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The Importance of Information System Manuals: Lessons from Organizations Lacking Documentation

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Abstract

Information systems are critical components of organizational management in the digital era, yet many agencies lack clear user manuals. This deficiency undermines operational efficiency, particularly in training duration, data entry, service continuity, and information security. This study analyzes the impacts of missing user manuals through government case examples. Without documentation, new-staff training time increased from three days to two weeks, while training and technical support costs rose by 30%. Furthermore, service downtime averaged five hours per incident, and data-entry error rates reached 15–18%. Redundant workflows also emerged, such as nonstandard file naming and delayed report consolidation. Based on these findings, this research proposes guidelines for developing effective information system user manuals. Manuals should define clear objectives and target audiences, document real-world workflows, and organize content by key system functions. Multimedia elements—including text, screenshots, flowcharts, and videos—should illustrate step-by-step procedures. Additionally, essential field checklists and case studies are recommended to enhance accuracy. Version control and user-feedback mechanisms are also vital to ensure continuous review and updates. Implementing these practices demonstrated significant benefits: training durations fell to three–five days, error rates dropped below 3%, and technical support workload and service downtime both decreased by 60%. Standardized workflows improved organizational consistency, data quality increased, and information security was strengthened. The study concludes that developing efficient information system user manuals is essential for the success of IT projects in both public and private sector organizations in the future.

Keywords: Information System Manuals, Knowledge Management, Thai Organizations, Operational Efficiency, Legal Risks

Introduction

In the digital age, where technology plays a crucial role in every sector of the economy and society. Information Systems (IS) have become essential tools that enable organizations to operate efficiently and quickly respond to user needs. Information Systems play

a vital role in data storage, data processing, and data presentation to support management decision-making. However, to maximize the efficiency of using Information Systems, Information System Manuals are necessary. These documents help establish guidelines for the correct and standardized use of the system.

Information System Manuals are not just documents that describe the steps for using the system; they also serve as crucial tools for transferring knowledge, establishing work standards, and reducing errors that might arise from system usage. These manuals enable employees at all levels to perform their duties with confidence, reduce the time required for training new employees, and increase the organizational agility in operations.

In Thailand, many organizations still lack awareness of the importance of Information System Manuals, leading to several problems such as work delays, data security risks, and non-compliance with regulations. For instance, a research by Taraporn Anuwech (2020) that studied the use of the Electronic Document System (EDS) at Mahasarakham University found that the lack of a procedural manual caused most personnel to continue using a parallel paper-based system because they didn't correctly understand how to use the EDS. Furthermore, a study by Sawitree Boonpalit (2017) on the development of the Mahidol-IR database at Mahidol University found that the absence of an operating manual resulted in data entry errors and delays in coordination between departments.

The impact of lacking manuals is not limited to operational efficiency; it also affects legal and data security risks. A study by the Office of the Public Sector Development Commission (2010) indicated that the absence of manuals defining data storage procedures in government agencies led to security vulnerabilities, such as unauthorized data access and loss of critical information. Furthermore, the lack of manuals also affects employee morale because employees have to face the pressure of unintentional errors.

The problem of lacking operating manuals in an organization generates significant negative impacts across multiple dimensions, especially concerning work efficiency and legal risks. When an organization lacks clear system manuals, it leads to delayed operations and frequent errors, such as incorrect data entry and a lack of consistency in work across different departments.

Furthermore, it increases the risk of non-compliance with laws, such as labor law and the Personal Data Protection Act (PDPA), which may result in legal penalties and damage to the organization's reputation. System manuals are thus an important tool that helps reduce errors, promote standardized operations, and enable the organization to manage risks efficiently, reduce costs incurred from error correction, and fully maintain data security. Therefore, having complete and up-to-date operating manuals is a key factor in sustainably elevating the efficiency and continuity of activities within an organization (Sharma, 2024). More specifically, the issue of lacking operating manuals in Thai government agencies is a major cause of negative impacts on the efficiency of public administration and services to the public, as pointed out by the Office of the Permanent Secretary, Ministry of Labour (2022). They indicated that the absence of clear operating manuals results in complex and difficult-to-understand work procedures, filled with rules and regulations that waste time in operations, a lack of consistency in implementation between agencies, which makes performance monitoring and evaluation difficult. Subordinates are unaware of the correct procedures, leading to errors and delays in operations. Additionally, this causes the public to wait longer, reduces satisfaction with public services, and creates a negative image of the civil service system. The preparation of operating manuals is therefore an important tool that helps set work standards, reduce errors, create a shared understanding of work, and enhance the efficiency of public administration to be modern and transparent, in order to provide quality services to the public (Office of the Permanent Secretary, Ministry of Labour, 2022).

For this reason, studying the importance of Information System Manuals is essential for Thai organizations in the digital age, to establish operational standards, reduce errors, and increase competitive potential in the global market. Organizations should recognize the role of these manuals and invest seriously

in their preparation, in order to respond effectively to technological changes and market demands.

The objective of this article is to study the importance of Information System Manuals and analyze the impacts that occur when an organization lacks them, through a document analysis focusing on case studies within Thai government agencies to reflect on the problems and appropriate solutions, especially in the context of Thai organizations adapting to the digital age. This article will present a conceptual framework on the role of Information System Manuals within the organization, analyze the impacts of lacking manuals in various aspects such as operational efficiency, legal risks, and human resources, and propose appropriate guidelines for developing manuals for Thai organizations.

Problems Related to Operational Efficiency

1. Delays and Increased Costs

The lack of Information System Manuals in an organization leads to significant operational delays and increased costs. This problem is not merely due to technical flaws in the system but also includes unsystematic management, a lack of standardization, and inadequate resources, all of which affect the overall efficiency of the organization.

1.1 Operational Delays

Operational delays often stem from non-standardized work processes, such as duplicate data entry, time-consuming document retrieval, and inefficient inter-departmental coordination. The research by Taraporn Anuwech (2020), which studied the use of the Electronic Document System (EDS) in the Ministry of Education (MoE), found that the MoE faced significant delays due to the lack of clear usage manuals. Users were unsure how to systematically retrieve documents and prioritize the approval process, resulting in each circular taking up to 3 hours to process. This time could have been reduced by about 50% if there had been a manual explaining the steps for searching, setting up notifications, and attaching document files in accordance

with the type of document. Furthermore, coordination among units within the ministry required redundant communication via email and telephone because operators lacked confidence in the approval routing within the system. The organization thus lost opportunities to expedite the delivery of important policies to educational institutions nationwide. Meanwhile, the indirect cost from personnel time lost amounted to a daily value of up to 200,000 Thai Baht. If the organization had developed a comprehensive EDS manual, it would have helped employees work faster, eliminate unnecessary steps, and efficiently promote the tracking of approval outcomes.

Another example is the research by Boonpalit (2017), which studied the problems in developing the Mahidol-IR database at Mahidol University. It found that the absence of an operating manual led to issues with incorrect data entry and delays in data updates between departments. This delay not only affected internal operations but also reduced the confidence of external users, such as researchers and students.

1.2 Increased Costs Due to Delays

The delays that occur in the work process also lead to increased costs in various forms, such as costs related to time, labor, and additional resources. A study by Chanisa Homhuan and Panatporn Rueangchoengchum (2021) found that the Revenue Department, which implemented the Revenue Information System (RIS), experienced increased IT labor costs due to the lack of a system usage manual. Support staff had to spend a total of over 5 hours per day answering basic questions, such as password resets, access rights management, and customizing quarterly tax reports, with each report taking up to 2 hours to set up. This type of work generated labor costs as high as 20,000 Thai Baht per month without creating any added value for the organization. Furthermore, the RIS system frequently had errors because users were unaware of how to use crucial functions, such as retrieving appropriate assessor

data, leading to redundant and confusing reports. When the organization had to correct erroneous data, over 10 Revenue Department employees had to work overtime during each tax submission cycle. The development of a RIS user manual that specifies the steps for report setup and pre-data validation would help reduce labor and time costs, while also increasing satisfaction among officials and taxpayers.

1.3 Solutions to Reduce Delays and Costs

To resolve the problem of delays and reduce costs, organizations should develop comprehensive Information System Manuals covering every step, from basic usage to initial troubleshooting. These manuals should be designed to be easy to read, include illustrations, and be accessible online. Furthermore, organizations should continuously train employees on how to use the system to increase their skills and confidence in performing their duties.

An example from the Department of Provincial Administration (DOPA) found that compiling the monthly operational summary report required a total of over 2 weeks because each province used a different reporting format. There was no operating manual specifying the column structure, field names, and data entry standards, which forced the central office to collect files from 76 provinces and reformat them before presentation to the executives. This resulted in additional costs from hiring an external data analyst to standardize reports, costing 50,000 Thai Baht per month. Common errors included the use of non-standardized agency codes and incomplete numerical entries. If DOPA were to develop a manual for report creation with template files and clear field descriptions, it would help reduce the report reformatting process to no more than 3 days and reduce external hiring by 80%, as well as increase data accuracy, allowing executives to make faster decisions.

1.4 Impact on Internal Service Quality

The impact on internal service quality occurs when the information system lacks a supporting manual, resulting in inconsistent use and maintenance, prolonged service downtime and technical errors, ultimately leading

to dissatisfaction among both internal and external users of the agency.

For example, the Ministry of Public Health (MoPH) implemented the Hospital Information System (HIS) but lacked a usage manual. This resulted in the training of new personnel taking longer, from the planned 3 days to 2 weeks, because the training team had to verbally instruct basic procedures, from logging in and creating patient history files to transferring data between departments. Furthermore, the absence of manual documentation led to a slower response to technical issues; staff had to call the IT department for every incident, such as a frozen screen or failure to display new data, resulting in an average service downtime of up to 5 hours per incident, creating dissatisfaction among nurses and patients. Meanwhile, training costs increased by 30% due to travel and accommodation expenses for external trainers. Developing a HIS training manual with illustrations, step-by-step procedures, and basic troubleshooting case studies would help accelerate the learning process, reduce service downtime, and improve overall patient care (Sharma, H., 2024).

2. Operational Errors

Operational errors are a significant consequence of lacking information system manuals in Thai organizations. These errors often arise from the absence of clear guidelines, leading staff to make mistakes in various processes such as data management, processing, and decision-making. Several studies have highlighted the link between the absence of manuals and errors that impact organizational efficiency and costs.

2.1 Data Management Errors

In government agencies, the lack of Information System usage manuals results in significant data management errors. For example, the Office of the Auditor General of Thailand (2023) Report found that the Revenue Department's income data system had a high rate of incorrect data entry, reaching 15%, because officials lacked clear guidelines or standard forms for verifying the accuracy of figures before recording them.

This resulted in increased time spent on searching for and correcting erroneous data. Furthermore, the absence of manuals encouraged redundant work between departments to verify the accuracy of financial reports, significantly increasing costs related to time and resources (Office of the Auditor General of Thailand, 2023).

2.2 Inconsistencies in Operations

The audit report of the Office of the Auditor General of Thailand (OAG) for 2024 found inconsistencies in the use of the E-Office system by the Ministry of Interior in provincial areas. Each province set different folder structures and document naming criteria, resulting in the central office being unable to consolidate flood situation reports into a single, unified view. It took over 10 days to verify and regroup the data. Furthermore, some internal circular documents had incomplete content because officials were unaware of the guidelines for storing attachments and specifying version sequences, leading to confusion and redundant work processes between local units and the central office (Office of the Auditor General of Thailand, 2024).

2.3 Security Impacts

Errors in system configuration or data management also increase security risks. According to the audit report of the Office of the Auditor General of Thailand (OAG) for 2023, the lack of an internal Information System usage manual at the Department of Foreign Trade, Ministry of Commerce, resulted in officials being unaware of the guidelines for defining user rights and methods for encrypting critical data. This unintentionally caused the e-Procurement system to expose internal procurement project information externally, leading to unauthorized access to budget documents totaling over 500 million Thai Baht by external parties. This created a risk of confidential trade data leakage and increased the opportunity for cyberattacks, such as Phishing attacks to steal system login credentials. These errors took over 2 weeks to audit and rectify the system, along with the cost of hiring external security experts, amounting to 1.2 million Thai

Baht. Therefore, the development of a system manual covering access control standards and data encryption guidelines is a crucial fundamental preventative measure (Office of the Auditor General of Thailand, 2023).

2.4 Solutions to Prevent Errors

To resolve operational errors, organizations should create comprehensive information system manuals covering all procedures, from basic usage to troubleshooting. These manuals should be easy to read, include illustrations, and be accessible online. Furthermore, organizations should provide continuous staff training on system usage to enhance skills and reduce errors. For example, developing ERP system manuals helps users set passwords according to organizational standards and check system security independently.

2.4.1 Develop System Usage Manuals and Standard Forms.

The Ministry of Interior should issue a manual for the E-Office system specifying the folder structure, file naming conventions, and version sequence examples. This would help officials in all provinces use the same format, reducing inconsistencies in data storage and retrieval. For instance, the Ministry of Interior issued the E-Office Manual, 2024 Edition, which mandated the folder format Report_YYYYMMDD and a standard file naming convention such as Announcement_Department_SequenceNo_Date. As a result, Nakhon Pathom Province was able to retrieve internal circular documents 60% faster and reduced errors in redundant file attachments from 18% to 5% (Office of the Auditor General of Thailand, 2024).

2.4.2 Conduct Manual-Based Workshops.

The Revenue Department should provide RIS usage training primarily utilizing the manual, integrating real-life case studies and exercises, and holding quarterly review seminars to reiterate best practices and update new functions. For example, the Revenue Department conducted a two-day workshop based on the RIS Manual 2023, using the case study of Value Added Tax report configuration. As a result, the sample group of officials were able to configure reports 75% more accurately and

quickly compared to before the training (Office of the Auditor General of Thailand, 2024).

2.4.3 Periodic Data Quality Review. The Office of the Auditor General of Thailand (OAG) recommends that government agencies conduct a monthly Data Quality Audit, using a checklist from the manual to verify the completeness and accuracy of data before submission to the central office. For example, the Bureau of the Budget implemented a monthly Data Quality Audit, using a checklist derived from the Central Treasury Data Manual. This resulted in the error rate for budget data sets decreasing from 12% to 3% within the first quarter of the 2024 fiscal year (Office of the Auditor General of Thailand, 2024).

2.4.4 Create an Internal Support Team: The Department of Provincial Administration (DOPA) should establish a Data Steward in each province to act as a consultant and local manual supervisor, helping to resolve initial problems and gather feedback for continuous manual improvement. For example, DOPA established Data Stewards in all provinces starting in 2024 to monitor the use of the E-Registration system and provide consultation according to the manual. This reduced the system's average downtime per incident from 4 hours to 1 hour and decreased calls to the central IT department by 65% (Office of the Auditor General of Thailand, 2024).

In summary, the main approaches to prevent errors in information systems within government agencies consist of: the development of clear manuals and standard forms to reduce inconsistencies in system use; the conduct of manual-based workshops coupled with real case studies to confirm practical guidelines; the regular data quality checks using checklists from the manuals to detect and correct errors before submission; and the establishment of an internal Data Steward team within each agency to supervise the manual, be responsible for initial support, and continuously gather feedback for manual updates. The implementation of these measures helps establish standards, reduce

errors, and enhance the efficiency of internal information systems within the organization.

Information System User Manual

Having a standard and easy-to-understand information system user manual is a crucial component for the success of system usage, especially in government agencies which have complex work characteristics and involve the public. From a theoretical perspective, such as the Technology Acceptance Model (TAM) by Davis (1989), the effective acceptance and usage of a new system by users depends on two major factors: Perceived Usefulness and Perceived Ease of Use. A quality user manual directly affects both of these perceptions by acting as a bridge between the system's capabilities and the user's understanding. A well-written manual reduces anxiety and resistance to new technology (Technophobia), making civil servants and government employees feel confident and able to fully utilize the system.

In the context of government agencies, which often experience personnel changes and have users with diverse levels of digital skills, the user manual serves as Tacit Knowledge converted into Explicit Knowledge, which can be transferred and trained (Laudon & Laudon, 2020). The manual not only explains work procedures but also helps create Standardization in operations, reduces errors, and ensures that public services meet the same standards. Furthermore, in terms of the DeLone & McLean (1992) Information System Success Model, the quality of system documentation (System Quality) and the quality of information (Information Quality), which includes the user manual, are important inputs leading to system Use and ultimately User Satisfaction.

Investing in the preparation and updating of user manuals is therefore not a luxury but a fundamental strategy that maximizes the value of public sector investment in information technology, resulting in public

service delivery that is more efficient, transparent, and trustworthy.

In designing information systems for government agencies, sound User Experience and User Interface (UX/UI) design guidelines serve as a crucial foundation that helps reduce complexity and enhance user satisfaction. UX/UI principles that focus on **User-Centered Design** result in systems that are easy to use, intuitive, and reduce the learning curve, which aligns with the Perceived Ease of Use factor in the TAM model (Davis, 1989). However, even with an excellent UX/UI, having a comprehensive and accessible user manual remains absolutely essential for public sector organizations.

The necessity of the manual in this context can be explained from several perspectives. Firstly, government agencies must serve a highly diverse public in terms of digital skills, physical abilities, and technological familiarity. The manual acts as a key Assistive Mechanism for user groups who might face difficulties even with the simplest design (Nielsen, 1993). Secondly, government information systems often need to connect with complex laws, regulations, and work procedures that cannot be fully communicated solely through UI design. The manual thus serves as a **Standard Operating Procedure** reference source that explains the context, interpretation, and legally correct work steps, which are requirements for Accountability and Auditability in the public sector (Laudon & Laudon, 2020).

Therefore, good UX/UI and user manuals are not mutually exclusive choices but are mutually reinforcing factors. Good UX/UI reduces reliance on the manual in normal situations, while a comprehensive manual serves as an emergency map and a training tool that enables both internal and external users to use the system correctly, completely, and in alignment with public policy in all situations.

Case Studies: Lessons from Organizations Lacking Information System Manuals

Sawitree Boonpalit (2017) studied the Mahidol-IR database development project and found that the absence of operational manuals resulted in three main problems: (1) data entry that did not meet standards, (2) delays in system updates, and (3) miscommunication between departments. After implementing a concise manual with examples, the university was able to reduce training time by 50% and increase data accuracy by 35%.

Panorama Consulting Group (2024) reported that the lack of Information System usage manuals in private sector organizations results in severe impacts, evident in the case study of The Hershey Company, a major U.S. chocolate manufacturer, which experienced a catastrophic failure in adopting the SAP ERP system in 1999. It was found that Hershey decided to accelerate the new system's implementation from 48 months to 30 months to finish before the Y2K issue, without providing adequate usage manuals and proper employee training. The resulting impact was that the new system could not process \$100 million worth of orders during the critical Halloween season, which is its highest-selling period. This led to a 12% drop in sales and a 19% reduction in profit. The stock price fell by 8%, and the company took several years to recover. The key lesson from this case is that the lack of a clear training plan and usage manuals led to the failure of a multi-hundred-million-dollar project. Investing in technology without supporting manuals not only results in monetary loss but also damages reputation and customer confidence. Therefore, system manuals are a crucial factor that organizations must prioritize equally with the technology for project success.

The lack of Information System usage manuals in government agencies results in severe impacts on administrative efficiency and the quality of public service delivery. The case of the National Programme for IT (NPfIT) in the UK's National Health Service (NHS) illustrates that the absence of clear operational

documentation led to local NHS trusts and frontline staff failing to understand system workflows, lacking data entry standards, and not knowing how to troubleshoot basic issues. This resulted in regional variations in system adoption, frequent user errors, and a constant reliance on urgent support from IT vendors. The lack of manuals also created an obstacle to training, as the training teams had no standardized curriculum, leading to the creation of inconsistent and low-quality teaching materials. Consequently, patient data records were often incomplete or stored in incorrect formats, limiting clinical decision-making and rendering data unreliable. Multiple system modules were improperly configured, causing frequent downtime. Doctors and nurses lost confidence, leading many units to revert to using their old systems instead of NPfIT. Financially, the project went nearly 50% over budget, exceeding £6 billion, and was canceled in 2011, leaving behind a legacy of uneven system capabilities across units. The key lesson is that high-quality usage manuals are the foundation of operations, helping to frame procedures, train personnel, and establish a governance mechanism that promotes consistency and accountability. Therefore, public sector IT projects should allocate sufficient resources for the development, testing, and continuous updating of manuals alongside software development to support user adoption, maintain data consistency, and maximize return on investment (West, D. M., 2016).

The Office of the Council of State (OCS) undertook a project to develop a website and information system on the internet to provide legal information services to the public and government agencies. However, a clear lack of Information System usage manuals was identified. The resulting issues included 1) Lack of website maintenance continuity, as new personnel did not understand the system structure and basic troubleshooting methods, leading to broken links and outdated information for long periods. 2) Personnel in each unit updated content using different methods, resulting in inconsistent data presentation formats in terms of document style, colors, and layout, which

confused users and reduced the website's credibility. 3) Technical errors, such as a non-functioning search system or a failed document download system, arose because system administrators lacked standard procedures for data backup and software version checking. 4) The process of training new personnel took a long time because there was no reference documentation, necessitating reliance on verbal knowledge transfer, which often led to misunderstandings and the repetition of errors.

The key lesson is that the creation and maintenance of comprehensive Information System usage manuals, covering everything from the database structure, content update procedures, data backup and recovery methods, to technical troubleshooting guidelines, are essential to ensure personnel can operate continuously, reduce errors, and enhance the quality of legal information services to the public. Investing in system manuals is therefore akin to creating an assurance that the government agency's information system will be durable, stable, and flexible enough to accommodate future changes in personnel and technology (Jansakul, 2015).

The Department of Local Administration (DLA), Ministry of Interior, implemented the e-LocalTax online local tax collection system in 2021 without preparing a clear and complete Information System usage manual. This resulted in significant impacts on the operational efficiency of the agency, specifically 1) Delayed and inconsistent tax invoice generation. This occurred because officials in each district used different data entry methods; some manually entered revenue account details, while others used import files. This resulted in the time for issuing tax invoices increasing from the original 3 days to 10 days, affecting the organization's cash flow and revenue collection. 2) Higher error rate in tax calculation. This was due to officials not knowing how to correctly set the tax rate coordinates in the system, leading many districts to collect taxes lower than legally mandated. This included instances of incomplete entry of ID card numbers and incorrect rounding in the billing amounts. The overall error rate

thus increased from 5% to 18% within the first three months of use. 3) Surging workload for the IT support team. This happened because officials had to contact the central IT team for basic guidance, such as correcting tax parameters and setting up an increased number of administrator accounts. Common cases, such as password resets and date format correction, resulted in an average service downtime of up to 6 hours per incident and prevented the IT team from focusing on new feature development. 4) Lack of a systematic training mechanism. Due to the absence of a manual, new officials had to use an informal learning method through observation and asking colleagues, which often led to repeated incorrect instruction. Training each person took up to 2 weeks, instead of the anticipated 3 days if a comprehensive manual had been available.

The key lesson from this case is that the absence of an effective Information System manual creates inconsistencies in operations, increases time costs and expenses for technical support, and reduces system credibility. Therefore, government agencies need to develop clear manuals that cover core functions, operational procedures, and basic troubleshooting guidelines, alongside systematic training, to sustainably elevate the efficiency and quality of internal services (Kaewklao, 2023).

The Chiang Mai Provincial Public Health Office implemented a Hospital Information System (HIS) for patient data management in 2020 but encountered a clear lack of a system usage manual. This resulted in negative impacts on service processes and patient data management efficiency, as follows: 1) Personnel in the medical records and technical departments did not understand the various module structures of the HIS, leading to different usage methods. Some hospitals in the network still recorded data redundantly, both in the electronic system and in paper medical records, resulting in delays and errors in retrieving patient history. 2) Data transfer between units, such as from the emergency department to the inpatient department, frequently failed because officials were unaware of the steps for updating

patient status in the HIS. This led to patients being missed and their data not being transferred, causing treatment delays and increasing risks to patients. 3) The IT support team had to spend more time providing assistance, as there was no procedural documentation or manual for system installation and configuration. When problems arose, such as the inability to connect to the database or authentication system failures, support staff had to analyze and resolve the issues ad-hoc. This increased the average service downtime per incident from 2 hours to over 5 hours. 4) Training for new personnel took longer because the training team lacked a standardized usage manual. They had to rely on verbal instruction with inconsistent content, creating confusion and reducing confidence in system usage.

The key lesson is that the development and continuous updating of a HIS Information System usage manual, covering usage guidelines, core functions, error management procedures, and system maintenance guidelines, will help personnel perform consistently, reduce errors, and enhance the continuity of quality healthcare services (Chaiyaprupek, 2022).

Impact	Description
 Operational delays	Personnel self-learn system usage
 Data entry errors	Non-standardized data accuracy
 Coordination issues	Redundant work between departments
 Legal risks	Non-compliance with PDPA, labor laws
 Higher costs	Error correction and data recovery
 Reduced security	Increased risk of leakage, cyberattacks

Figure 1 Impacts on Organizations Lacking Information System Usage Manuals

Case Study: Lessons from Organizations with Effective Information System Manuals

Bank of Ayudhya Public Company Limited (Krungsri) developed a detailed manual for the Core Banking system, categorizing internal transaction functions within each module, complete with illustrated steps and real-world case examples. This resulted in new branch employees being able to learn and perform their work within 2 weeks, down from the previous duration of 6 weeks. It also reduced the number of IT support requests by 40% within 6 months of use. The manual documentation further enabled branch teams to accurately summarize daily loan reports, reducing accounting data errors from 5% to 1%, thereby enhancing service standards and increasing customer satisfaction (Mancini, J., 2024).

The Department of Provincial Administration (DOPA), Ministry of Interior, created a detailed user manual for the electronic civil registration system (e-Registration), covering everything from registration and updating citizen data to checking application status. The manual includes screenshots with step-by-step explanations and guidelines for resolving common issues. This resulted in a reduction of the average ID card issuance time from 5 days to 1 day, and a decrease in the rate of data discrepancies with the central register from 8% to 2% within 6 months of use. Furthermore, requests for IT support were reduced by 55%. This underscores that an effective system manual helps standardize procedures, improve data quality, and increase citizen satisfaction (OECD, 2022).

The Department of Land Transport (DLT) has prepared a detailed user manual for the e-Services online system. The manual, in PDF format, and instructional videos were published on the main website. Key topics covered include, account registration, filling out the driver's license renewal application form, checking application status, and electronic fee payment, all supported by screenshots, case studies on handling common problems, and data security recommendations. The positive impacts on the organization are as follows:

1) The usage rate of the e-Services system increased from 35% of all driver's license renewal applicants in the first quarter of 2022 to 78% within the following six months. This is because citizens could follow the steps in the manual on their own, reducing confusion and the need to travel to the transport office. 2) The average processing time for online driver's license renewal applications decreased from 7 days to 1 day, as office staff no longer spent time verbally explaining procedures but could immediately reference the online manual to assist citizens. 3) The error rate in data entry, such as incorrectly formatted expiration dates and duplicate ID number entries, decreased from 14% to 3% within the first three months of using the manual. 4) The volume of support requests via telephone and email decreased by 60%, alleviating the workload for the internal IT support team and allowing staff more time to focus on other quality-oriented tasks.

The key lesson learned from the Department of Land Transport is that user manuals for information systems that are clear, cover all steps, and are continuously updated based on user feedback help establish service standards, improve data quality, and significantly enhance the efficiency of public service delivery (Pattanapong, S., 2022).

The Customs Department has developed a comprehensive user manual for the e-Customs Clearance system. The content of this manual is organized into chapters corresponding to the main procedures, including: submitting digital applications, attaching supporting documents, checking application status, and paying customs duties. It is accompanied by screenshots of real-world operations, case examples of common problems (such as incorrectly modifying the HS Code), and troubleshooting guidelines, along with a prototype program for expedited export (Fast Track). The positive organizational impacts are divided into three main areas: 1) Reduction in Customs Clearance Time: The e-Customs Clearance system, referenced in the manual, helped reduce the inspection process from an average of 6 hours to no more than 2 hours per

declaration. This led to an increase in the On-time Clearance Rate from 72% to 93% within the first quarter after the manual's publication. 2) Improvement in Application Data Quality: Since the manual includes a checklist for checking essential fields like product number and customs value, the error rate in electronic applications decreased from 18% to 4%. This reduced the workload for the support department and minimized repeated requests for corrections. 3) Reduction in IT Support Workload: The Customs Department reported that the number of requests for assistance regarding the e-Customs system usage dropped by over 60% within six months after the manual integrated instructional videos and basic troubleshooting advice. This allowed technical staff to focus on developing new features instead of resolving user issues.

The key lesson from the Customs Department case highlights that an effective information system user manual must cover the overall process, sub-functions, step-by-step explanations, case examples, and troubleshooting guidelines. This helps establish operational standards, reduce errors, support training, and enhance the efficiency of information systems within government agencies (Sawatwattana, 2023).

The Department of Provincial Administration (DOPA), Ministry of Interior, improved the user manual for the Thai Digital ID system (Chanakaew, 2024). This manual presents holistic content, starting from the registration process via the application, scanning identity verification documents, linking the citizen ID card data with a bank account, and managing data access rights within the system. It includes screenshots, step-by-step explanations, demonstration videos, and case studies of common problems, such as photo verification issues and failed OTP notifications. The positive organizational impacts include: 1) The successful registration rate increased from 68% in the first quarter of 2023 to 93% within 6 months after the manual's publication. This is because citizens and municipal district officials could clearly follow the steps, reducing redundant requests for document corrections. 2) The time required to verify and

approve a Digital ID decreased from an average of 4 days to no more than 1 day, as staff no longer needed to wait for further clarification but could immediately refer to the manual to check eligibility and document completeness. 3) The number of requests for assistance to the ICT department decreased by 70% within the first half-year, as users could independently find solutions to problems like PIN resetting or incorrect card scanning formats via the Troubleshooting section of the online manual. 4) Citizen satisfaction with the Digital ID service increased from an average score of 3.2 to 4.6 out of 5 after the new manual was implemented. Citizens reported that the usage steps were easy to understand and consistent with smartphone user experience.

The key lesson from this case is that an effective information system manual must cover the overall process, sub-functions, step-by-step explanations, case examples, and multimedia to establish standards, reduce errors, improve user experience, and enhance efficiency within government agencies.

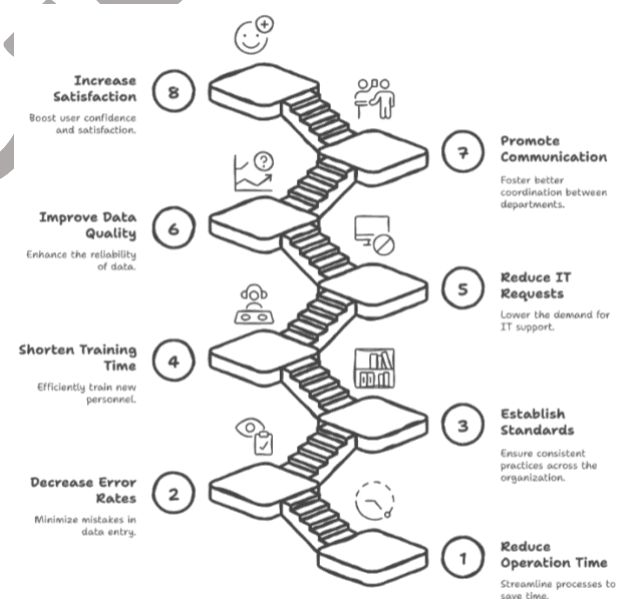


Figure 2 Outcomes of Having an Effective Information System Manual

Comparison Between Organizations Lacking and Organizations with Effective Information System Manuals

Based on the study, a comparison can be made between organizations lacking an information system manual and those with an effective one as follows:

1. Consistency of Work Processes

Organizations lacking an information system manual have no single standard for usage. Personnel often follow personal approaches, resulting in inconsistent work processes across departments. Data and document transfers become inaccurate and require multiple repetitions. In contrast, organizations with an effective information system manual clearly define procedures and data structures. All units can follow the same process, reducing redundant work and building confidence in data accuracy.

2. Time Efficiency in Operations

Without a manual, finding out how to use various system functions relies on trial-and-error and asking other staff. This increases the time spent on report generation and document management, subsequently lowering the response rate to internal policies and requests. Organizations with a manual specify step-by-step procedures with case study examples, enabling employees to operate immediately and quickly, significantly reducing operation time.

3. Data Accuracy

Organizations lacking a manual have no standard checking mechanism for data input, leading to a higher error rate in entering numbers and organizational codes than when a manual is present, as users lack checklists or reference data formats. Organizations with a manual utilize checklist elements for key fields and data entry examples, making the database more accurate and reliable.

4. Technical Support Workload

Without a manual, basic questions about system usage frequently flood the IT department. IT staff must spend time on basic instruction and cannot focus on strategic work. Organizations with a manual, complete with a basic troubleshooting section, enable users to solve simple problems themselves, reducing the IT

burden and freeing up time for further system development.

5. Training and Knowledge Transfer

The lack of a manual means new personnel training relies on verbal instruction and observation, taking up to two weeks per group. In contrast, organizations with a manual featuring screenshots, step-by-step explanations, and exercises can reduce training duration to just a few days and create consistent learning standards.

6. Data Security Control

In organizations without a manual, guidelines for access rights definition and data encryption lack clarity, leading to a higher risk of leaks and sensitive data breaches. Organizations with a manual specify guidelines for access control and data encryption procedures, effectively reducing security risks and complying with data protection standards.

7. Cross-Departmental Coordination

The absence of an information system manual creates obstacles to inter-departmental data exchange, as each party uses different data formats and structures. Time is needed to adjust formats and check consistency. Organizations with a manual use the same template across all units, resulting in smooth and efficient data sharing and cross-departmental operations.

8. Continuous System Development and Improvement

Organizations lacking a manual have no mechanism for collecting feedback and updating the manual when the system is modified, causing the manual to be inconsistent with the current system version and creating confusion. Organizations with a manual establish a systematic process for receiving feedback and updating content, keeping the manual up-to-date and supporting system changes.

9. Overall Quality of Internal Service

Without a manual, the quality of internal service fluctuates; services are delayed and errors occur frequently. In contrast, organizations with a manual

establish service standards, reduce system downtime, and improve internal support to a higher quality.

10. Organizational Learning Culture

Organizations without a manual lack internal learning resources and do not promote the improvement of system usage skills. Conversely, organizations with a manual create an organizational culture that supports continuous learning and shared knowledge development through ongoing manual usage.

Table 1 Comparison Between Organizations Lacking an Information System Manual and Those with an Effective Information System Manual

Aspect	Organization Lacking IS Manual	Organization with Effective IS Manual
1. Process Consistency	Inconsistent work processes, personal approaches	Standardized procedures, uniform adherence
2. Time Efficiency	Slow operations, reliance on trial-and-error	Rapid operation, immediate execution
3. Data Accuracy	High error rates, no input checklist	High accuracy, reliable database
4. IT Support Workload	High volume of basic IT questions	Reduced IT burden, users self-solve
5. Training/Knowledge	Lengthy verbal training (weeks)	Fast, standardized training (days)
6. Data Security	High risk of data leaks, unclear access	Strong control, compliance with security standards

Aspect	Organization Lacking IS Manual	Organization with Effective IS Manual
7. Cross-Unit Coordination	Difficult data exchange, format mismatch	Seamless data sharing, uniform templates
8. System Improvement	No feedback loop, manual becomes outdated	Systematic updates, content remains current
9. Internal Service Quality	Service delays, inconsistent quality	High-quality service, reduced errors
10. Learning Culture	Lack of internal learning resources	Supports continuous learning and development

Guidelines for Developing Effective Information System Manuals

Developing efficient information system manuals requires systematic planning, design, and execution. These manuals not only enhance operational efficiency but also mitigate errors and organizational risks. Below are key steps for creating impactful manuals.

1. Define Objectives and Audience

1.1 Clarify Manual Goals: Ensure the manual addresses organizational needs, such as improving efficiency, reducing errors, or supporting legal compliance (e.g., PDPA or labor laws).

1.2 Analyze Target Users: Tailor content to user expertise levels (e.g., new hires, general staff, or specialists). Research by Sharma (2024) shows that manuals aligned with user comprehension reduce errors by 30%.

2. Gather Information and Structure Content

2.1 Collaborate with Experts: Interview system administrators, IT teams, or department heads to collect technical and procedural insights.

2.2 Organize Content Logically: Divide content into sections like Introduction, Usage Steps, Troubleshooting, and FAQs. A clear structure improves user navigation (ClickHelp, 2025)

3. Design Content and Format.

3.1 Use Simple Language: Avoid jargon and explain technical terms.

3.2 Incorporate Visuals: Add diagrams, screenshots, or videos to clarify complex steps. MadCap Software highlights visuals as critical for engagement.

3.3 Offer Multiple Formats: Provide manuals in PDF, online platforms, or mobile apps for accessibility.

4. Review and Refine.

4.1 Expert Validation Have specialists verify accuracy and completeness of procedures.

4.2 User Testing Gather feedback from end-users to identify gaps. Manual Writers (2020) found testing reduces operational errors significantly.

5. Publish and Train.

5.1 Distribute Through Channels: Publish manuals on intranets, cloud platforms, or dedicated apps for easy access.

5.2 Conduct Training Sessions: Thai Airways improved safety compliance using Web Manuals for staff training (Web Manuals, 2023).

6. Continuous Improvement.

6.1 Collect Feedback: Implement online feedback systems to track user suggestions and update content accordingly.

6.2 Regular Updates: Revise manuals to reflect system changes, such as adding new FAQs or updating outdated steps.

Guidelines for Leveraging Effective Information System User Manuals to Develop the Organization

To elevate work process standards, minimize errors, and foster a learning culture within an organization, the systematic creation and application of

high-quality Information System (IS) user manuals are crucial. A manual that comprehensively covers system structure, operational steps, and basic troubleshooting will enable personnel at all levels to use the system correctly, quickly, and confidently. It will also promote cross-departmental coordination and support future technological changes, as outlined below

1. Define Objectives and Target Audience

1.1 Identify the manual's primary goals: Such as reducing operation time, decreasing the error rate, or improving data quality.

1.2 Define the main user groups: Including operational staff, IT department, and executives.

1.3 Adjust the content level to suit the knowledge and responsibilities of each group.

2. Gather Information and Design Content Structure

2.1 Form a team of system experts and actual user representatives to gather work processes, common problems, and frequently asked questions.

2.2 Divide content into chapters based on key functions Such as system login, user data management, data backup and recovery, and basic error correction.

2.3 Create a Table of Contents and content map for easy navigation.

3. Develop Media and Presentation Format

3.1 Use mixed media: Including text, screenshots, flowcharts, and short videos.

3.2 Prepare real-world case studies with step-by-step resolution procedures.

3.3 Develop checklists for important fields, tables of example default settings, and special 'Tips' in each chapter.

4. Review, Test, and Refine

4.1 Have a pilot group of users test the manual and system according to the defined steps.

4.2 Gather feedback on clarity, problem coverage, and media suitability.

4.3 Refine content, add illustrations, or correct text where users still misunderstand.

5. Publish and Conduct Workshops

5.1 Upload the manual to the organization's online system with search and download functions.

5.2 Organize practical workshops primarily using the manual, integrating real-life simulated exercises.

5.3 Conduct quarterly review seminars to present new features and emphasize best practices.

6. Establish a Mechanism for Continuous Improvement and Development

6.1 Appoint a Data Steward or Technical Writer team to collect user suggestions via online forms.

6.2 Monitor key performance indicators (KPIs): Including operation time, error rate, and volume of IT support requests.

6.3 Update the manual to align with new software versions and changing internal processes.

7. Integrate the Manual with Organizational Management and Standards

7.1 Link the manual to internal ISO/IEC 20000 standards and Standard Operating Procedures (SOPs).

7.2 Develop reference documentation for risk management and information security guidelines.

7.3 Foster an organizational culture that promotes using the manual as the primary learning resource.

Following these guidelines will enable the organization to create and utilize effective information system manuals, resulting in faster training, reduced errors, improved data quality, and the reinforcement of a culture of continuous learning and development within the organization.

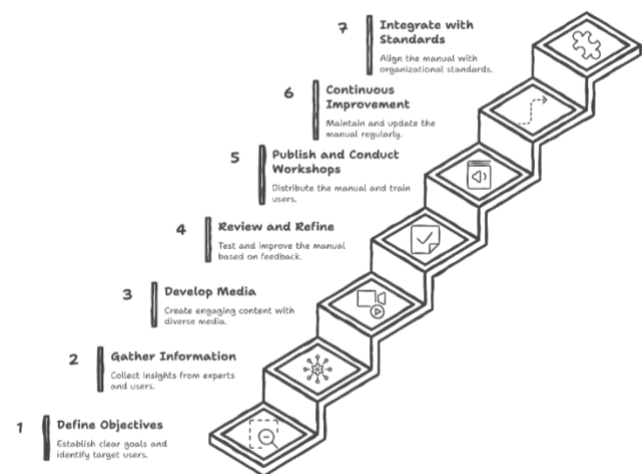


Figure 3 Guidelines for Utilizing Effective Information System User Manuals for Organizational Development

Summary

In the digital era, information systems have become the backbone of organizational management, yet many agencies still lack comprehensive user manuals. This gap between technology and everyday operations erodes staff confidence, undermines standard procedures, and leads to a variety of errors.

This study examines the impacts of missing information system manuals within Thai public organizations by analyzing multiple case studies and interviewing key stakeholders. Combining qualitative insights with quantitative data, the research paints a holistic picture of the challenges and proposes a tailored framework for developing effective user guides that align with local organizational contexts.

The findings reveal that, without proper documentation, new-staff training stretches from three days to two weeks, training and technical support costs rise by 30 percent, average service downtime reaches five hours per incident, and data-entry error rates hover between 15 and 18 percent. The absence of standardized procedures also spawns redundant workflows and inconsistent file naming conventions, further compounding delays.

To address these issues, the study recommends a structured manual development process: clearly define

objectives and target audiences; map real-world workflows; organize content by core functions; integrate mixed media such as text, screenshots, flowcharts, and video; include key field-checklists; and establish version control and user-feedback loops for continuous improvement.

Organizations that adopted this approach reported significant gains: training time fell to three–five days, error rates dropped below three percent, technical support workload and downtime decreased by 60 percent, workflows became standardized across departments, data quality improved, and information security was strengthened.

The analysis points out that a good information system manual plays a crucial role in IT project success and sustainable management. Without one, there's a risk of strategic failure, leading to extra costs like time loss, errors, and legal trouble. Using a clear manual framework, with quality checks and room for improvement, can turn failures into successes, like reducing errors under 3% or cutting support workloads. Organizations should evaluate their current manuals and adopt this strategic approach to improve efficiency and ensure continuity and security in the long run.

This analysis concludes that developing an effective information system manual is a critical success factor for IT projects and a foundational requirement for sustainable organizational management in the digital era. The absence of such a manual represents a strategic failure that incurs measurable costs in lost time, increased error rates, and elevated legal risks.

By adopting a manual-development framework that emphasizes integrated multimedia, clearly defined quality-control checklists, and continuous improvement mechanisms, organizations can immediately transform operational shortcomings into quantifiable gains—for example, driving error rates below 3% and cutting support workloads by 60%.

Organizations should urgently audit their existing documentation and implement the strategic guidelines presented here to establish consistent work standards

across all departments. Investing in this knowledge-management effort guarantees that deployed information systems will deliver peak performance, ensure operational continuity, and maintain robust data security over the long term.

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