

## Analysis of the Impact of IT Audit Implementation on Data Integration and Company Performance with CAATs Applications

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**Abstract:** *IT audit is a technology that includes the process of checking and evaluating the information system owned by the company. The purpose of using IT audit is to make it easier for auditors to check data security, maintain system quality and control access to company information. Currently, many companies have constraints on the IT audit system they have so that they are very vulnerable to data misuse by irresponsible parties such as what happened to BPJS Kesehatan and Bank Syariah Indonesia in 2023. This case reflects the failure of the company's information system because they were careless in conducting IT audits. This article aims to analyze the effect of IT audit implementation in maintaining data integration and company performance. The method used is a literature study by utilizing relevant books and journals. The results and discussion show that the use of CAATs as part of IT audit techniques can be used to detect security gaps, monitor network activity, and evaluate data integrity on an ongoing basis, thereby helping companies identify and address cyber threats before greater losses occur. In addition, CAATs help companies ensure compliance with regulations related to data protection. With ongoing audits, CAATs can evaluate whether data protection policies and procedures have been followed properly by all parts of the organization so that company performance is more optimal.*

**Keywords:** *IT Audit, Data Integration, Company Performance.*

### 1. Introduction

Current technological developments cannot be stopped and continue to experience innovation in every aspect of life, including in helping company performance. The company has operational activities in several divisions and management so that the presence of technology is very much needed as a complement to human resources so that productivity increases. One technology that can help operational activities in the audit field is IT audit.

IT audit is a technology that includes the process of checking and evaluating the information systems owned by a company. The purpose of using IT audits is to make it easier for auditors to check data security, maintain system quality and control access to company information to keep it safe from cybercrime in the form of data theft, computer system hackers or irregularities in using company information. Generally, IT information audits are carried out to always monitor for gaps in a company's information system and are not vulnerable to cybercrime and also maintain data integration (Nadiyah, et.al., 2024).

Currently, many companies have IT audit system constraints that make them very vulnerable to data misuse by irresponsible parties. As of 2023, as happened to the BPJS Kesehatan Agency which experienced 19.56 million data spread on the dark web, first

discovered by Bjorka, a hacker who uploaded content entitled "BPJS Ketenagakerjaan Indonesia 19Million". The data leak included 100,000 user data with specifications of full name, NIK and address (CNN, 2023). A large scale data leak case also occurred at Bank Syariah Indonesia which became a victim of ransomware, suffering data leak losses in the form of passwords, employee data and official documents successfully distributed by hackers.

The case reflects the failure of the company's information system due to negligence in conducting IT audits, so that other people can easily access and trade company data and even ask for a ransom in the form of fantastic money so that the data is not published. Therefore, the presence of IT audits is very necessary as an effort to maintain the integration of company data so that it does not experience losses and maintains company performance. Company performance is achieved if the information system is maintained intact so that it can be used as a supporting tool for operational activities and as a reference in company activities. Based on the explanation above, this article aims to analyze the influence of IT audit implementation in maintaining data integration and company performance.

## 2. Literature Review

### 2.1 IT Audit

IT audit is a periodic examination of a company or organization's information technology infrastructure and assesses whether the guidelines for collecting, processing, storing, distributing, and using information are appropriate or not. Guidelines in IT audits need to be adhered to as an effort to protect assets and data integration that are vital to the company. In conducting an IT audit, there are two major categories that can be explained as follows:

### 2.2 General Computer Controls Audit

It is an audit on information systems referring to policies and procedures related to various applications in a comprehensive and effective manner. Audits are conducted on IT infrastructure and supporting services including various applications in them. Audit activities in this category are intended to achieve a safe point in good management (Asniarti, 2019). The areas audited in this category include IS Operations, Information Security (Isec) and Change Control Management (CCM). IS Operation is an activity of backing up and storing data off-site, monitoring work and tracking work completion. This audit is conducted to ensure that the system recovery speed is guaranteed and the risk of data loss is minimal.

Information Security (Isec) is an audit that includes checking the access request section, account-related administration, application access termination and application security. Intended to prevent information security threats and invalid access from other systems. Change Control Management (CCM) is the involvement of approval on changes and improvements to software for applications or databases and overseeing the infrastructure security management system. Intended as a guarantor for minimal risk of operational disruption caused by system changes.

### 2.3 Application Control Audit

Audits in this category focus on specific assessments of processes within an application. Application controls include automated controls, monitoring of data accuracy, completeness, validity, and authorization. then processed, processed, stored, sent, and reported by the system. Application Controls Audit has steps to ensure that the data generated by the application can be utilized properly according to the company's targets. Consists of checking the accuracy of mathematics which is the certainty that the calculations in the application have been carried out correctly and accurately. Next is data input validation, namely ensuring that the incoming data meets the qualifications so that no errors occur at the beginning of the application process. The last is checking the numerical sequence, namely monitoring the data sequence to ensure that no data is lost or invalid (Otero, 2018).

## 3. Methods

This article uses a library research method that utilizes sources from books, journals, reports and publications to analyze research objects. According to Sugiyono (2018), library research is a theoretical study through references related to culture, values and norms in the social conditions of the object being studied. This article analyzes the effect of using IT Audit on company performance using sources in the form of books and journals that are relevant to the discussion. The main sources of this article are the book "Information Technology Control Audit" by Angel R. Otero and journal articles relevant to the discussion.

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## 4. Result and Discussion

### 4.1 The Role of IT Audit Computer-Assisted Audit Techniques (CAATs) in Improving Data Integration and Corporate Performance

Computer Assisted Audit Techniques (CAATs) are an important tool in IT audits to improve the integrity of corporate data, prevent data leakage, and minimize cybercrime (Nasution et al., 2022). The use of CAATs in audits helps auditors assess the effectiveness of IT controls, test data integrity, and ensure that business processes are running according to established procedures. This technique is very relevant in complex IT environments because manual audits are no longer sufficient to handle large volumes of information and system complexity (Otero, 2018).

CAATs allow auditors to automatically evaluate large amounts of data and perform rapid analysis to gain a broad view of a process. Some common tools used in CAATs are ACL and Interactive Data Extraction and Analysis (IDEA). These tools can be used to select samples, analyze data characteristics, identify trends, and assess data integrity. In addition, applications such as Microsoft Access and Excel are also often used in data analysis, generating reports, and performing regression or trend analysis. By using these automated techniques, auditors can be more effective in detecting anomalies or suspicious patterns that may indicate a potential data leak or cyber attack.

In IT audits, CAATs serve to evaluate application controls aimed at ensuring the accuracy and completeness of information generated by the system. When adequate controls have been identified, the auditor performs testing to verify the design and effectiveness of the controls. However, if the controls are deemed inadequate, further testing will be performed to ensure data integrity is maintained. This is very important in the context of preventing data leakage and cybercrime, because invalid or unsafe data can be exploited by irresponsible parties (Saputra, et al., 2024).

In addition, CAATs can also be used to continuously monitor processing results, allowing auditors to immediately detect and respond to emerging issues. With advanced analytical capabilities, tools such as SAP Audit Management enable the audit process to not only provide basic assurance, but also provide insights and advice that can help companies improve system performance and security. SAP Audit Management supports documentation of evidence, organization of working documents, and creation of audit reports, making audits more efficient and well-documented.

Computer-Assisted Audit Techniques (CAATs) play a significant role in improving company performance, especially in preventing data leaks and improving cybersecurity. In the context of the data leak cases experienced by BPJS Kesehatan and Bank Syariah Indonesia, CAATs can be used to detect security gaps, monitor network activity, and evaluate data integrity continuously, thereby helping companies identify and address cyber threats before greater losses occur.

The BPJS Kesehatan data leak case involved the leaking of personal data of millions of participants, which shows weaknesses in the data protection system. By using CAATs, auditors can monitor the data storage and transmission process automatically to detect potential leaks or unauthorized access. This technique

allows auditors to assess whether application controls and security systems have been properly designed and implemented. When CAATs detect anomalous patterns or suspicious activity such as attempts to access sensitive data by unauthorized users, corrective actions can be taken immediately to mitigate the risk of data leakage.

Meanwhile, in the case of a cyber attack on Bank Syariah Indonesia that causes service disruption, CAATs can help strengthen security controls and improve response to cyber incidents. CAATs enable companies to perform rapid and comprehensive data analysis, which is necessary to identify the source of an attack and determine which parts of the system have been compromised. For example, CAATs can be used to analyze system logs, detect attack patterns such as Distributed Denial of Service (DDoS), and verify the validity of data after system recovery. With automated monitoring using CAATs, companies can reduce response time to cyberattacks and minimize the impact of disruptions on operations (Gaol, et.al., 2024).

In addition, CAATs help companies ensure compliance with regulations related to data protection. With continuous audits, CAATs can evaluate whether data protection policies and procedures are being followed properly by all parts of the organization. This is important to prevent data leaks, such as those experienced by BPJS Kesehatan, where sensitive public data was at stake. Auditors use CAATs to ensure that stored data is properly encrypted, user access is restricted, and any data changes are recorded in detail. In situations where data is a critical asset, CAATs' ability to quickly analyze large volumes of data provides an advantage in identifying risks and increasing system resilience. CAATs support companies in developing better risk mitigation strategies and designing additional security measures based on audit findings (Driya, et.al., 2021).

The key to successful use of CAATs lies in proper planning, a thorough understanding of the system being audited, and close monitoring. The three main categories of computer-based audit functions include items of audit interest, audit mathematics, and data analysis. By effectively utilizing CAATs, companies can improve data integrity, minimize the risk of information leakage, and increase the effectiveness of cybersecurity controls. Overall, the use of CAATs as part of an IT audit can help companies such as BPJS Kesehatan and Bank Syariah Indonesia in optimizing the performance of their information systems. With early detection capabilities, in-depth data analysis, and automatic monitoring, CAATs are able to increase protection against data leaks and cybercrime, thereby supporting companies in maintaining public trust and operational activities.

## 5. Conclusion

The implementation of IT audits on a company's information system has many benefits for ensuring data integration and minimizing risks that can damage the security that has been built into the information system infrastructure. Computer Assisted Audit Techniques (CAATs) as part of an IT audit guarantees the quality and suitability of the information system so that its implementation can be monitored periodically and ensures that all

vital company data is protected. With early detection capabilities, structured data analysis and automatic monitoring, CAATs are able to increase protection against data leaks and cybercrime, supporting companies in maintaining public trust and being able to focus more on operational activities to improve company performance.

## 6. References

1. Asniarti, A., (2019). The Effect of Computer Assisted Audit Tools on Operational Review of Information Technology Audits. In *1st International Conference on Social Sciences and Interdisciplinary Studies (ICSSIS 2018)*. Atlantis Press. <https://doi.org/10.2991/icssis-18.2019.5>
2. Hermawan, A., Nadiyah, F. A., & Maharani, B. (2024). Pengaruh Audit Teknologi Informasi Terhadap Kualitas Audit. *Ekonomi Keuangan Syariah Dan Akuntansi Pajak (EKSAAP)*, 1(3), 236-253. <https://doi.org/10.61132/eksap.v1i3.278>
3. Lumban Gaol, L., Suryani, P., & Marpaung, C. R. S. (2024). Peran Teknologi Informasi Dalam Mendukung Penerapan Audit Berbasis Risiko Di Pemerintah Kabupaten Toba. *Jurnal Audit Dan Akuntansi Fakultas Ekonomi Universitas Tanjungpura*, 13(1), 20-35. <https://jurnal.untan.ac.id/index.php/jaakfe>
4. Nasution, A.A., Erlina, & Atmanegara., A.W (2022). Learning Validation Control and Input Error Correction on Implementation of Computer Assisted Audit Techniques (CAATS) (Review New Trends in Sustainable Development of Learning Education Management Models for the Accounting Student). *Webology*. 19(1). 1850-1861. DOI: 10.14704/WEB/V19I1/WEB19124. <https://www.webology.org/abstract.php?id=887>
5. Otero, A. R. (2018). *Information Technology Control And Audit (5th ed.)*. Auerbach Publishers, Incorporated. ProQuest Ebook Central. <http://ebookcentral.proquest.com/lib/undip-ebooks/detail.action?docID=5482434>
6. Saputra, D., Abrar, & Rinaldy, R. A. (2024). Pengaruh Teknik Audit Berbantuan Komputer (CAAT) Terhadap Penggunaan Metode Heuristik Oleh Auditor. *Management Studies And Entrepreneurship Journal*, 5(2), 6673-6686. <http://journal.yrpiiku.com/index.php/msej>
7. CNN Indonesia. (2023, July 19). *Deret Insiden Kebocoran Data WNI 2023, BPJS Hingga Dukcapil*. CNN Indonesia. <https://www.cnnindonesia.com/teknologi/20230719145802-185-975301/deret-insiden-kebocoran-data-wni-2023-bpjs-hingga-dukcapil>
8. Driya, P. D., Raditra Putra, I. G. L. A., & Pradnyana, I. M. A. (2021). Teknik Pengumpulan Data Pada Audit Sistem Informasi Dengan Framework COBIT. *Information System And Emerging Technology Journal*, 2(2).