kotabe, 1998; Cairncross, 2002).

98.4 percent of respondents rated their organization as responsive as shown in Figure 10 and 96.3 percent of respondents considered their organization as flexible (Figure 11). These figures reflect the changes that the Indian banking industry is going through due to intense competition after opening of the India market to private and foreign players. Technology is becoming a key determinant to bring responsiveness and flexibility in operations of the industry. IT adoption strategies are taking root in almost all the banks and technology and innovation are becoming a critical part of business strategy and practice.

Figure 10. Level of Organization Responsiveness (n=243)
5.3 Extent of IT Application

5.3.1. Stage of Information Technology Adoption

The widespread use of IT in Indian banking industry has shown up in the study as 45.3 percent respondents have indicated that they have adopted Total Branch Automation (TBA), 2.1 percent have gone beyond to inter branch connectivity, 51.8 percent have implemented the next level Core Banking and .8 percent have achieved the enterprise solution implementation including CRM and HRM which is one of the current highest levels of IT in banking (Figure 12).

Before 2000, only 10.3 percent respondents had adopted IT as one of the main tools of performance, 24.3 percent respondents adopted IT from 2000 to 2002, 57.6 percent in the period 2003 to 2004 and balance 7.8 percent in 2005 and 2006 as shown in Figure 13.
The peak period of adoption from 2002 to 2004 corresponds to the advent of intense competition from private and foreign players in the Indian banking industry and reflects the pace with which Indian banking industry went in for IT adoption due to internal factors like costs and efficiency as well as external factors like competition and economy opening up.

5.3.2 Pervasiveness of IT in the Organization

97.2 percent of respondents agreed that the IT is quite pervasive in their organization reflecting the fast paced IT adoption and its prevalent use in most of
the activities of the banks (Figure 14). This suggests the depths to which IT adoption processes have already penetrated in Indian banks as well as acceptance of the new technology by its employees. IT adoption has been measured in literature as the extent to which the innovation has diffused into the routine activities and processes of a business (Cooper and Zmud, 1990).

![Figure 14. IT is quite pervasive in the most of the organization activities (n=243)](image)

5.3.3 IT's impact on organization processes

IT on one hand enhances support to the organizational processes by broadening the range and depth of information available about the business activities and on the other hand also enables team members to coordinate their activities better (Rockart and Short, 1991).

IT's contribution in decision making process and improving it was endorsed by 97.2 percent of respondents (Figure 15). When IT starts contributing in decision-making process and is acknowledged to even improve it signifies that IT
innovations have become an organization wide part and parcel of business strategy. Indian banking after initial slow IT adoption before 2002 has made IT adoption a successful organization process and it shows in organization wide recognition of inevitability of adopting IT fast to compete in the marketplace as well as to offer better services to the end clients.

Consequently the benefits of IT adoption have also started accruing in Indian banks.

Figure 15. IT helps in decision making process and improves it (n=243)

In literature IT adoption process's success has been gauged by the extent to which it facilitates customer facing activities including product or service sales, distribution and after sales support (Chaterjee et al., 2002).

98.8 percent of respondents felt that IT has enabled faster customer response externally, (Figure 16), and 99.6 percent indicated that IT has led to productivity
enhancements in their organization, (Figure 17), reflecting a strong endorsement of effectiveness of IT adoption processes.

Literature suggests that the key to a successful IT adoption is to move from mere using the systems to a strategic use of them and the strategic use is denoted as applying IT to all the critical areas of business function of the organization to, enhance job effectiveness,

![Figure 16. IT has enabled faster customer response (n= 243)](image)

improve job performance and increase productivity (Ndubisi et al., 2001). By thus utilizing IT, organizations fundamentally revamp their business processes, and enhance their business profitability and productivity (Shin, 1999).
5.3.4 IT's performance vis-à-vis expectations

When asked whether IT has led to a better coordination among various departments, 97.6 percent of respondents were in agreement with it (Figure 18). The real success of any innovation adoption lies in when participants start seeing benefits in terms of better coordination among different departments as that signifies an organization wide acceptance of new innovation and its use in day-to-day intra-organization activities. IT lessens the cultural differences between distinct information systems leading to faster innovation diffusion and enhanced coordination among systems and departments (Johannessen, 1994).
94.2 percent of respondents felt that IT implementations have met the employee expectations (Figure 19) whereas a higher percentage of 96.3 percent felt that IT has met the management expectations (Figure 20). The Gap between the two is not very wide signifying an effective communication of IT vision by top management as well as employees' understanding and appreciation of the urgent need of technology to improve operations to meet the intensifying competition.

The gap between expectations from new technology and actual implementation benefits perceived by employees explains the success or failure of an innovation adoption process. Management of Indian banks appears to have done a successful job in laying down the expectations and then effectively implementing the new IT innovations to meet those.
Figure 19. IT has met the employee expectations (n=243)

Figure 20. IT has met the management expectations (n=243)
5.4 Perceived Effectiveness of IT Adoption

5.4.1 Importance of IT

When the employees of an organization start realizing the importance of new innovations; the innovations start getting accepted. This in turn leads to enhancement of not only the organizational performance but even one’s own. 99.6 percent of respondents felt in this study that IT is important in conducting business in the banks (Figure 21) and same percentage also felt that it enhances the employees’ job performance (Figure 22). This alludes to the level of success achieved in IT implementations in banks.

Figure 21. IT is important in conducting business in Banks (n=243)
5.4.2 Use of IT

As reiterated earlier, once innovations percolate into day to day activities and start getting utilized by all stakeholders, then the innovation adoption process can be said to have taken roots. Thus the innovation process is considered a success when the users express commitment by using the technology over a period of time (Bhattacherjee, 1998).

The success of IT adoption in Indian banking industry can be gauged by the fact that not only 98 percent respondents use IT in their day to day activities (Figure 23), 97.9 percent of them also found IT to be important in enhancing their own job performance (Figure 24).

As a contribution to technology research, Frances Cairncross’s book, “The Company of the Future”, shifts the focus from a single-minded technology
orientation to a broad based business orientation. It states that in developing and deploying new technologies, it is crucial to understand the daily business practices that the new technologies become part of and how do both the business practices and technology constantly influence and shape each other.

Figure 23. I use IT in my Day to Day Activities (n=243)
The innovation adoption process is considered to be more effective when the users feel a comfort factor in using the new innovations. In this study majority of the respondents, 99.2 percent, were comfortable in using IT (Figure 25) thus further reflecting the effectiveness of the IT adoption process in Indian banks.
5.4.3 Communication of IT vision

The greatest challenge that any innovation adoption process in an organization faces is the communication of the strategic vision to the employees and its proposed linkage with the targeted innovation. This is what decides the effectiveness of the process. This strategic vision is basically managers' depiction of the future strategy that the organization should follow (Schwarz and Nandkumar, 2002). If this representation is dynamic and demonstrates a capability to respond to market changes and needs, the vision will result in strategies that drive innovation in the organization (Itami and Numagami, 1992). In this respect, in the banks in this study, 95 percent of respondents were in agreement that the management has communicated the IT vision to the employees (Figure 26) reflecting the effectiveness of the process and subsequent success that banks achieved in IT implementation across the industry.

Figure 26. Management has communicated the IT vision to employees (n=243)
5.4.4 Training

It has been shown in literature that a high learning burden is imposed on the adopters by the complexity of technologies. This burden gives rise to knowledge barriers resulting in inhibition of the adoption. The degree to which organizations are in a position to overcome these knowledge barriers is a function of the learning burden that the organizations bear and methods that supply side institutions deploy to reduce these barriers (Attewell, 1992; Fichman & Kemerer, 1997).

For any new technology to be accepted and absorbed, the training, its quantum, quality and the process approach plays a key role. It allows employees to remove their reservations about new technologies, get hands on experience and facilitates interaction with colleagues and outside experts about the new innovations. This enables them to become comfortable with new technologies and provides them an impetus to go in for the extra effort for learning the new innovation. Various studies have provided empirical support for the impact of facilitating conditions viz., availability of training and provision of support on perceived usefulness and perceived ease of use (Thompson et al., 1994 Venkatesh, 2000).

In this study majority of respondents i.e. 97.5 percent were in agreement that their organizations provide IT training (Figure 27). 88.1 percent of them confirmed that it is the bank’s internal training department that provides training whereas 7.8 percent of respondents agreed that it is the combination of internal training department and external agencies that provide the training to the employees and 3.7 percent of the respondents picked up self training as the mode of
training (Fig. 28). It may signal some shortcomings in the organization arranged training programs due to which they need to further hone their skills themselves but still the percentage is quite small.
When questioned about their satisfaction with the level or quantum of training imparted to the employees, 14.4 percent were very satisfied, 81.5 percent somewhat satisfied, 1.2 percent somewhat dissatisfied and 2.9 percent totally dissatisfied (Figure 29).

![Figure 29. Satisfaction level with Quantum of IT Training (n=243)](image)

In response to the query on their satisfaction level with the quality of IT training, majority of 58 percent were neither satisfied nor dissatisfied. It was 32.9 percent who were satisfied and only 5.8 percent who were very satisfied (Figure 30). Although the dissatisfaction level was only 3.3 percent, still it seems that more efforts have to be put in the organization to improve the satisfaction level of the employees. It appears that banks need to put in extra efforts to improve their training delivery processes for attaining the full benefits from the training program. The percentage of employees who are satisfied with the quality of training programs need to be consciously addressed to be increased by
communicating the importance and relevance of the training, improving the courseware, making it more interactive and interesting as well as deploying a good mix of internal and external experts on the subject and above all linking it with employee success and consequently organization success.

Figure 30. Satisfaction Level with Quality of IT Training (n=243)

Some areas of concern were visible in the frequency of IT training programs as 74.9 percent of respondents chose sometimes as the option when asked how often employees attend IT training programs (Figure 31). It was 18.6 percent who indicated that the training programs are held often and 5.3 percent picked very often as the choice. Respondents who chose never at all were in a minority of 1.2 percent. This is consistent with a mild dissatisfaction with the quantum and higher dissatisfaction with the quality of IT training by the organization in other parts of this study.
88.5 percent of respondents answered in positive when asked about if there is a training calendar for the employees and only 11.5 percent chose no as an option (Figure 32).

Figure 31. Frequency of Employees attending IT Training Programs (n=243)

Figure 32. Is there a Training Calendar for Employees (n=243)
The training system in banking industry already has had a strong structural base, but it has generally been a ritual due to there being no strategic link clearly defined between training and human resources development. At this juncture of transformation of Indian banking industry the training has to be used as an effective organizational intervention tool by identifying a clear and coherent policy of training and development within the structure of total human resource development. It is the time to integrate human resource management strategies with the business strategy (Kamesam, 2004).

5.5 Organizational Support

5.5.1 Internal Organizational Support

It is the organization support in all forms that can make any technology adoption process in an organization successful or failure. First is the internal technical support that is needed for aiding the day to day adoption challenges and guidance particularly in the initial phases of adoption. In the latter phases of adoption the internal technical support becomes more crucial during the disruptions. Employees must also perceive as well as experience in action the full management support in all the IT initiatives to understand the seriousness with which management considers the new innovations.

The importance of senior management participation and commitment has been identified as one of the potentially most important factors in IT adoption in organizations (Sohal et al., 2002) whereas another important organizational support variable identified in literature is how committed is the IT department in supporting the IT related tasks across the organization (Kim and Oh, 2000).
Even in cases where IT managers initiate a new innovation adoption, support from administrative departments is a key in its completion or frustrating the effort. The key determinants of such support would be administrators' innovativeness and their knowledge of IT. IT managers' capability to locate shortcomings of existing IT systems and to evaluate and propose alternatives to improve the IT capability of the organization is a crucial factor influencing IT adoption (Kim and Bretschneider, 2004).

Most of the respondents, 94.2 percent, were in agreement that the internal technical support is adequate for their needs (Figure 33) and 97.2 percent indicated that the top management fully supports all IT initiatives reflecting an effective communication program by top management in banks (Figure 34).

Figure 33. Internal Technical Support is adequate (n=243)
5.5.2 IT Knowledge, Experience and Expertise

It is the level of IT knowledge and experience with IT systems, across the hierarchy levels, which facilitates the IT adoption process in any organization. In Indian banks there have been dedicated IT departments, training departments as well as program implementation monitoring processes and procedures that have aided in the fast paced IT adoption programs.

Studies suggest a positive correlation between experience with computing technology and attitude towards computers and its usage (Levin and Gordon, 1989; Harrison and Rainer, 1992).

Previous research also indicates that organizational characteristics that include an organization’s prior experience with IT can also affect the IT effectiveness. This experience factor is related to human involvement and it needs to be part of the
actual users for that experience to be useful for future IT implementations (Kim and Oh, 2000).

In this study 94.2 percent of respondents felt that their organization has enough experience with IT systems (Figure 35).

The existing knowledge base of the users and its relation to the new technology seems to have an influence on technology adoption in organizations. It has been seen that personal computers were accepted more readily among organizations that had previous exposure to mainframes and minicomputers (Cohen and Levinthal, 1990).

IT knowledge seemed to be highest at management level with 94.7 percent respondents agreeing with statement that IT knowledge is adequate at management level (Figure 38) followed by 93.4 percent in agreement with the statement for supervisory levels (Figure 37) and 88.9 percent agreeing for general employee level (Figure 36). This could be due to IT programs and initiatives being led and supported from head office in almost all the banks. As suggested by studies in literature the high level of IT effectiveness in Indian banks seems to be due to the higher level of IT knowledge among employees which plays an important role in IT adoption in organizations (Mehrtens et al. (2001).
Figure 35. Bank has enough Experience with IT Systems (n=243)

Research has surmised that in today’s economy, management must understand the roles and functions of three types of technology viz., product technology, process technology and management technology (Zehner 2000).

Chwelos et al. (2001) identified IT sophistication, which pertains to the degree of management understanding of IT and their and support for using IT to achieve organizational objectives and postulated that higher levels of IT sophistication have a positive correlation with IT adoption in organizations.
IT expertise that exists amongst the various layers of the organization also can aid IT adoption process in organizations (Premkumar and Roberts, 1999).
Regarding IT expertise, 93.8 percent of respondents (Figures 39, 40), indicated that employees as well as supervisors have developed sufficient IT expertise reflecting effective training programs that are run by banks as well as extensive IT use in delivering services to the customer.

Figure 39. Employees have developed Sufficient IT Expertise (n=243)
Figure 40. Supervisors have developed Sufficient IT Expertise (n=243)

The level of technology diffusion in an organization can be measured by the degree of technology use in its various activities and potential applications that can be developed using the existing range of IT applications supporting the organization’s current operations (Desai et al., 2004).

Several other organization structure variables have been defined in the literature as factors influencing the innovativeness of an organization. One factor of interest to this study is the level of organizational complexity, which is denoted, by the number of specialists in the organization and their professionalism that may facilitate adoption of an innovation (Hage and Aiken, 1970).

5.5.3 Involvement of Employees

When employees start participating in decisions about IT planning, implementation and process improvements, then it can be assumed that the
adoption process has been effective and the IT vision communicated by management has been accepted.

In this study participation of employees in decisions about IT was indicated by 90.6 percent of respondents (Figure 41) whereas 89.3 percent were in agreement with the statement that employees take part in planning about IT (Figure 42) indicating the success level of IT adoption in Indian banking industry. The high level of employee involvement in IT implementation has been identified as an important factor for successful IT adoption (Power and Sohal, 2002).

Figure 41. Employees participate in IT Decisions (n=243)
This was further strengthened by respondents when asked about the statement that bank effectively communicates internally the IT innovations, 93.9 percent were in agreement with it (Figure 43).
5.5.4 Level of Cooperation amongst Co-workers

The level of cooperation amongst co-workers to resolve problems while using the innovation is another indicator of the maturity level of any innovation adoption process. The respondents' feedback on level of cooperation amongst co-workers to resolve problems while using IT in their jobs was overwhelmingly for neither low nor high category at 70.4 percent, 20.6 percent of them rated it high and 7.4 percent at very high (Figure 44). The response shows that there is still some way to go for Indian banks to reach the maturity level of IT adoption processes but it could also be due to general prevailing levels of cooperation amongst co-workers in the Indian industry.

![Figure 44. The Level of Cooperation amongst Co-workers (n=243)](image-url)
5.6 Perceived Ease of Use

5.6.1 Ease of Use

Any innovation must appear to be easy to understand and use or should have the potential for the user to reach that level fast for any adoption process to have any chance of success. The employees must perceive the innovation to be helping them by making their jobs easier to perform. This process is aided by effective communication of the innovation vision, meticulous planning for implementation, extensive training and full technical and management support. In this study 95.5 percent of respondents were in agreement with the statement, employees find it easy to understand and use IT, with only 2.5 percent respondents in disagreement (Figure 45) whereas 98 percent of respondents endorsed that IT has made employees job easier to perform (Figure 46).

![Pie Chart](image)

Figure 45. Employees find it Easy to Understand and Use IT (n=243)
Figure 46. IT has made employees’ job Easier to Perform (n=243)

5.6.2 Enjoyment in using IT

Enjoying an innovation signifies that users have not only absorbed the new innovation but also have started experimenting with the new technology. This experimentation and new discoveries gives rise to enjoyment in the process. Davis et al. (1992) postulated that perceived enjoyment has major impact on intention to use IT. 95.5 percent of respondents agreed that IT helps them in finding new ways of doing their job (Figure 47) and 97.5 percent of respondents indicated that they enjoy using IT for their job (Figure 48) reflecting the effectiveness levels and acceptance of the IT adoption process in Indian banks.

Studies suggest that intrinsic factors like enjoyment and usefulness or external factors such as social pressure can be powerful motivators for individuals to use IT (Deci, 1975).
Figure 47. IT helps me to Find New ways of doing my Job (n=243)

Figure 48. I Enjoy using IT for my Job (n=243)
The involvement of employees on IT initiatives can be gauged from the fact that 93.4 percent of respondents agreed with the statement that employees offer constructive suggestions for improving IT (Figure 49).

![Pie chart showing responses to the statement: Employees offer constructive suggestions for improving IT.](image)

**Figure 49.** Employees offer Constructive Suggestions for improving IT (n=243)

### 5.6.3 Implementation Process Factors

The extensive research on improving the understanding of issues in IT implementations and their possible solutions has been characterized into three categories viz., factors research, process research and political research (Kwon and Zmud, 1987).

Factors research focuses on the individual, organizational and technological aspects that play a critical role in ensuring IT implementation effectiveness. These factors include top management support, good IT design, and suitable user-designer interaction and understanding (Fuesrt and Cheney, 1982; Schultz, 1984;...
Sanders and Courtney, 1985; Ives and Olson, 1984; Churchman and Schainblatt, 1965).

Process research is focused on social change activities and postulates that IT implementation is successful when organization wide commitment to change exists; projects are well defined and meticulously planned, and the change theories steer the administration of the process (Ginzberg, 1979).

Political research which is of particular interest to this study proposes that the varied vested interests of IT stakeholders have a considerable impact on the success of IT implementation. These interests need to be recognized and duly managed to ensure success of IT implementation efforts (Kramer, 1981; Markus, 1983).

Five major related factors that have an impact on processes of varied implementation stages have been identified by synthesizing literature on technology diffusion, organizational innovation, and IT implementation. These relate to characteristics of the user community (job term, learning, resistance to change), characteristics of the organization (specialization, centralization, formalization), characteristics of the technology being adopted (complexity), characteristics of the task to which the technology is being applied (task uncertainty, inter-organizational dependence) (Kwon and Zmud, 1987).

Majority of the respondents, 79.6 percent, rated “User Training” as the most important factor for successful implementation of IT in their banks (Figure 50). Literature indicates that commencing and supporting organization wide changes require user community to be trained in the use and potential of new technologies
so that they can deploy them effectively in their day to day activities (Power, 2004).

Although in training area banks have done a lot of groundwork and the results are visible as enumerated elsewhere in this study but still there is scope in this area in terms of improving the quality of training and a more process oriented approach covering each employee of an organization. This will enhance user involvement leading to better results from the IT implementation process.

![Figure 50. Factors important for Successful IT Implementation (n=243, Multiple Responses Possible)](image)

5.7 Perceived Usefulness by User

5.7.1 Perceived Benefits

The direct benefits of an innovation that any user will perceive would relate to its impact on work or processes that used to take more time earlier and were more tedious without the new innovation. Any innovation should be useful for a user in a demonstrable way in making one's work easier or less time consuming or
provide an alternate better way of doing things. More the direct benefits that users experience more the effectiveness of IT adoption it will lead to.

The perceived benefits that have been found to be important in previous studies include benefits to decision makers, enhanced effectiveness, increased productivity, knowledge building, avoiding same mistakes and better customer services.

In this study, 98.8 percent of respondents indicated that IT has helped them in easier reconciliation of accounts (Figure 51) and 100 percent confirmed that IT is helping them in automatic ledger generation (Figure 52).

Figure 51. IT helps in easier reconciliation of accounts (n=243)
5.7.2 Productivity & Job Quality

Any new innovation must help a user in accessing more in-depth information related to one’s job for it to become effective and useful. A user should feel that the new innovation increases his/her productivity, allows for a greater work control and enhances job quality for him/her to adopt it and use it in day to day activities effectively. This will lead to a greater effectiveness of IT adoption process in an organization.

Studies have found IT investments to be a critical factor in enhancing productivity and reducing costs (Bessen, 2002).

In this study 89.7 percent of respondents have agreed with the statement that IT is helping them in accessing in-depth information related to their jobs (Figure 53).
98.4 percent of respondents have agreed with the statement that IT increases their productivity (Figure 54). As brought out by Jonash and Sommerlatte (1999), the next generation business model operates on two fundamental principles:

The organization's management must drive innovation across the entire enterprise to create value.

They must leverage technology and competency to drive sustainable innovation and capture competitive advantage.
Individuals are known to be more creative in their work when they feel that they are free to choose as to how to carry out the tasks that they are supposed to do (Amabile and Gitomer, 1984). 98.8 percent of respondents agreed with the statement that IT is allowing them for a greater work control (Figure 55). IT has been recognized as a new technology tool that impacts the management and control of production and service systems (Knol and Stroeken, 2001).
Figure 55. IT allows for a greater Work Control (n=243)

97.5 percent of respondents agreed with the statement that IT enhances job quality (Figure 56).

Figure 56. IT enhances Job Quality (n=243)
5.7.3 Importance of IT in Performing one’s Job

How important a new innovation becomes for employees in performing their jobs is the key to know whether the innovation has become a part and parcel of day to day activities and whether it has succeeded or not. When asked how important it is for employees to use IT in performing their jobs, 73.7 percent of respondents considered it important and 19.8 percent considered it very important (Figure 57). It categorizes IT in Indian banks as a successful innovation.

![Figure 57. Importance of IT in Performing One’s Job (n=243)](image)

5.8 External Factors

5.8.1 IT usage by External Stakeholders

For any innovation to become urgent for adoption in any organization, level of use of that innovation by external parties/ vendors/ associates plays a key role in adoption. The pressure to adopt forces and increases the pace of adoption of any
innovation in an organization if the external world has started using it extensively. The external parties would include but not be limited to the industry in general, business associates and partners and competition.

Studies indicate that increase in competitive intensity in the external environment does goad organizations to investigate new ways to enhance their productivity and seek a competitive advantage (Themistocleous et al., 2004) and thus higher levels of external forces / pressures can positively impact IT innovation adoption in organizations (Kamal, 2006).

However empirical research has found an unambiguous support only for relationship between the competitiveness of a market and the rate of diffusion of an innovation in that market (Baldwin and Scott, 1987).

In response to the question of extensive use of IT amongst these stakeholders, 98.4 percent of respondents were in agreement that banking industry uses IT extensively (Figure 58).
96.8 percent respondents were in agreement with the statement that bank’s business associates and partners use IT extensively (Figure 59). The studies suggest that the external agents play a crucial role in determining the speed of IT adoption in an organization and these include trade associations, trade partners, franchisers and voluntary groups (Treadgold, 1990).
Regarding the use of IT by competition, it was 97.2 percent of respondents who agreed with the statement that competition uses IT extensively (Figure 60).
The extensive use of IT by external stakeholders has affected IT adoption process in Indian banks positively and provided it the urgency required to make it a success and also reduce resistance within the organization.

5.8.2 Role of Government and Central Bank

Apart from the role of abovementioned external stakeholders, the role of Government and RBI is very crucial in how their policies promote and support IT implementation in banks. The use of IT by central bank itself forces the pace of IT implementation in banks since all the transactions finally have to be reconciled at RBI level and if IT has been deployed by RBI, it becomes mandatory for other banks to follow suit.

Studies have indicated that the existence of a government-wide policy and legal framework can positively impact IT innovation adoption in organizations (Kamal, 2006).

Regarding Central bank’s use of IT, 96.3 percent of respondents felt that central bank uses IT extensively (Figure 61) and even the Governmental policies support for IT implementation was endorsed by 95.4 percent of the respondents (Figure 62).
Figure 61. Agreement with Central Bank using IT extensively (n=243)

Figure 62. Governmental Policies support IT implementation (n=243)

5.8.3 Role of Global environment in Use of IT

Sometimes even the global accords like Basel agreements mandate or require extensive use of IT without which it is not possible to meet the stringent
requirements of data management, data security and disclosure norms of these agreements.

Figure 63. Agreement with Global Accords mandating extensive use of IT (n=243)

95.9 percent of respondents were in agreement with the statement that global accords like Basel influence the extensiveness of IT in organizations (Figure 63).

When asked about external environment's (global, industry, trade bodies etc.) impact on the deployment of IT infrastructure in organizations, it was 95.1 percent of respondents who agreed with the statement that it does have a major impact (Figure 64).
Figure 64. Does External environment have a major impact on IT deployment? (n=243)