

" INFORMATION TECHNOLOGY MANAGEMENT CHALLENGES IN AUDIT CONTROL "

Mr. Krishna Murthy M. S¹, Er. Bedre Heeramani ²,

Er. Bedre Nagaraj³

¹ Finance Manager & Tax consultant, Industry, Shivamogga

²Lecturer Computer Science Dept., Sahyadri Science
College(Autonomous), Vidyanagara, pushpa c/o Sri Erannaswamy, Infront
Anjaneya temple, Lig24, Vinobanagara, Shivamogga

³Lecturer Computer Science Dept., Sahyadri Science
College(Autonomous), Vidyanagara, pushpa c/o Sri
Erannaswamy, Infront Anjaneya temple, Lig24, Vinobanagara,
Shivamogga

Abstract

In the era of today's technological advancements as mobile technology, cloud computing, Multimedia computing and various social media's -facebook, watsup, LinkedIn, creates internal threats to organizations. Traditional security models focus on controlling external hackers. IT internal audit can play a vital role in evaluating the organization's information security strategy. This paper focus on the Challenges of information technology management and audit control.

Keywords: Algorithm, Audit, Cloud, Multimedia

1. INTRODUCTION

Traditional method of auditing consumed lot of time and difficult task. This lead to creation of electronic data processing (EDP), computer information systems (CIS), and IS auditing. At that time, the need for an IT audit function came from several directions.

Auditors, corporate and information processing management recognized that computers were key resources for computing in the business environment and similar to other valuable business resource within the organization, and therefore, the need for control and auditability is critical.

Professional associations and organizations, and government entities recognized the need for IT control and auditability.

The early components of IT auditing were drawn from several areas. First, traditional auditing contributes knowledge of internal control practices and the overall control philosophy. Another contributor was IS management, which provides methodologies necessary to achieve successful design and implementation of systems. The field of behavioral science provided such questions and analysis to when and why IS are likely to fail because of people problems. Finally, the field of computer science contributes knowledge about control concepts, discipline, theory, and the formal models that underlie hardware and software design as a basis for maintaining data validity, reliability, and integrity.

IT auditing is an integral part of the audit function because it supports the auditor's judgment on the quality of the information processed by computer systems. Initially, auditors with IT audit skills are viewed as the technological resource for the audit staff. The audit staff often looked to them for technical assistance. There are many types of audit needs within IT auditing, such as organizational IT audits (management control over IT), technical IT audits (infrastructure, data centers, data communication), application IT audit (business/financial/operational), development/implementation IT audits (specification/ requirements, design, development, and post-implementation phases), and compliance IT audits involving national or international standards. The IT auditor's role has evolved to provide assurance that adequate and appropriate controls are in place. Of course, the responsibility for ensuring that adequate internal controls are in place rests with the management. The audit's primary role, except in areas of management advisory services, is to provide a statement of assurance as to whether adequate and reliable internal controls are in place and are operating in an efficient and effective manner. Therefore, whereas management is to ensure, auditors are to assure.

Today, IT auditing is a profession with conduct, aims, and qualities that are characterized by worldwide technical standards, an ethical set of rules (Information Systems Audit and Control Association [ISACA] Code of Ethics), and a professional certification program (Certified Information Systems Auditor [CISA]). It requires specialized knowledge and practicable ability, training and professional development of

IT auditor can result in the best IT audit function.

Application of standards (national or international) such as ISO 9000/3 and ISO 17799 to improve and implement quality systems for auditing.

2.OBJECTIVES & METHODOLOGY:

IT auditors work in collaboration with executive management, the board of directors, IT, legal, human resources and numerous other departments to help their organizations mitigate and control an escalating volume of IT risks that could cripple the enterprise.

The following are basic steps in performing the Information Technology Audit Process:

Planning

Studying and Evaluating Controls

Testing and Evaluating Controls

Reporting

Follow-up

reports

The following are principles of an audit :

Timeliness.

Financial context

Scientific referencing of learning perspectives

Literature-inclusion

Inclusion of user manuals & documentation

Identify references to innovations

ISACA helps global professionals lead, adapt and assure trust in an evolving digital world by offering innovative and world-class knowledge, standards, networking, credentialing and career development. Established in 1969, ISACA is a global nonprofit association of 140,000 professionals in 180 countries. ISACA also offers the Cybersecurity Nexus (CSX), a holistic cybersecurity resource, and COBIT, a business framework to govern enterprise technology.

Protiviti (www.protiviti.com) is a global consulting firm that helps companies solve problems in finance, technology, operations, governance, risk and internal audit, and has served more than 60 percent of Fortune 1000® and 35 percent of Fortune Global 500® companies. Protiviti and its independently owned Member Firms serve clients through a network of more than 70 locations in over 20 countries. The firm also works with smaller, growing companies, including those looking to go public, as well as with government agencies.

Named to the 2015 Fortune 100 Best Companies to Work , Protiviti is a wholly owned subsidiary of Robert Half (NYSE: RHI). Founded in 1948, Robert Half is a meJapan's biggest bank to introduce multilingual robot workers in its Tokyo branches.

First it was robots making ice cream, then you had robots selling coffee machines, now developers in Japan have created a robot that can advise customers on their finances.

Japan's largest bank, Mitsubishi UFJ Financial Group, has unveiled an all-talking and all-walking robot employee that is set to be introduced into their Tokyo branches

ICICI Bank introduces 'Software Robotics' to power banking operations

September 08, 2016

First bank in the country and among few, globally, to roll-out 'Software Robotics'

Over 200 software robots are performing over 10 lakh banking transactions every working day

Pares response time to customers by up to 60%; sharply raises productivity

Mumbai: ICICI Bank, India's largest private sector bank, today announced the deployment of 'Software Robotics' in over 200 business processes across various functions of the bank. The bank is the first in the country and among few, globally, to deploy 'Software Robotics' that emulates human actions to automate and perform repetitive, high volume and time consuming business tasks cutting across multiple applications.

At ICICI Bank, software robots have reduced the response time to customers by up to 60% and increased accuracy to 100% thereby sharply improving the bank's productivity and efficiency. It has also enabled the bank's employees to focus more on value-added and customer-related functions. The software robots now perform over 10 lakh banking transactions every working day.

ICICI Bank has deployed these software robots in over 200 business process functions across the organisation including retail banking operations, agri-business, trade & forex, treasury and human resources management among others. The bank has implemented the 'Software Robotics' platform mostly in-house, leveraging recent advancements in artificial intelligence such as facial and voice recognition, natural language processing, machine learning and bots among others.

Announcing the deployment of 'Software Robotics', Ms. Chanda Kochhar, MD & CEO, ICICI Bank, said, "ICICI Bank has a legacy of pioneering innovations in technology to create propositions that provide increased convenience to customers. We have created new paradigms in the financial services industry by taking the lead in introducing pathbreaking innovations including internet banking, mobile banking, Tab banking, Touch Banking branches and banking on social media.

It is yet another proud moment for us as we bring forth the futuristic technology of 'Software Robotics'. We have re-engineered over 200 business processes which are powered by software robots across various functions of the Bank. This initiative marks a milestone in the banking innovation in the Indian banking industry as it joins a select group of overseas organisations which have deployed this unique state-of-the-art robotic technology in such a large way.

The software robots are processing over 10 lakh transactions daily, bringing in unparalleled operational efficiency, higher accuracy and a massive reduction in processing time for customer services. Further, with our retail banking growing at over 25% every year, we will be ready to handle larger volumes with the same resources. This initiative deeply embodies the bank's philosophy of 'khayaal aapka', wherein we strive to offer the best-in-class experience to our customers.

It will also enable our employees to focus on more value-added services while having better work-life balance. I believe that the implementation of 'Software Robotics' will herald a transformational change

in the Indian banking industry. We plan to more than double the software robots to over 500 by end of this fiscal.”

The software robots at ICICI Bank are configured to capture and interpret information from systems, recognize patterns and run business processes across multiple applications to execute activities including data entry and validation, automated formatting, multi-format message creation, text mining, workflow acceleration, reconciliations and currency exchange rate processing among others.

This launch comes close on the heels of a slew of technology-led innovative services introduced by the bank. The list includes fully automated and round-the-clock 'Touch Banking' branches, Tab Banking, banking on Facebook and Twitter, the country's first contactless debit and credit cards, 'Pockets' - India's first digital bank on mobile phone and 'iMobile SmartKeys' – Asia's first payment service using a smartphone keyboard.

3. CHALLENGES:

The following are the main challenges of Information technology management audit control.

- 1.IT security , bridging IT and the business
- 2.Big data and analytics
- 3.Project management and change management
- 4.Resource/staffing/skills challenges
- 5 Cloud computing/virtualization
6. Infrastructure management
- 7.Budgets and controlling costs
- 8.Organization and Management
- 9.Computer Operations
- 10.Physical Security
- 11.Environmental Controls
- 12.Program, Data File and Transaction Security
13. Security Administration
- 14.Applications Systems Development and Maintenance
- 15.Systems Software Support
- 16.Vendor Support
- 17.Data Base Administration
18. Hardware and Software Inventory Management
19. Telecommunications
- 20.Continuity of Operations
- 21.Emerging technology and infrastructure changes such as transformation, innovation, disruption

4. CONCLUSIONS:

Computerised audit control plays significant role in effective and efficient management of data but it has to resolve the challenges mentioned in previous section.

5. ACKNOWLEDGEMENTS:

We authors are hereby express our sincere thanks and acknowledgements to the mother Smt. PUSHPA c/o Sri Eranna swamy Infront of anjaneya temple Lig24 vinobanagara Shivamogga karnataka for continuous encouragements.

6. REFERENCES:

- [1] "Computer Networking: A Top-Down Approach Featuring the Internet", Kurose and Ross, Addison-Wesley, 2002.
- [2] Digital design and computer architecture by Harris & sarah Harris
- [3] Computer organization & architecture: Designing for performance by William stallings.
- [4] Computer fundamental-rajaraman
- [5] Computer networks-Tanenbaum
- [6] Multimedia making itwork- tay Vaughan
- [7] Bedre Heeramani, B.Nagaraj: Volume 2, Issue 4, April 2012 ISSN: 2277 128X,International

- Journal of Advanced Research in Computer Science and Software Engineering Research Paper: "Research Issues of Interactive Multimedia for Advanced Computing & Communication for Challenging Applications"
- [8] Bedre Heeramani, B.Nagaraj: Volume 3, Issue 3, April 2013 ISSN: 2277 128X, International Journal of Advanced Research in Computer Science and Software Engineering Research Paper: "Emerging technological trends of 2012-2013 data flow supercomputer design issues for challenging applications"
- [9] Governing the Modern Corporation: Capital Markets, Corporate Control and Economic Performance By Roy C. Smith; Ingo Walter Oxford University Press, 2005
- [10] Corporate Governance and Accountability: What Role for the Regulator, Director, and Auditor By Dan A. Bavlly Quorum Books, 1999
- [11] Financial Management in the Voluntary Sector: New Challenges By Paul Palmer; Adrian Randall Routledge, 2002
- [12] Modern Auditing By Graham W. Cosserat; Neil Rodda Wiley, 2009 ,3rd edition
- [13] Audit, Accountability, and Government By Fidelma White; Kathryn Hollingsworth Clarendon Press, 1999
- [14] The Audit Society: Rituals of Verification By Michael Power Oxford University Press
- [15] Financial Management in the Voluntary Sector: New Challenges By Paul Palmer; Adrian Randall Routledge, 2002
- [16] Corporate Governance and Accountability: What Role for the Regulator, Director, and Auditor By Dan A. Bavlly Quorum Books, 1999
- [17] Librarian's tip: Chap. 11 "The Future for Auditors" and Chap. 13 "The Rise of the Audit Committee"
- [18] Governing the Modern Corporation: Capital Markets, Corporate Control and Economic Performance By Roy C. Smith; Ingo Walter Oxford University Press, 2005
- [19] "The Auditors" Read preview Overview Managing Explosive Corporate Growth By Steven M. Bragg Wiley, 1999
- [20] Accounting Quality, Auditing, and Corporate Governance By Imhoff, Eugene A., Jr, Accounting Horizons, Vol. 17, Annual 2003
- [21] The Economics and Politics of Accounting: International Perspectives on Research Trends, Policy, and Practice By Christian Leuz; Dieter Pfaff; Anthony Hopwood Oxford University Press, 2004
- Librarian's tip: Section 4 "Enforcement of Accounting Standards"
- [22] The Priesthood of Industry: The Rise of the Professional Accountant in British Management By Derek Matthews; Malcolm Anderson; John Richard Edwards ,Oxford University, 1998
- [23] A Dictionary of Accounting By R. Hussey Oxford University Press, 1999 ,2nd edition
- [24] Forbes India magazine
- [25] Bedre Heeramani , B.Nagaraj, Volume 3, Issue 4, April 2013 ISSN: 2277 128X, International Journal of Advanced Research in Computer Science and Software Engineering Research Paper: "Research Dimensions of Advanced Mobile Computing Technology Security Issues for the Complex Applications" paper idv3i4-0499
- [26] Bedre Heeramani , B.Nagaraj: Volume 3, Issue 6, April 2013 ISSN: 2277 128X, International Journal of Advanced Research in Computer Science and Software Engineering Research, " Research of system software tool with innovative technological trends of detailed design in advanced software engineering and quality assurance tools for 2012-2013 applications " paper idv3i6-0382
- [27] Bedre Heeramani , B.Nagaraj: Volume 2, Issue 1, may 2013 ISSN: 2320 0804 ,International Journal of Engineering associates Research Paper: "Research of Modern Embedded Computer System Challenging Program Techniques for the Global Computer Science & Engineering Applications of Distributed Computing for 2012-2013"
- [28] Bedre Heeramani, B.Nagaraj, paper "challenges of cloud computing" ,GJCSIT, Global Journal of computer science and information technology, volume2, issue4.
- [29] Mr.Krishna Murthy M.S, Er.Bedre Heeramani, Er.Bedre Nagaraj. Paper : Advanced challenges of nanotechnology based Accounting. Volume, Issue8 IJATES-INTERNATIONAL Aug2016
- [30] Bedre Heeramani, B.Nagaraj, "Research of New Non Iterative Fastest Neural Network Algorithm" International Journal of Innovative Research in Science , Engineering & Technology. IJIRSET 4 (9), 9051-9057, 2015 September, volume 4, Issue 9, ISSN:2319-8753
- [31] Er.Bedre Heeramani, Er.NagarajB, " Challenges of Network security", International Journal of innovative research in Science and Engineering, volume2, Issue 8, 2016 Aug, IJIRSE, ISSN 2454-9665
- [32] Mr.Krishna Murthy M.S, Er.Bedre Heeramani, Er.Bedre Nagaraj, "Technology based commercial business impacts on environment and research issues for advancements in computerised

- trading 2016:2017", IJATES, Volume 4, Issue 9, sept2016,International Journal of Advanced Technology in engineering and science.ISSN 2348-7550
- [33] Er.Bedre Heeramani, Er.Nagaraj B, Fourth international conference on recent trends in engineering, science & management, 2016August, "challenges of network security",ICRTE SM-16, GOA,Panjim, ISSN-973-93-86171-01-6
- [34] Mr.Krishna Murthy M.S, Er.Bedre Heeramani, Er.Bedre Nagaraj,"Advanced challenges of nanotechnology based Accounting",ICRISMET-2016, August,ISBN:978-93-86171-04-07. International Conference on Recent Innovations in Sciences, Management education and Technology, JCD memorial college Sirsa, Haryana
- [35] Mr.Krishna Murthy M.S, Er.Bedre Heeramani, Er.Bedre Nagaraj, "INTELLIGENT ROBOT SOFTWARE RESEARCH ISSUES FOR MODERN BANKING MANAGEMENT" Second. International. conference on "Latest innovations in science, Engineering and Management" Goa
- [36] Mr.Krishna Murthy M.S, Er.Bedre Heeramani, Er.Bedre Nagaraj, "INTELLIGENT ROBOT SOFTWARE RESEARCH ISSUES FOR MODERN BANKING MANAGEMENT" , IJATES,Volume 4, Issue 10.
- [37] Mr.Krishna Murthy M.S , Er.Bedre Heeramani, Er.Bedre Nagaraj, " Current trends in mobile banking research issues", International Journal for Research in Business Management, Volume 2, Issue 11, November 2016, ISSN-2455-6114

BIOGRAPHY

Author1:

Mr.Krishna Murthy M.S, Manager from industry background. His areas of interest includes softwares in management, professional consultancy & project management

Author2:

Er. Bedre Heeramani has completed BE (CS&E), M. Tech (CS&E) first class from JNNCE Shimoga affiliated to VTU approved by AICTE . She is currently working as lecturer in department of computer science of sahyadri science college (autonomous university) shivamogga from 4 years and thought subjects data structures, computer networks, Unix, logic design, java programming, operating systems. Her areas of interest include neural networks and design of algorithms.

Author3:

Er. Bedre Nagaraj , has completed BE (CS&E), M. Tech (CS&E) both first class from BIET, Davanagere & JNNCE Shimoga respectively. He has teaching experience of 18years for various courses BE(CS&E), MCA,PGDCA,MTA, BCA,BSc etc and handled about 50 computer science subjects. He is currently working as lecturer in department of computer science of sahyadri science college(autonomous university) shivamogga. His areas of interest includes artificial neural networks, programming languages, compilers, data structures, analysis of algorithms, multimedia, graph theory, computer architectures.

