

# IT GOVERNANCE IN BANKING SECTOR: VAL IT AND RISK ASSESSMENT PERSPECTIVE

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**ABSTRACT:** *Significance and the influence of information technology is an undeniable and unquestionable fact in the business today. While the usage of IT in the banking industry has probably contributed most comparatively to other industries by providing new trends to facilitate the customer and strengthen the operational section as well. The investment over IT segment by banks demonstrates the level of reliance over the IT and associated infrastructure. In order to make a fool proof IT section, maximum of investment out of IT dedicated budget has been expended over the security sector today. IT governance is another discipline that if employed appropriately, provides maximum security guarantee to the management.*

*IT governance not just assists the management to monitor, improve and calculate the performance of the IT but also provides useful information about the risks that are associated with the IT and could affect the operations if not managed properly.*

*That eases the process of identifying the potential risks and employs the recommended measures before and after occurrence of the risks. In this research, some useful facts are accumulated from the IT segment of 20 large and influential banks of Pakistan. These facts could become an effective guideline for technical persons who are associated with banking industry to upgrade their knowledge about the IT status in banking industry of Pakistan today.*

**Keywords:** IT Governance, IT Security, Banking, IT governance Frameworks, IT Risks

## 1. INTRODUCTION

Information technology has become a back bone of most of the organizations. Banking sector is one sector which relies heavily over the performance of IT, not only to improve their efficiency and gain profit, but also earn best reputation and maintain it.

As we know anything that is as much significant and impact creating as IT is, that needs to be governed or managed carefully to take maximum benefits of adopting the technology in the business.[1] Banks have started to dedicate separate budget to spend over the IT that includes employing new tools, technologies and also hiring experts and training their employees in this context.

Any department consuming huge amount of budget always need to be monitored and governed properly so that the value delivery could be achieved out of it. For this, different mechanisms are being adopted to measure the performance of IT department and its co-related operations to put a check over it.[2]

Risk is another factor that is always associated with the IT in the financial institutions such as banks, therefore identifying the risk areas need to be protected on priority bases, predicting the potential risks and addressing them by employing different mechanisms to continuously monitoring the associated operations become also another crucial tasks for the banks. By doing this, the potential risk could not be just noticed before its occurrence but also mitigating its impact, finding the backup solutions etc are the useful steps could be taken which assists banks to lessen the loss of the risk.[3]

In this context, different IT governance frameworks are introduced in the markets which provide complete guideline and assistance to organizations to adopt IT with optimum

security measures and other vital associated steps to take optimum benefit out of technology incorporation in the organization. [4]

## 2. IT BENEFITS FOR PEOPLE AND ORGANIZATIONS

The organizational structure is intended to complement the goals and objective of a company. It is also the base of the culture of company and affects behavior of employee and support. Effective structure of organization is adaptive to process needs and likely changes to improve the results of input of resources. Structure should allow for elasticity, support creativity of employee and use the skills and ability of workforce efficiently. [5]

## 3. IT USAGE EVOLUTION IN BANKING

More and More banks are using technology to expand and offer financial services and products to improve customer services and reduce operational cost. Banks are making and continuing invest further in technology to uphold and improve their infrastructure, offer new electronic information based services, handle risks and scrutinize transactions to identify and avoid money laundering and terrorist financing. Expending figure of bank branches, rising size of bank operations and growing fraud incidence made it vital for banks to initiate positive response as the need. [6]

Online banking has helped for small banks to adopt new technologies cheaply. Automated underwriting and credit scoring have offered chance to borrowers to take credit cards, advances and loans for small business. People can simply get credit reports and scores and confirm the information. They may approach credit office if information is wrong and so develop their credit rank. IT has helped other major inputs to profitability of associations. [7]

Decisions or Credit are done quicker and cheaper than before a decade. Latest technologies have increased competition, made it easy for local organizations in offering new products and contend effectively with organizations out of market. Additionally, security process; which is also extremely reliant over advances in IT has expanded the pond of advance lenders and made primary and secondary markets a lot efficient.

Computers and software are being used in operations because of processed transactional size and density daily; actually, nearly each operational phase within an organization is capable to employ some technology. Saving organizations utilize technology to expand funds and business plans, calculate and design risk of interest rate, trail trust accounts and watch doubtful activities, briefly, to handle about each phase of operations. As technology changes and organizations persist to enlarge trust over it; risks also increase. Such increased risks need useful controls to guarantee the confidentiality, integrity, and availability of data. [8]

#### **4. LATEST IT APPLICATIONS IN BANKING**

IT is a parallel to promote the expansion and progress of economy. Globalization has fuelled applying IT in banking. With firm controls offering ways to de-regulation; banks have geared up their communication system to get competitive edge out of E-Banking, which has quickly become a worldwide reality. IT in business has changed tremendously in price and equation of access, and also banking services and products reasonable and accessible to remote areas also quickly.

Technological modernism continuation and rivalry amongst present banks and new competitors have permitted for much wider range of banking services and products to befall available and supplied to retail and wholesale clients via electronic distribution channel jointly referred to as e-banking. Few of the modern IT devices perhaps defined as follows:

- Clearance system of Debit and Credit
- System of Electronic Settlement and Clearance
- Automated Teller Machine (ATM)
- Bank net
- Tele-Banking
- Phone and Mobile Banking [9]

#### **5. RISKS AND BARRIERS ASSOCAITED WITH IT APPLICATIONS**

IT usage in banking segment has earned sufficient amount of gains to banks plus its clients. But at the reverse of varying financial scene from brick to click banking, IT application in banking, worsens conventional banking risks and brought many hazards to the banking authorities. These augmented risks endure even if system uses closed networks as a substitute of open networks. It is identified risk as very key part of e-banking. Risk involved in IT in operations comprises risks of security, legal, strategic, money laundering, and reputational risk and so on. Few other hindrances IT applications related contain need of grave investment in software and hardware with relative extensive growth time. It might guide to problems about price control, addition of

conventional system to new system and possibility of glut capacity. More because of exponential increase in amount of technical creations, a fright of getting adopted method outdated soon exists.[10]

#### **6. IT ASSOCIATED RISKS IN BANKING**

Risks are natural while using whichever technology and hazards to organizations arrive from internal and external sources. Hackers, displeased workers and faults may badly influence reliability. Unauthorized access to networked systems; linked to database of organization and get information that is sensitive and nonpublic. Organization websites may be incorrectly modified. E-mail comprising secret corporate information might mistakenly distribute.

This amplified technology reliance has notably augmented financial risks and loss of reputation to illegal access to clients and financial records of organization, services disruption to clients and fraud. Organization must select about way to handle and control such risks.

Organizations should form and uphold ample control systems to be able to discover, calculate, watch and manage IT risks that could badly influence performance and reliability. Organizations also must plan IT risk controls to stop, lessen and/or to sense and address errors. This process all the way through must engage representation from all functional areas, such as, finance, audit, legal and IT. Though, eventually board of directors and executive are in charge to develop and apply policies, processes, and controls that guarantee confidentiality, integrity, and availability for organization's data and systems.

The intensity of technical knowledge needed senior management differs and is reliant on size and nature of the operations and the amount of complications within its technology setting. However, at least, directors and senior executives must have an obvious perceptive of risks originated with technology, give clear direction on management practices for risk and get a lively supervision position to monitor activities to alleviate the risk. [11]

#### **7. VALUE IT MEASURING IN BUSINESS**

IT departments that spend time and effort to calculate the business value of offered services could explain how IT donates to strategic triumph of companies. When value of IT is calculated via management and shareholder benefits, return on investment, net present value and employee productivity growth, department is capable to show its key role in guaranteeing the success of company. Use of quantitative or economic information assists to show impact of IT on outcome of the company. [12]

##### **7.1 Management and Shareholder Benefits**

IT investments ought to sustain objectives of company and spotlight all of their efforts on needs of end users. While shaping business worth, it's key to note down and calculate the benefits delivered to business, for example improved income, quicker information access and enhanced service for customer. IT services are capable to improve the customer experience by giving positive interface via a well designed website that gives tremendous service customer. [13]

##### **7.2 Determining ROI**

Measuring ROI of project of IT could reveal executive about expectation to gain if they bear new or current investment over IT. After identification of cost, calculation of ROI eases by taking revenue of estimated investment and deducting the cost of investment. Result is divided by the cost of investment and multiplied by 100. The result is a fraction shows rate of return on IT project. [14]

**7.3 Determining NPV**

To remove a little doubt of investment in long term project of IT, NPV could be used at a present price number. For NPV calculation, rational price, income and reduction rate estimate could be used. Time period for investment should also be decided. Table for time value of money or formula of NPV presented in majority of spreadsheet programs could be used for calculating NPV of projects of IT. The result is price in today's dollars of prospect net cash inflows or outflows linked to IT project. [15]

**7.4 Productivity of Employees**

Calculating productivity of employee gives confront to department of IT doing efforts to measure this advantage to organization. Such as, computer's chip manufacturer Intel recognizes developments in productivity of employee by calculating time based efficiencies obtained by employees who are capable to make further. Formula of Company considers employee numbers affected the sum of employee time obtained and average indirect costs of employee. Finance and other sections could supply department of IT information and help to correctly calculate the output. [16]

**8. TWO CATEGORIES OF IT INVESTMENT**

While striving to make correct investment in IT, organizations time and again find themselves tattered between two rival essentials: necessity to bound quantity of wealth dedicated for IT, on one hand, while simultaneously guaranteeing that they expend funds on IT where it can assist to develop operational revenue. Executives are often at the center of mission of the companies to supervise their expenditure on IT optimally.

Largely, it is the responsibility of finance department to guarantee that organizations expand the skill and processes required to make sure that every IT investment decision; and not to invest; is informed. But even though most of the finance management has a clear authorization to supervise IT related decision making, but often they found short of the visibility needed to do so successfully. [17]

**9. METHODOLOGY**

The methodology for this research was a questionnaire based survey to 20 leading and influential banks of the Pakistan. Familiar and commonly used IT governance frameworks provided the guidelines to design a comprehensive questionnaire which addressed highly important factors associated with IT governance in the banks which are rated very high while governing the IT after adaptation. Different questions were asked from the responsible and appropriate technical persons of their respective banks in order to find out the current scenario in the banking industry of Pakistan in the context of governing the IT while utilizing it at optimum level. These questions addressed sectors like risk

analysis, usage of IT governance frameworks, mechanism and usage of different tools and techniques to measure the performance of IT and the obstacles that occur while taking the maximum and desired advantage out of the implementation of IT in the business. After taking the response by recipients, it was possible to perform collective and comparative analysis to understand the scenario of banking industry of Pakistan in the targeted sections.

**10. FINDINGS**

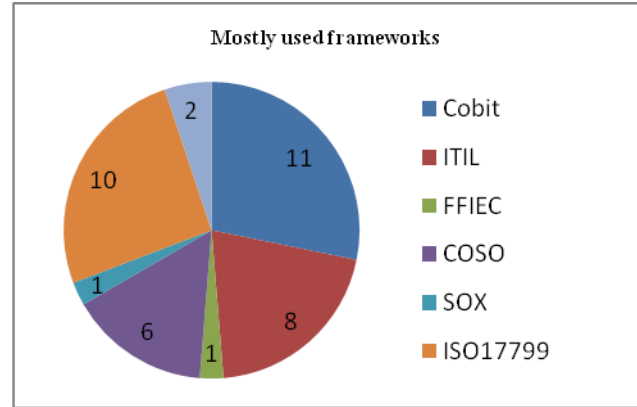


Figure 1

There are certain I.T governing frameworks or practices which are designed to provide organizations guidance to govern the certain I.T areas in a different manner. Every framework consists and covers separate areas of I.T governance and delivers guidelines to address different factors relevant to I.T to achieve the best results.

In order to attain the knowledge about the frameworks being used by banking industry of Pakistan, a question was asked that which is/are the frameworks being used by their banks. For this sake, 6 most common framework choices were given which contained Cobit (Control Objectives for Information and Related Technology), ITIL (Information Technology Infrastructure Library), FFIEC (Federal Financial Institutions Examination Council), COSO (Committee of Sponsoring Organizations), SOX (Sarbanes-Oxley) and ISO17799. There are few organizations which are using more than 1 framework as guideline; therefore the feature of selecting more than 1 framework was also enabled to get the actual information by the recipients.

According to this research, most commonly used framework is Cobit with 11 recipients selecting it while ISO17799 is being used in 10 banks in Pakistan. Whereas, ITIL stood 3rd mostly used framework in order to achieve the governance of I.T in the organizations.

A question was asked from 20 banks that which are the risk areas related to I.T they monitor or manage in their banks. 11 common options were given to them and with the authority to select more than 1 if applicable. These 11 areas included Information Security, Privacy/Data Protection, Information Technology Infrastructure Availability, Data Center Operations, Theft/Loss of Assets, Outsourcing/Vendor Risks, Business Continuity, Disaster Recovery, Information Technology Compliance Activities, Off Shoring and Information Technology Projects/Initiatives.

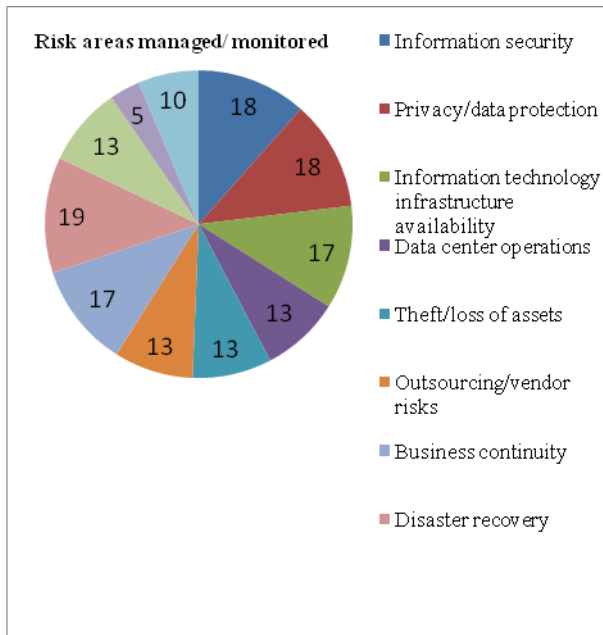


Figure 2

According to result of this question, Business continuity and Disaster recovery is the most commonly risk area being monitored and managed by the banking industry of Pakistan. 18 out of 20 banks managing these two risk areas, which is quite a ratio in this context. Apart from it, Information technology infrastructure availability is the second mostly managed area as 17 respondents selected it, Outsourcing/vendor risks; Data center operations and theft/loss of assets are the third mostly monitored areas of the risk. Similarly, off shoring is the least monitored and managed risk area in this perspective.

There are certain mythologies around used to measure the I.T performance and its co-related components/resources. 20 recipients were asked that which methodology they using currently in their organization to measure the performance and above shown graph in figure 11 explains it. The methods used to analyze its performance included in this question were: Benchmarking, Performance metrics, Customer satisfaction analysis (survey etc), Focus groups, Self-assessment, Outside assessment, Audit, Malcolm Baldrige Award process and criteria, Balanced scorecard and Performance dashboards. The result illustrates that Audit is the mostly used method in the industry of banking in Pakistan to measure the performance with 13 banks among asked 20 adopting and using it, while performance dashboards is the second highest ranked by usage with 10 recipients using it.

There are several methods used to measure the value of IT projects and investments and thus managing the performance to govern I.T in a proper manner. Recipients were asked that which are the methods that are being used by their banks. For this sake, choices of most common methods were given

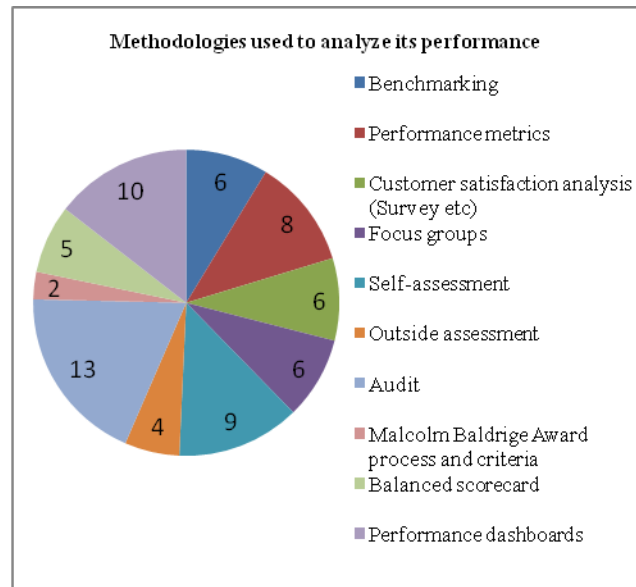


Figure 3

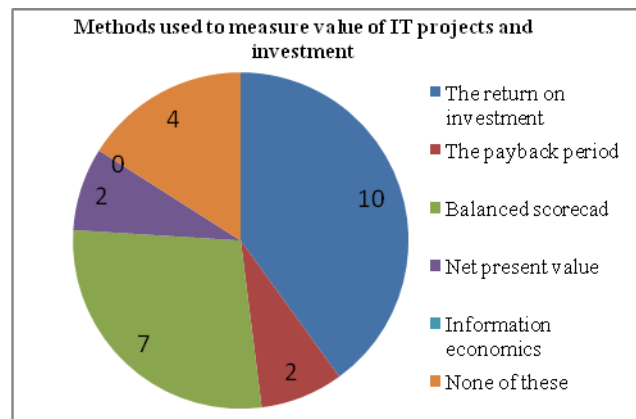


Figure 4

such as; The return of investment, The payback period, Balanced scorecard, Net present value and Information economics. Interestingly, the return on investment is the widely used methods with 10 recipients choosing it, while the balanced scorecard comes on second as per usage. 4 recipients replied that their bank is not using any of these methods.

Question was asked that which are elements they consider while measuring the value of I.T. The options given to them were financial elements, nonfinancial business value, nonfinancial business risks, and nonfinancial IT value and nonfinancial IT risks. As expected, the financial elements were mostly considered elements in this context as 13 persons selecting it, remaining elements in this list were way behind of this element.

Measuring the performance of IT department becomes essential if we try to measure and manage the performance of IT. In this context a question was asked that which method/methods banking industry of Pakistan is using to measure the performance of their IT department. This question included the choices of a methodology developed in-house, a balanced scorecard, only cost or financial-oriented metrics or something else. A methodology

developed in-house is on top of the list with 8 recipients selecting it along with a balanced scorecard on second with 5 selections. The result shows that there isn't any bank without measuring the performance of IT department which is quite an achievement and maintenance for Pakistan's banking industry.

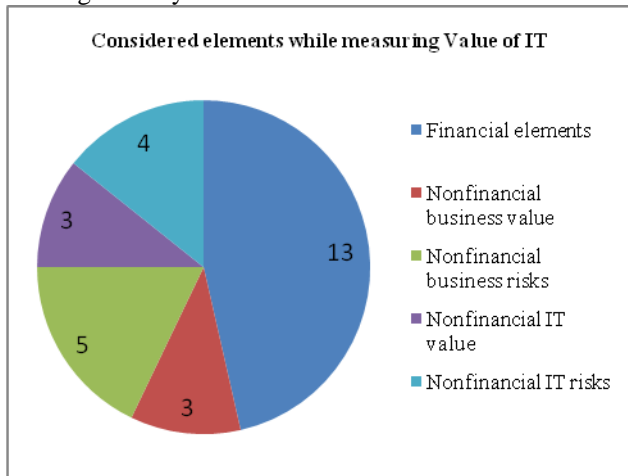


Figure 5

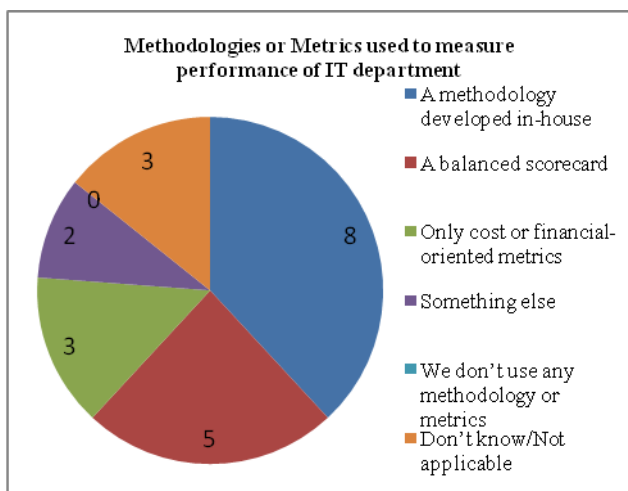


Figure 6

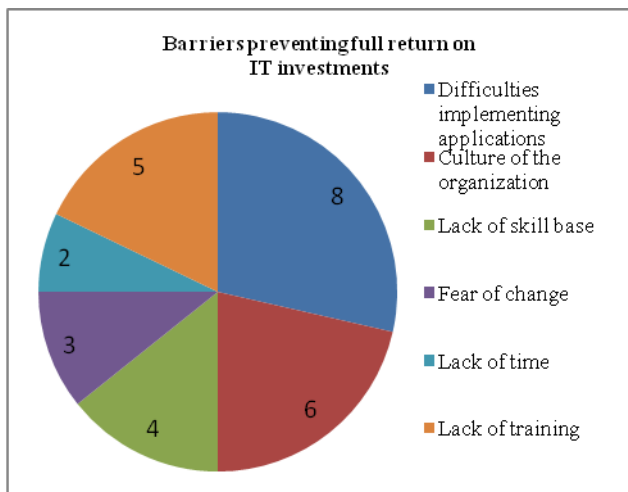


Figure 7

Another question was raised by asking the 20 recipients about barriers they face preventing full return on IT investments. This question included options of difficulties implementing application, culture of the organization, lack of skill base, fear of change, lack of time and lack of training. 8 recipients replied that difficulties implementing application is the biggest barrier which prevents full return on IT investments.

**11. CONCLUSION**

In this research, vital features of IT governance are addressed that play significant and meaningful part in the establishment, running, growth and sustainability of the business of banking industry. Since the banks and associated financial institutions have started to rely heavily over the performance and delivery of the IT and for this sake dedicated and huge finance are expended over the employment, management, monitoring and upgrading the technology.

By doing the analysis over the information attained in this research through survey, it has been noticed that the largest barrier that prevents the full return on investment over IT is when banks need to implement new applications in the system. That indicates about the flaws in the upgrading systems of the IT sector of the banking industry.

Another noticeable fact that came out of this research is that while calculating the performance of IT and its associated operations, majority of banking management analyze the financial elements that illustrate the importance of finance being expended over the IT.

A good sign that came up is that every bank employ at least 1 IT governance framework to govern the IT appropriately, but this section could be further strengthened to use multiple or at least 2 frameworks simultaneously.

This research is valuable and handy guideline for the banks to build up the IT governance and meet up the challenges in the banking industry in the perspective of technology. Governing properly and up to the desired standard certainly guarantee the expansion, development and constancy in the core business of the banking industry. Besides, new customers get attracted by banks after offering new, innovative and customer desired services in the field of banking to facilitate the clients further in appropriate manner.

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