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Mapping of BASEL III and COBIT 5 framework in Banking Sector of India: A Futuristic Approach

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Abstract: Banking sector has undergone many changes due to liberalization and introduction of Information technology. These technologies have delivered many benefits to the banking system such as meliorated quality of services, better customer satisfaction through various communication links like mobile banking, internet banking, ATM's which helped banks to bring their customers close to them, it also improved the storage and retrieving facilities. But uses of these technologies are also the root cause of many risks. Therefore to manage risk and govern the Information technology we require IT Governance framework. The Indian Banking Sector also has to comply itself to the Basel Norms. According to the Basel Norms, it is mandate to maintain threshold amount of the capital to manage the risk, this implies that lessen the risk lesser would be the capital requirement. Basel II requires more capital than Basel III and is also more focused on operational risk and not capable to mitigate some risks such as third party risk, etc. Basel Committee also imposes on the bank to adopt the framework that can be used for Risk Management. For this purpose, COBIT 5 Framework can be used as a governance framework. The research paper focuses on mapping the Basel III guidelines to the COBIT 5 framework, so that the banking sector can adopt the framework.

Keywords: IT Governance, COBIT 5, BASEL III, Indian Banking Sector.

I. INTRODUCTION

The success of Indian Banking Sector is highly dependent on how we accept and use the advanced technology. In the modern era banks are serving their customers by various communication links such as internet banking, ATM's and mobile banking. These technologies give a boon to banking sector and also improved the quality and delivery of services [9]. Banking sector uses latest technologies and advanced features, but these features can make banking sector vulnerable in terms of their security. Hence it is very important for the banks to protect themselves and their customers by using proper mechanism, it is also important to protect the personal data of their customers. For this IT Governance plays a vital role, as it is a subset of Corporate Governance..

II. THE NEED OF IT GOVERNANCE IN INDIAN BANKING SECTOR

Information is extremely important in making critical decisions related to business. As a result, an organization makes huge investments on IT, and in return expects value addition from these investments. So to attain business objectives, IT goals should be strategically mapped with the business goals. Banking Sector is also similar to these organizations, rather than more highly critical infrastructure. To manage and govern IT, IT Governance has provided many frameworks, policies, guidelines and procedures. IT Governance is the duties and practices that are followed by the senior management, board of directors [11]. The goals of IT Governance are strategic alignment, value delivery, Risk management, resource management and performance management [1].

In banking sector transparency, effectiveness, risk management and stakeholder's trust are the basic necessities. If it fails to hold itself the results could be reputational damage, unfavorable publicity, loss of trust among the stakeholders. IT Governance helps to manage the conflicts of interest, to reasonably treat stakeholders, to comply with the laws and regulations; it also helps in audit functions both internal and external [13]. The risk is relatively less if the banking sector is adhered to the IT Governance, all laws and norms are properly followed. The banks have to comply with the global norms of BASEL. BASEL basically states that, the capital requirement of the bank should be proportional to the risk, the bank is exposed to, and it improves the risk management process. It also makes aware the reality that IT has inspired the banking functions and the market's best practices have changed considerably after the introduction of the BASEL standard [10].

III. TRANSITION OF BASEL II TO BASEL

Rapid changeovers in the financial sector also impacted the banking sectors around the world, the new technological innovations and progress has exposed the business of banks to the higher magnitude of the risk. Therefore to protect the banks from the risk Basel Committee on Banking Supervisions (BCBS) under the advocacy of Bank for International Settlements (BIS) took the initiative to place the adequate controls to manage the risk and came up with BASEL Norms. Basel has a great impact on the business of banks and provides a methodology to mitigate the operational risk, market risk, security risk and liquidity risk [6] [8].

BASEL I who was introduced in 1988 was stubborn in nature, as it was unable to identify different types of risk. It did not have the capability to differentiate between the loans borrowers; as a result a well-established company was equal to the recent company in terms of capital needs without verifying the capability of the company to repay it.

The various risk involved such as market risk, credit risk, operational risk was not addressed in BASEL 1. The incentive structure for better risk mitigation was absent in this norm. the recent company in terms of capital needs without verifying the capability of the company to repay it.

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BASEL 2 was more risk sensitive and a flexible framework. The BASEL committee suggested this norm in 1999, but it was globally accepted in 26 June, 2004. It aligned the financial capital to the fundamental risk. The risk management perspective was important in BASEL 2 which introduced the concept of operational risk. This norm needs the financial service industry to hold certain threshold value of capital, so that it can be used in the time of emergency and this can also build public confidence and will increase public confidence. It also focuses on internal risk management methodology [10].

BASEL 3 was an enhancement to BASEL 2 Norms. It was introduced to overcome the flaws that were present in BASEL 2. Basel 3 includes IT architecture, IT governance and various risk methodologies. Basel 3 covers large area of other party risk/ counterparty risk, securitization and involves missing risk factors. Basel 3 improves the regulation and risk management of financial services industry and it gives the transparency to the system. Basel 3 has a great impact on trading book, makes capital charges materially and enhances the activities in terms of capital intensive. Basel 3 introduced leverage ratio, revised capital buffers, liquidity coverage ratio [8].

IV. WHY COBIT 5 FRAMEWORK CAN BE USED?

An IT Governance framework COBIT 5 is the comprehensive tool to implement governance in an organization. The new COBIT 5 framework has integrated COBIT 4.1, VAL IT 2.0 and Risk IT framework to provide better governance and management in an organization [1]. COBIT 5 ensures that the requirements of the stakeholders are fulfilled. COBIT 5framework is used for both control and IT Governance. Other standards like ITIL and ISO 27001 covers certain specific arena and can also be mapped to this framework.

V. BANK WISE CRAR DISTRIBUTION

Table 1 and Table 2 depict the CRAR ratio of Public and Private Banks in India. Similarly Figure 1 and Figure 2 show the graphical view of the same. This exhibits that BASEL III and COBIT 5 can be easily implemented in Indian banking sector.

VI. MAPPING OF BASEL III AND COBIT 5

Table 3 shows the mapping between BASEL III and COBIT 5, the COBIT 5 processes are mapped with the IT Guiding Principles for BASEL III [7].

Public Sector Bank

Table 1.Bank Wise Capital Adequacy Ratio of select Public Sector Banks in India [2] [3] [4] [5]

Year	State Bank of India	Central Bank of India	Punjab National Bank	Canara Bank	Bank of Baroda
2008-09	14.25	13.12	14.03	14.1	14.05
2009-10	13.39	12.23	14.16	13.43	14.36
2010-11	11.98	11.64	12.42	15.38	14.52
2011-12	13.86	12.4	12.63	13.76	14.67

Private Sector Bank

Table 2.Bank Wise Capital Adequacy Ratio of select Private Sector Banks in India [2] [3] [4] [5]

Year	Axis Bank	ING Vysya Bank	ICICI Bank	HDFC Bank	Kotak Mahindra Bank
2008-09	13.69	11.65	15.53	15.69	20.01
2009-10	15.8	14.91	19.41	17.44	18.35
2010-11	12.65	12.94	19.54	16.22	19.92
2011-12	13.66	14	18.52	16.52	17.52

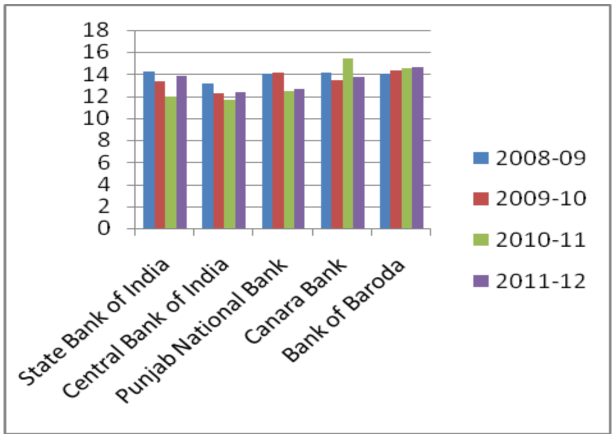

Figure 1. Graphical view of CRAR [2] [3] [4] [5]

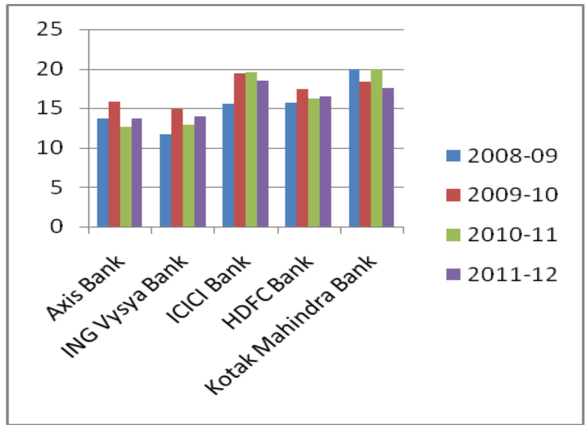

Figure 2.Graphical view of CRAR [2] [3] [4] [5]

Table 3. Mapping of BASEL III and COBIT 5 [1] [6]

PROCESS IN COBIT 5	Monitor, Evaluate & Assess	MEA1 Monitor and Evaluate Performance And Conformance				✓			✓	✓	✓
		MEA2 Monitor System of Internal Control					✓				✓
		MEA3 Monitor and Evaluate Compliance with External Requirements					✓			✓	✓
	Deliver, Service & Support	DSS1 Manage Operations									
		DSS2 Manage Assets									
		DSS3 Manage Configuration									
		DSS4 Manage Service Requests and Incidents									
		DSS5 Manage Problems									
		DSS6 Manage Continuity				✓					
		DSS7 Manage Security									
		DSS8 Manage Business Process Controls									
	Build, Acquire & Implement	BAI1 Manage Programmes and Projects									
		BAI2 Define Requirements								✓	
		BAI3 Identify & Build Solutions									
		BAI4 Manage Availability and Capacity									
		BAI5 Enable Organizational change									
		BAI6 Manage Changes									
		BAI7 Accept & Transition of Change									
		BAI8 Knowledge Management									
	Align, Plan & Organize	APO1 Define the Management Framework for IT									
		APO2 Define Strategy						✓			
		APO3 Manage Enterprise Architecture									
		APO4 Manage Innovation							✓		
		APO5 Manage Portfolio									
		APO6 Manage Budget & Cost		✓							
		APO7 Manage Human Resources									
		APO8 Manage Relationships									
		APO9 Manage Service Agreements				✓					
		APO10 Manage Suppliers									
		APO11 Manage Quality						✓	✓	✓	
		APO12 Manage Risk			✓				✓	✓	
	E Di &	EDM1 Set and Maintain the									

		Governance Framework									
		EDM2 Ensure Value Optimization									
		EDM3 Ensure Risk Optimization									
		EDM4 Ensure Resource Optimization									
		EDM5 Ensure Stakeholder Transparency	✓								
Basel III			**Transparency in corporation**	**Liquidity Risk**	**Likelihood of Risk**	**Business Continuity**	**Internal Control & Audit**	**Risk Management Process**	**Requirement f Effective supervisor approach & techniques**	**Process, Policies &**	**Independent Evaluation**

VII. BENEFITS OF COBIT 5 TO INDIAN BANKING SECTOR

In today's era all the business whether it is banking or IT industry or any other business is so much dependent on Information technology, and it is a typical task to run all these businesses without the IT governance, and Separation of IT governance from enterprise governance is almost impossible [12]. COBIT 5 framework is a composite of both 'governance' and 'management'.

a. Managing the innovation by technologies and new products in IT domain is pivotal for achieving the corporate objectives of bank in Indian banking sector. COBIT 5 gives the control to MANAGE INNOVATION in APO4 which covers all the governance aspects and all goals [1].
b. Consistency in IT services and transparency with stakeholders lead the business in a new avenue and COBIT 5 helps to maintain the transparency with IT governance in his control Evaluate, Direct and Maintain EDM5 [1]. This control plays a vital role in Indian Banking Sector.
c. Now the banking sectors are using cloud computing for storing their data. With cloud computing the banks can reduce their investment in hardware, software and have a better control over the data. The best practices of COBIT 5 can be used for cloud implementation to give a holistic advancement which integrates the assurance, IT security and regulatory compliance [1] [13].
d. COBIT 5 provides its extensive executive summary, Control Objectives, Frameworks, guidelines and implementation tool sets free of charge [1]. It charges money only for the audit guidelines. So even small private sectors banks can use COBIT 5 in their organizations and achieves their IT related goals.
e. Now-a-days in banking sector's everything is tackle with computer systems means most of the work is done online. So there are many chances of getting hacked or attacked by black- hat community (Cyber fraud). And there is a lack of Corporate Forensic Governance in Indian Banking Sector. By using COBIT 5 banking sector covers issues of forensic governance.

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