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An Analysis of the Use of Accurate Accounting Software in Improving the Efficiency and Effectiveness of Financial Reporting at Perumda Tunas Malang

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ABSTRACT

Objective: *Digital transformation in the public sector encourages Regional Government-Owned Enterprises (BUMD) to adopt technology-based accounting information systems to enhance financial accountability and reporting quality. This study aims to analyze the use of Accurate Accounting Software in improving the efficiency and effectiveness of financial reporting at Perumda Tunas Malang, which previously experienced technical constraints with a Local Area Network (LAN)-based system.* ***Method:*** *The research employs a qualitative approach through in-depth interviews and field observation with five key informants, analyzed using the Miles and Huberman interactive model. The theoretical framework is grounded in the DeLone & McLean (2003) Information Systems Success Model as the primary framework, with Romney & Steinbart (2018) as a conceptual reference.* ***Results:*** *The system accelerates financial report preparation and strengthens real-time data-based decision-making. Challenges identified include internet connectivity dependency, limited user training, and absence of an independent backup procedure. The average user satisfaction score of 8.9 out of 10 indicates that Accurate delivers significant benefits and is worthy of further development.* ***Novelty:*** *Findings indicate that Accurate has been implemented through a cloud-based hybrid system with multi-account segregation of duties, capable of performing core Accounting Information System functions including data processing, standard financial statement presentation, audit trail, and internal control.*

INTRODUCTION

Digital transformation in the public finance sector contributes significantly to the improvement of managerial accountability and effectiveness standards [1]. Computer-based accounting information systems are an important instrument in supporting the process of recording, processing, and reporting finances in a fast, accurate, and integrated manner [2]. The use of the right accounting software can help organizations improve work efficiency and effectiveness in producing relevant and reliable financial information [3].

In the public sector, especially BUMDs, financial management must be carried out based on the principles of efficiency, effectiveness, transparency, and accountability as mandated in Law Number 23 of 2014 concerning Regional Government and Government Regulation Number 54 of 2017 concerning BUMD. The regulation emphasizes that BUMDs are obliged to implement good corporate governance, including in the management of the financial system.

The phenomenon of changes in the accounting information system occurred at Perumda Tunas Malang as one of the BUMDs in Malang City. Perumda Tunas Malang previously used a LAN-based system that experienced accessibility constraints and limited network infrastructure, hindering the transaction input process and the preparation of financial statements. As a form of evaluation and performance improvement, Perumda Tunas Malang then switched to Accurate Accounting Software from 2024. This system move shows that there are organizational efforts to improve the quality of financial management through the use of information technology [4], [5], [6], [7], [8], [9], [10].

Two fundamental problems were identified in the early stages of the study. First, at the individual level, mastery of the system is concentrated on one individual while other users learn the system independently without structured formal training. Second, at the organizational level, there are no adequate written standard procedures and risk control mechanisms to support the sustainability of cloud-based systems, including the absence of independent data backup procedures.

Theoretically, the success of information system implementation can be analyzed using the Information System Success Model of DeLone and McLean [11]. This model explains that system quality, information quality, and service quality affect system usage and user satisfaction, ultimately resulting in net benefits for the organization. Previous research by Afif & Sa'adah, Cahyani & Nurabiah, and Nurfadhilla & Marlina shows the positive influence of accounting information systems on organizational performance, but most of them are carried out in the private sector or MSMEs with a quantitative approach [12], [13], [14]. Research that specifically examines the phenomenon of accounting software transfer in BUMD through a qualitative approach is still limited, so there is a research gap that needs to be filled.

This study aims to: (1) analyze how the use of Accurate Accounting Software in the financial reporting process at Perumda Tunas Malang; and (2) to know the role of Accurate Accounting Software in influencing the efficiency and effectiveness of financial reporting at Perumda Tunas Malang.

The Information Systems Success Model developed by DeLone and McLean (2003) is the main foundation in assessing the success of information system implementation in organizations. This model teaches that the success of information systems can be measured through six main dimensions that are interconnected by cause and effect: (1) system quality, (2) information quality, (3) service quality, (4) system use, (5) user satisfaction, and (6) net benefits.

The first three dimensions serve as input factors that affect system usage and user satisfaction. The relationship between system usage and user satisfaction is reciprocal, and both ultimately result in net benefits in the form of increased efficiency, decision-making effectiveness, and organizational performance. The perceived net benefit further provides feedback on usage and satisfaction, indicating that a beneficial system encourages sustainability of use [11].

Romney and Steinbart define an effective and efficient Accounting Information System (SIA) as a system that is able to: (1) generate reliable information for decision-making; (2) safeguarding organizational assets and data through adequate internal control; (3) ensuring accountability for the use of resources; and (4) provide relevant, timely, and accurate information. These four characteristics correspond directly to a number of dimensions in the DeLone & McLean Model [11].

In this study, Romney and Steinbart were used as a conceptual reference to define the characteristics of an effective and efficient SIA, rather than as an independent theory of analysis. The main analytical framework of the study is the DeLone and McLean Model (2003), while Romney and Steinbart serve as a supporting reference that enriches the interpretation of the findings from an accounting science perspective [15].

Efficiency is the ability of a system to produce the desired output with the minimum possible use of resources [16], [17]. In the context of SIA, efficiency is understood as the increased speed of the financial reporting process, the reduction of manual workload, and the time savings that users can experience after using a new system compared to the previous system.

Effectiveness is related to the level of achievement of goals that have been set [17]. Financial information is said to be effective when it meets the main qualitative characteristics: relevance and accurate representation [18]. Laudon and Laudon emphasized that the effectiveness of SIA is not only measured by the technical ability to produce reports, but also by the extent to which the report is used as a basis for managerial decision-making [19]. Within the framework of the DeLone & McLean model, efficiency and effectiveness are both covered in the net benefits dimension [11].

RESEARCH METHOD

This study uses a qualitative approach with the aim of understanding in depth the experiences, perceptions, and factors that affect the use of Accurate Accounting Software at Perumda Tunas Malang [20], [21]. The qualitative approach was chosen because the focus of the research is the exploration of understanding, not hypothesis testing or measuring variables.

The research was conducted at Perumda Tunas Malang, a BUMD engaged in various business fields as an entity owned by the Malang City Government. Perumda Tunas Malang was chosen because it has implemented Accurate Accounting Software since 2024, replacing the previous LAN-based system, and there is an interesting phenomenon of system change to study.

The research informants were selected purposively based on the following criteria: (1) employees who use or are directly involved in the operation of Accurate; (2) understand the process of financial recording and reporting; and (3) have sufficient work experience. The five key informants selected include: Accounting Sub-Division (Informant B), Head of Internal Supervisory Unit (Informant W), Expenditure Treasurer

(Informant M), Revenue Treasurer (Informant A), and Stockist/Inventory Staff (Informant E).

Data collection was carried out through three methods: (1) in-depth interviews to explore the experience of using Accurate, perceived benefits, obstacles faced, and the system transition process; (2) direct observation of the use of Accurate in daily operational activities; and (3) documentation in the form of photos of activities and financial statements generated by Accurate as triangulation data.

Data analysis uses the interactive analysis model of Miles & Huberman which includes: (1) data reduction, selecting and focusing data that is relevant to the formulation of the problem; (2) presentation of data in the form of descriptive narratives, tables, and matrices; and (3) drawing conclusions and verifying to answer the formulation of research problems [22].

The validity of the data is ensured through triangulation which includes three strategies: source triangulation (comparing the information of five informants with different positions and functions), technical triangulation (matching interview data with field observations and documentation studies), and time triangulation. As an ethical note, the previous mention of the system (called "system X") is solely to describe the context of the research, not to provide a comparative assessment of the nature of promotion or discredit.

RESULTS AND DISCUSSION

Results

Perumda Tunas Malang is a Regional Public Company engaged in various business fields as an entity owned by the Malang City Government. With the operational complexity of multi-business units, Perumda Tunas Malang requires a reliable financial recording and reporting system. Accurate Accounting Software will be implemented from 2024, replacing the LAN-based systems previously used.

The quality of the system shows various achievements in different aspects. In terms of ease of use, all informants stated that Accurate is easier to operate than the previous system. Cloud-based accessibility allows users to access the system without being limited to a specific device or location, which is a key competitive advantage over LAN-based systems. One of the informants stated: "Accurate can be accessed online, so it can be accessed at any time" (Informant A) [11].

In terms of reliability, all informants confirmed the existence of an absolute dependence on the internet connection as the main point of vulnerability. Field observations found that the system was undergoing maintenance, indicating that the availability of the system depends on the stability of the third-party infrastructure so that the organization does not have full control over the availability of the system.

A critical finding on this dimension is the absence of independent data backup procedures outside of the Accurate system, which puts the entire financial data at risk in the event of a vendor infrastructure outage. This is a control gap that needs to be

addressed immediately, although this is the responsibility of the user organization's policy, not the weakness of the Accurate system itself.

The accuracy of the information Accurate generates relies heavily on the quality of the input data, not the weaknesses of the system—a principle known as garbage in, garbage out. Informant W from the Internal Supervisory Unit position confirmed: "The report produced by Accurate is accurate and complete according to the input." The system has referred to the applicable accounting standards.

The availability of real-time information is one of the main added values of cloud-based systems. However, the timeliness of information depends on the discipline of staff in entering data regularly, so it is a function of the organization's work culture, not solely a function of technology.

One consistency problem identified is the incompatibility between the system's built-in Cost of Goods Sold (HPP) method (average method) and the need for project-based transactions that are more appropriate using the actual acquisition price, thus requiring further configuration studies.

Service quality is the dimension with the most room for improvement. Vendors provide the system without a formal structured training program. Informant B stated: "Accurate only presented the system to us, so we had to learn first." The absence of formal training creates an informal knowledge transfer mechanism within the organization, where other users rely on Informant B as the sole source of guidance.

This condition is an operational risk that in the IT risk management literature is known as a single point of failure in the human resource dimension, with the potential for a serious impact on the sustainability of system effectiveness in the event of a change of key employees.

The use of Accurate is mandatory because it is the only official financial recording system. There is a variation in intensity according to the role: accounting staff use 40–60% of their working time, the treasurer spends 3–4 hours per day, internal supervisors are more intense at the close of the books, while the revenue treasurer is more intensive at the end of the month.

The fixed asset management and automatic depreciation features are consistently not used due to inconsistency with external auditor requirements. This partial use is an adaptive response to binding audit requirements, not system failures, and reflects the typical characteristics of the dual regulatory environment faced by BUMDs.

All informants expressed high satisfaction with Accurate with an average score of 8.9 out of 10 (range 8–9.5). This satisfaction encourages all informants to recommend sustainable use. Informant B stated that he was very helpful and satisfied with what Accurate offered and presented. Informant W recommends Accurate to continue to be used in improving corporate reporting.

It should be noted that satisfaction scores are obtained from mandatory use users who have no alternative systems, so the rating can be influenced by the effect of

comparison with the previous system that is less satisfactory, rather than solely the intrinsic quality of Accurate.

At the individual level, users report noticeable improvements in work efficiency: flexibility of access from anywhere, ease of data correction, and speed of transaction processing. At the organizational level, Accurate contributes to orderly recording, ease of real-time internal supervision, and acceleration of financial report preparation. Informant E stated: "The report was quickly completed. It used to be a bit slow because Excel used to move to the old system."

Multi-account capabilities with concurrent access allow supervisors and management to monitor financial conditions directly. The benefits of reconciliation are also significant: "Reconciliation is very helpful, because at the time of recording anywhere at the same time we can also check the availability and accuracy of the data" (Informant B).

Table 1. DeLone & McLean Dimension-Based Data Presentation Matrix

Dimensions	Accounting Staff	Internal Supervisory Unit	Production Treasurer	Treasurer of Revenue	Staff Stockist
System Quality	*Cloud-based*, network-dependent, generally stable	Online, more efficient than System Previous	Not bad fast, rare *Error*	Easy to access, sometimes *trouble* when *saving*	Stable if the internet is stable, fast <1 minute
Quality of Information	Close to accurate, needs *human error adjustment*	Accurately, Referring to accounting standards	Makes corrections easier Error *Input*	Accurate, *real-time updates*, complete	Accurate according to the input data, according to the standard
Quality of Service	Learn independent, Without Formal training	HR need a deeper understanding of the system	Dependents on the accounting staff	Dependents on the accounting staff	Guide directly from the accounting staff
Intensity of Use	40–60% of working time, almost every day	More intense when closing the book	3–4 hours/day depending on volume	Not every day, more intensive at the end of the month	From morning to evening during business hours
User Satisfaction	Very satisfied, better than the previous system	Score 9/10, back to HR quality	Quite satisfied, easy to use	Score 8/10, easy to learn for beginners	Score 9.5/10, effective and easy
Net Benefits	Flexible access, easy reconciliation, *real-time*	Efficient, effective, supporting decision-making	Speed up the process *Input*, Time Efficiency	Reduce manual work, reporting efficiency	Reports Quick finish, help *Stock Withdrawal*

Source: Research Data, 2026

Discussion

Romney and Steinbart define SIA as a system that collects, records, stores, and processes data to generate information for decision-makers. The financial reporting process at Perumda Tunas Malang takes place through six semi-integrated stages: (1) collection of source documents, (2) manual verification and filtering, (3) data input to Accurate, (4) automatic processing by the system, (5) verification and reconciliation by the accounting and SPI sections, and (6) preparation and presentation of financial statements.

This business process, which is still hybrid, needs to be analyzed from two perspectives. From a data integrity perspective, the manual verification stage serves as a quality gate before the data enters the official system—in line with the recommendations of Romney & Steinbart. However, this mechanism is informal and depends on individual discipline, so it needs to be formalized in a written SOP. From a net efficiency perspective, workflows that were previously three stages (physical → Excel → software) became two stages (initial verification → Accurate), and the elimination of one stage of switching between systems is a real source of efficiency [15].

DeLone and McLean distinguish between voluntary and mandatory use. In the context of Perumda Tunas Malang, the use is mandatory. The implication is twofold: it encourages uniformity of record-keeping, but creates a high dependency so that any system disruption has a direct impact on financial operations [11].

Reporting efficiency is realized through four aspects. First, flexibility and accessibility: the transition to the cloud eliminates the limitations of LAN-based accessibility. Second, processing speed: users reported a significant increase in speed even though it was based on perceptual comparisons. Third, error management.

Easier: Accurate provides more efficient transaction tracing and correction capabilities than previous systems. Fourth, the hybrid recording process shows that efficiency optimization has not been fully achieved and can still be improved through formalization of procedures.

The effectiveness of reporting is realized through three aspects. First, transparency and oversight: a multi-account system allows for real-time monitoring by various stakeholders including the President Director and SPI. Second, audit support: Accurate provides a complete and searchable audit trail. Third, decision-making: the availability of real-time data allows management to access information at the time of need.

The inter-dimensional inter-linkage of DeLone & McLean with the Romney & Steinbart benchmark can be explained as follows: the high quality of the system allows SIA to perform data collection and processing functions; good information quality produces reliable financial reports according to standards; the intensity of use and high satisfaction indicate that the SIA has been optimally accepted; and the net benefits in the form of increased efficiency and effectiveness are empirical evidence of successful implementation.

The concentration of system knowledge on a single individual constitutes an operational risk with serious implications in three scenarios: (1) turnover causes a total operational disruption; (2) sudden absences cause periodic reporting delays; and (3) the surge in transaction volume creates bottlenecks. Romney and Steinbart (2018) emphasized that the effectiveness of SIA implementation also depends on the organization's ability to maintain operational knowledge in the midst of HR dynamics. Recommended mitigations include knowledge succession programs, documented SOPs, and equitable distribution of module responsibilities.

Based on the preventive control principles of Romney & Steinbart (2018), three layers of protection are recommended: (1) a policy of periodic data backup through routine export to local formats at least once per month; (2) Service Level Agreements with vendors that provide a minimum uptime guarantee of 99.5%, daily server backup commitments, and full data export mechanisms; and (3) Disaster Recovery Plan which includes a maximum of 24-hour Recovery Time Objective, a maximum of 24-hour Recovery Point Objective, spreadsheet-based emergency procedures, and periodic testing at least once per year.

CONCLUSION

Fundamental Finding : This study analyzes the use of Accurate Accounting Software in improving the efficiency and effectiveness of financial reporting in Perumda Tunas Malang using the DeLone & McLean Information System Success Model in 2003. Key findings show that Accurate has been robustly implemented through a cloud-based hybrid system with multi-account segregation, and is capable of performing SIA's key functions including data processing, standard financial report presentation, trail audits, and internal controls. In terms of efficiency, the system speeds up the preparation of reports, increases the flexibility of data access, and makes it easier to manage input errors. In terms of effectiveness, the system strengthens internal controls through separation of tasks and multi-account access, increases transparency, supports audits, and encourages real-time data-driven decision-making. An average user satisfaction rate of 8.9 out of 10 indicates the significant benefits of the system to the organization. **Implication :** The theoretical contribution of this study is to propose the need for the dimension of "regulatory compliance" as a moderation factor in the application of the DeLone & McLean model in the context of BUMD, given the characteristics of the dual regulatory environment faced by public entities. Practical implications include the need for: (1) an independent data backup policy; (2) structured formal training programs; (3) system configuration adjustment for project-based units; and (4) strengthening the reliability of the internet network. **Limitation :** The main obstacles identified include reliance on an internet connection, limitations on formal user training, absence of independent backup procedures, and concentration of system knowledge on a single individual. **Future Research :** Future research is suggested to use a mixed methods approach, expand the scope of informants, and conduct comparative studies across regional companies.

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