



# IMPLEMENTATION OF INFORMATION TECHNOLOGY IN FINANCIAL SYSTEM AT UNIVERSITY X

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**Abstract:** *The rapid development of technology requires organizations to keep up with innovation in order to achieve competitive advantages. University X is a university that is beginning to prepare for this wave of change by implementing a system in the financial transaction process. This study aims to analyze the application of information technology in the financial system at University X. The data collection approach used in this study is the interview method. It is a qualitative descriptive study that uses primary data. The respondents in this study were those who were directly involved in the transition process from manual work before 2011 to using the new IFS system in 2022, including the Deputy Chancellor for Finance, Head of Finance, Staff of the Salary Section of the Finance Section, Staff of the Bookkeeping Section of the Finance Section, and System Staff in the HR Section. The results of the analysis can be concluded: before 2011, a manual system was implemented, then from 2011 to 2016, an intranet system was implemented; from 2016 to 2018, the development was intranet system A; from 2019 to 2020, the K-system; and from 2022 until now, IFS. However, before 2019, the payroll division was still worked out manually using simple Excel and printed payslips. From 2019 to 2020, a new system was implemented that could provide notifications of expired allowances. The findings in this study can be used to assist universities dealing with technological changes, especially in the process of implementing a new financial system so that it can be accepted by its users and, moreover, the system is actually implemented successfully in an organization.*

**Keywords:** Technology Innovation, Accounting Information System.

## PRELIMINARY

The rapid development of the industry has brought us to the "Industrial Revolution 4.0," where changes related to technology have occurred. The existence of artificial *intelligence*, cloud computing, and big data inevitably changes existing work patterns. According to Mckinsey in Mekari (2019) the digitalization era has resulted in machines replacing 45% of all existing jobs. Both organizations and employees must be able to innovate to adapt to the changes that have occurred. One of the organizational steps in the innovative era of industrial revolution 4.0 is to carry out digital transformation, where organizations are starting to implement a new system to provide time and energy efficiency in the daily work of the organization.

The use of information technology simplifies employee activities, as tasks are no longer completed manually until they can be completed effectively and efficiently, but digital transformation also necessitates a combination of skills from employees as well as management to produce the best transformation. In opinion (Astuti

& Dharmadiaksa, 2014) the use of information technology makes technology increasingly accepted as something that must be utilized and becomes a necessity within the organization, so that digital technology is now an asset for organizations in the process of organizational transformation and development, which cannot be separated from the use of electronic data processing systems to collect, process, and report financial, operational, and functional information.

According to BPS data from 2016, as many as 40% of workers are from the millennial generation, or the equivalent of 62.5 million workers, with the largest number of 69 million workers being dominated by generation X, while the remaining 28.7 million workers are from the baby boomers' generation (Mekari, 2019). This generational divide is due to different mindsets and ways of working, as well as a lack of acceptance of new technologies related to everyday work. The millennial generation will tend to be open to implementing new systems and more flexible towards change because this is the nature of the millennial generation and because digital transformation is a means for them to improve their performance. Meanwhile, Generation X and Baby Boomers do not necessarily accept existing technological changes, but that does not mean that this generation is technologically illiterate.

Information technology is computer technology that is used to process and store information, and communication technology, that is used to transmit information within an organization (Galindo, 2002) Information technology facilitates the completion of work but also requires people who have competence in accordance with the technology used. Both private and public universities in Indonesia are undergoing digital transformations, with private universities adopting technology faster than public universities. Ivan Sangkereng, IT Director of Binus Jakarta, said in his interview at merdeka.com (Jamaludin, 2018) that the digital transformation boom has made several universities adopt the latest technology, and moreover, technology adoption tends to be minimal. Most of the universities that make changes are private, though there are some state universities that only carry out infrastructure transformations.

Digital transformation also occurs at University X, where tertiary institutions are expected to be able to respond quickly to any changes that occur in order to survive and remain able to compete with other tertiary institutions. Changes are absolutely necessary to be able to maintain quality and even develop into a better university. Many factors must be considered in this digital transformation, but none is more important than human resources' readiness to adapt to the changes that have occurred. X University is recognized as the best private university in Central Java by the Ministry of Education and Culture in 2019 and 2020, as well as a tertiary institution that is considered competent. University X must be able to keep up with the changes that are taking place. The 10th Chancellor in the university's 35th anniversary ceremony stated that University X is a "transforming university," which not only carries out the process of transforming institutions but also encourages the transformation of students and the entire academic community to be ready to adapt to the fourth industrial revolution.

X University is also a university that is starting to prepare itself for a wave of change. This change can be seen in the reflection of the work held in 2018 with the theme "Disruptive Innovation in Inspirational Transformation," where it is hoped that both lecturers and education staff have the enthusiasm to carry out transformations that can inspire various parties through innovations that disrupt the comfort zone alone. Quoted in Luhur (2018), this disruptive innovation can be in the form of academic administration services to students and alumni, library services, new student recruitment services, services to university partner companies, or other forms of services that can be carried out more easily, cost-effectively, and with less time and effort.

Kabuhung (2013) states that one of the important systems in an organization is an accounting information system because accounting information systems can collect and store data about activities carried out by the organization, transform that data into useful information for management, make plans, and provide control. to maintain assets. -organizational assets. One of the changes that occurred at University X was the change in accounting activities, which had been carried out manually before gradually switching to using the system. The implementation of the new system includes the use of a new program for recording every financial transaction, a budget rationalization process that requires each study program and unit to access the related system for the activity budget submission process, which focuses on the use of e-mail, including uploading complete supporting files, and accountability reports activity.

In practice, the system's application has not run optimally for a variety of reasons, one of which is the lack of full readiness of the human resources involved. Each individual has a different level of adaptation, even though with the new system everyone is required to quickly adapt to the new work pattern so that they can continue to work according to the track. On the one hand, superiors will tend to demand that every employee be able to use the new system. There is pressure from superiors and an inability to adapt; if not facilitated properly, it will actually

harm many parties. Other factors that can contribute to employees' unpreparedness to welcome the new system include a lack of compatibility between their educational backgrounds and the job description received, issues that arise when employees begin to believe that it is still better to work without keeping up with technological developments than not working at all, and even the belief that jobs that use technology should be delegated to the younger generation. Therefore, the purpose of this research is to analyze the process of implementing information technology in the financial system at University X.

## **THEORETICAL FRAMEWORK**

### **Kurt Lewin's Theory of Change**

Rosdiana (2022) defines the Lewin Model as a process of continually updating organizational direction, structure, and risk to serve changing external customers and ever-changing internal customers. Calder (2013) states that this model assumes planned change and emphasizes that whatever type of change is made (structure, system, or behavior), the root of the change is the human being himself. Lewin's model focuses on reducing resistance to change by referring to two forces in an organization, namely driving forces and restraining forces. Driving forces are the reasons people are motivated to change, whereas restraining forces represent the reasons people are hesitant to make changes. There are three stages in Kurt Lewin's planned change model, including (Mellita, 2020) :

1. *Unfreezing*

The initial step in the behavior change process is to dilute the existing situation, or status quo. The status quo is considered the prevailing state of balance. This process is needed to overcome pressure both individually and in groups.

2. *Change*

At this stage, it is important to move the targeted system towards a new equilibrium. The activities that can help in this process are convincing employees that the current status quo is not useful and motivating them to see problems from a new and different perspective, work together in new ways, have relevant information, have a relationship with one another based on mutual respect, and have a leader who supports these changes.

3. *Refreezing*

This stage needs to be carried out after the change has been implemented, with the aim of maintaining its sustainability. This stage is a process of integrating new values into the existing community. The goal is to stabilize a new balance resulting from change by balancing the driving and inhibiting factors of change.

In Winardi (2005), it is stated that this phase is designed to maintain the momentum of a change, which positively "freezes" the desired results. Some of the things done in this phase include strengthening the results, evaluating the results, and making constructive modifications.

### **Innovation**

Suryajaya (2015) stated that innovation is a change made by the company, both in terms of developing and creating something new, where the change is acceptable to the market and has a positive impact on the development of the company. (Ni'mawati & Zaqiah, 2020) revealed that innovation must be the result of original, creative, and unconventional thinking, where its application must be practical and contain elements of comfort and convenience. In fact, an innovation is an alternative solution to a problem.

### **Organizational Innovation Theory**

Organizational innovation theory according to (Damanpour, 1991) , is a new form of an idea of thought or action adopted in an organization, such as updating product types, using more sophisticated technology, simplifying production processes, and implementing systems that can improve organizational performance

Riyadi (2019) stated that there are three theories of organizational innovation, namely:

1. *Organizational Design Theory*

The theory focuses on how much influence the organizational structure, as the main actor in the sustainability of an innovation, has on the results of the innovation or when the innovation activity is carried out.

2. *Theory of Organizational Cognition and Learning*

This theory pays attention to basic things when organizations expand or adopt new ideas in order to solve existing problems in the organization. The emphasis of this theory is on how people in organizations carry out the learning process and the use of individual cognition in the innovation process. The main thing is that

innovation in an organization can only occur if there is a good learning and knowledge management process to analyze organizational capacity.

### 3. *Theory of Organizational Adaptation and Change*

The primary goal of this theory is to create a new organizational structure in order to adjust to shifts that occur within the organization as a result of changes such as the use of information technology and maintain harmony between employees and their work rhythms.

### **Organizational Innovation Process**

In implementing innovation, there are several processes that members of the organization must go through. Zaltman et al in Wijaya (2018) divide the process into two stages, namely:

1. Initiation stage
  - a. Steps of knowledge and awareness
 

The existence of performance gaps encourages organizations to implement new innovations. But it can also happen because organizational leaders are aware of new innovations and want to change existing conditions so they are not left behind.
  - b. Steps in the formation of attitudes towards innovation
 

At this stage, the attitude of members of the organization plays an important role in determining whether the innovation can be accepted. There are at least two things from the attitude dimension that can be generated by members of the organization toward innovation:

    - 1) An open attitude towards innovation is characterized by the willingness of members of the organization to consider innovation, a skeptical attitude (questioning innovation), and the belief that innovation can improve the ability of the organization to carry out its functions.
    - 2) Have a perception of the potential for innovation as indicated by observations showing an organization's ability to use innovation, having successfully used innovation in the past, commitment to working with innovation, and being prepared to face possible problems that may arise in the implementation process.
  - c. decision step
 

In this stage, an evaluation of the potential for implementing innovation is carried out. If the innovation is deemed acceptable and the organization is happy to accept it, then the innovation can be implemented within the organization. If, on the other hand, the unit does not like and consider the innovation, it will be rejected.
2. Implementation stage
  - a. In the first step of implementation, the organization tries to implement some of the innovation first instead of immediately applying it to all parts.
  - b. If the initial steps of implementation have been successful, the process of implementing new innovations can be continued while also maintaining its sustainability. At this stage, the members of the organization have understood and gained experience in implementing the innovation process.

### **Accounting information system**

An accounting information system is a tool that combines technology with information designed to assist in managing and controlling all organizational activities related to finance (Dita, 2016). According to Hidayat (2013), the definition of an accounting system is "a procedure used in conveying activity data, especially those related to financial information, to interested parties."

According to Maroep (2009), the purpose of the accounting system is to improve internal control, improve information, reduce administrative costs, and determine the implementation of the production process so that it is easier to carry out planning and prevent unhealthy company operations. The components contained in the accounting information system include (Romney & Steinbart in (Suhud, 2015) :

1. The people who operate and implement the system.
2. Procedures, both manual and automated, involved in collecting, processing, and storing data about organizational activities.
3. Data about the company's business processes.
4. *Software* used to process company data.

5. Information technology infrastructure, which includes computers, supporting equipment and network communication equipment (internet, WAN, LAN).

The elements in the accounting system include (chusing in (Kabuhung, 2013)

1. Human resources, classified as tools, data, supporting materials, human resources and funds.
2. Equipment, used to speed up data processing, increase the accuracy of calculations and tidiness of information forms.
3. Form, the principal element used to record all transactions that occur. Forms are often referred to as documents.
4. Records, consisting of Journals, namely accounting records that are first used to record, classify and summarize financial data and other data and ledgers consisting of accounts used to summarize financial data previously recorded in journals.
5. Procedures, steps to carry out a job, task or activity.
6. The report is the final result of the accounting information system

### Framework

The digital transformation changes the old work system. Inevitably, the organization also changed so as not to be left behind. The implementation of the new system is certainly intended for the advancement of various parties within the organization. Lewin's theory of change is used in this study to describe the stages in carrying out planned changes and continuous improvements to assist in long-term sustainability in organizational management. There are three stages in Kurt Lewin's change model, including *Unfreezing* , *Changing* , and *Refreezing* .

In this study, the technology used is an accounting information system closely related to the process of financial transactions. The existence of a new system is expected to be able to change the way manual work becomes more effective and efficient. To be able to achieve the goal of increasing organizational performance through the implementation of these new innovations, an initiation process is needed for introducing new programs to the implementation process where relevant workers can begin to apply existing programs so that the organization can evaluate the impact of implementing new innovations on employee performance and the impact on progress organization.

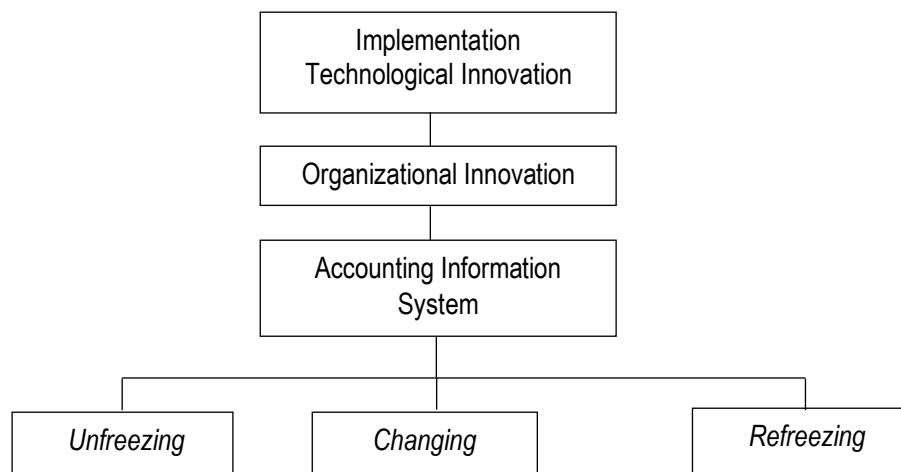


Figure 1. Research Framework

Source: Data processed, 2022

## RESEARCH METHODS

This research will be conducted at University X. As a university that holds the title of the best private university in Central Java, according to the Ministry of Education and Culture's version in 2019 and 2020, University X must be active in keeping up with the times, one of which is in the application of technology to make work easier. The existence of this digital transformation certainly has an impact on University X, both as an educational institution and as a person within it.

Participants are research subjects in qualitative research. Participants here designate the role of participants who are most active among the individuals studied. Participants gave answers that were purely from

their mouths and based on direct experience, not the result of engineering by researchers. The number of participants in this study is limited because it is not the number or representation that is determined, but the credibility and richness of information from the participants that are the main points (Semiawan, 2010). Participants in this study included the Deputy Chancellor for Finance, Head of Finance, salary staff in Finance, bookkeeping staff in Finance, and system staff in the HR Section, who were directly involved in the transition process; from the beginning, the work was done manually until now switching to the system.

This study uses primary data, namely, data directly obtained from respondents. Primary data was obtained from interviews with respondents who were directly involved in the transition process from manual work to using the new system. Participants in this study include:

Table 1. Research Participants

Participant	Reason for Selection
Deputy Chancellor for Finance	The vice chancellor for finance who directly supervises the finance bureau as a planner in changing programs that will be implemented directly by the financial administration bureau.
Head of finance	Apart from being directly involved in the process of implementing the new program, the head of the finance section was also actively involved in the planning process from the start
Payroll staff at the Finance Department of X University	The salary section is one that implements the new system, so that staff are directly involved in the process of implementing the new program so that they can provide information about the constraints faced, how the process of adjusting to the new program is.
Bookkeeping staff at the Finance Department of X University	The bookkeeping department also implements a new program, so that staff are also involved in the process of switching to a new system so that they can provide information regarding constraints and also the process of switching to a new system.
Payroll system staff at the HR Section of University X	Payroll system staff is the part that is responsible for creating a salary system that will be used by staff in the finance section so that they are considered capable of providing information related to the process of making the program, the constraints faced and the implementation process.

Source: Processed data, 2021

Data collection techniques in this study used interviews. The use of quotations from (Sudaryono, 2017) interviews is a method of data collection that is used to obtain information directly from the source. The interview that will be conducted in this study is an unstructured interview, where the interview is more informal, the subject is given the freedom to elaborate on the answers and express their views; the unstructured interview is also planned to suit the subject and the atmosphere at the time the interview is conducted (Sudaryono, 2017). Participants in this study are all parties directly involved in the use of the new system.

Data analysis in qualitative research, according to is carried out when data collection takes place, and after completing data collection within a certain period. Data analysis is carried out interactively and continuously until the analysis is complete and the data is considered credible. The activities in the data analysis of the Miles and Huberman model include:

1. Data reduction. Field notes are recorded carefully and in detail to then be categorised and look for patterns. The stages in the data reduction process include:
  - a. Coding, the process of analyzing and testing existing raw data by labeling it in the form of words, phrases or sentences (Junaid, 2016). The *coding* used in this study will focus on the use of a new system in finance and the role of employees in the implementation process.
  - b. Data interpretation, detailed explanation regarding the true meaning of research data.
2. Data presentation. The reduced data is presented in the form of narrative text. The researcher describes the data that has been classified to then draw conclusions and present it in a narrative form.
3. Drawing conclusions and verification, based on the data that has been obtained and verifying by looking for the meaning of the symptoms obtained during field research.

## DISCUSSION

### Cashier Section

University X is an educational institution that continues to move dynamically to keep up with the times and participate in the use of information systems in its work units. More specifically, this research will provide an overview of the development of information systems used by the Finance Section of University X, especially the cashier and payroll departments. The Finance Department has a cashier section whose job it is to disburse funds for both internal and external university activities. Prior to 2011, the beginning of the process of disbursing funds at the cashier's office was done by manually writing the disbursement information and the amount of funds disbursed on the cash-out proof sheet. Then the cashier will hand over a large amount of cash in accordance with what is stated in the receipt of cash out to the unit, bureau, or faculty that submitted it. At this time, all transactions are carried out in cash, there is no bank transfer process to send liquid funds. This is in accordance with what was conveyed by the bookkeeping department: *"In the past, it was very simple, it was still manual, handwritten on forms."*

Manual process the cashier has constraints on the length of time needed to process the data into the results needed. The absence of an integrated system also opens up opportunities for typographical errors in the disbursement process, resulting in invalid financial reports. Apart from having an impact on the financial statements, the cashier's department also has a high risk that there will be a discrepancy in the final balance due to an error at the start of writing the disbursement.

The intranet, which was developed in 2011, changed the recording pattern at the cashier's section, which was previously still recorded manually into the system data input and the output can be printed. This system assists the disbursement process at the cashier's office, where each application for funds via email from each unit, bureau, or faculty can be directly inputted into the realization of the budget and then printed as proof of cash out. The budget realization system is only integrated with cash transactions, and cashiers can only record university expenses, while bank transactions and university receipts will be inputted by the accounting department using the GL system. *"Oh, if the intranet is its own system, not a journal, it only enters data to find out the beginning and expenses of the transactions, which are journalized through a separate GL system, the problem is that it works twice and is not integrated."* (bookkeeping section)

In this intranet system, there are two menus that can be used by cashiers: the budget realization menu to input disbursement data and the daily cash reports menu. The process of disbursing funds at the cashier's desk begins when the cashier receives the physical file for filing an e-mail and includes the disposition of the Head of Finance to process it. The data that must be input includes the name of the unit, bureau, or faculty proposing the disbursement because the funds will be deducted directly from the budget of the proposing party. Next, the cashier must choose an account code that matches the type of activity to be disbursed. The account code has been provided in the system with a description of the account name, making it easier to search. In addition, the cashier must input the appropriate activity information attached to the physical evidence and also the nominal amount to be disbursed. From the input results, the output is a proof of cash out that can be printed, and then the recipient's signature is requested. This evidence consists of 3 sheets, where the last green sheet is given to the beneficiary of funds to be used as proof of withdrawal of funds, while the other 2 sheets are kept by the cashier as an attachment to the daily report.

In this phase, the process of disbursing funds is divided into two parts: cash received by the applicant or funds transferred through a bank. The cash disbursement process has been explained previously, where the party proposing the disbursement comes directly to the cashier's counter and receives the funds in cash. Meanwhile, the transfer stage that was carried out by the first cashier was to write manually on the bank deposit slip, then prepare the funds and come directly to the bank to make a cash deposit at the bank teller. The weakness of this bank transfer process is that it takes time to write each transaction one by one on the bank deposit slip, and if a writing error occurs, it must be repeated. The risks faced are also high when you have to carry large amounts of cash to the bank without any escort at all. Another component of the realization of the budget is the daily cash report.

Changes to the system, known as intranet A, began in 2016, with the ultimate goal of cashier transactions being to produce comprehensive financial reports between universities and foundations. This new system runs side by side with the previous intranet system. In this program, the cashier does journalism by inputting several things, including the date of the transaction, choosing the type of cash, which consists of four options: cash in, cash out, bank in, and bank out, then selecting the unit according to the new transaction and inputting debit and credit. *"The journal is inputted by the cashier when starting to make payment transactions in the debit column for expenses and*

*cash credit because expenses are taken in cash" (Bookkeeping department).* Journals that have been inputted by the cashier are checked first by the accounting department before posting. This intranet system A has been able to produce several reports, including journal reports, ledgers, and trial balances. However, the user thinks that the report generated by intranet A is not fully valid because it is not in accordance with the GL report used by the accounting department. The bookkeeping department revealed in the interview that *"from the cashier's data every week the accounting department checks for processing, if it is valid it is posted. we do from the posting results, we can see the results of journal reports, trial balances and ledger reports, but cannot be said to be valid because they are not in accordance with GL as a report reference."*

The two systems run together for several periods of time with the aim of being able to evaluate the output of the new system in advance and also to minimize the risk of wrong input in the new program. The obstacle that arises from running the two systems simultaneously is the amount of time and effort needed to input data into new programs so that they can be in line with the intranet system. On the one hand, *the* accounting section revealed that the response time of programmers was slow when they received reports related to constraints or input for the development of this system, so that the process of improving the intranet A was delayed. A system was inefficient because *"making the system accepted slowly by programmers, so it is slow in improving the system. "*

The implementation process did not show significant progress, and because the programmers at the time had to continue their studies, no one managed the system, the system was eventually discontinued, and the cashiers returned to using the intranet that had been developed as the main system for processing fund disbursements.

Among the various obstacles encountered, good communication must be implemented so that any problems that arise during the implementation process can be resolved as soon as possible. And it needs to be a concern for the leadership to anticipate conditions where programmers cannot fully assist, even though the implementation process is ongoing.

In the implementation of this system, the *refreezing stage* cannot be carried out, where the changes that occur cannot be fully accepted and become a new norm, so that they fail to become a new status quo to be used as a work standard for Mellita (2020) .

Furthermore, in 2019, a new system emerged that was planned to be used by cashiers to replace the intranet system, which was considered at the time to *be out of date* and to have many deficiencies. The vice chancellor for finance, who oversees the finance department, forms a task force in the process of implementing the K-system. The goal is for all data to be integrated so that the financial process is faster, provides valid results, and the output can be used as a basis for decision-making. Different from the intranet, which only needs to input costs for the disbursement process, in the K-system, the cashier must journalize each disbursement transaction, and data from this K-system can be directly withdrawn by the accounting department to be processed into financial reports. Another advantage of the K-system is that data access can be customized for each user, so that the data that can be accessed can be adjusted according to the needs and authority of each user.

The initial stage in this system is to enter the initial balance for each account, then input transactions for a certain period. Different from the intranet system, where the cashier can first input disbursement data but does not have to process transactions so that it immediately becomes proof of cash out at the same time, for the K-system, when there is a disbursement, the data must be input and processed to become proof of cash out at the same time. Such conditions make the cashier somewhat overwhelmed when the amount of disbursement is quite a lot because the data input process cannot be done earlier.

The task force and leadership are more closely monitoring the implementation of the K-system than the previous A intranet system." ***Then Mr. F offered a Ksystem which from start to finish could do it, but the problem was there were obstacles in the bureaucratic foundations so it couldn't be implemented either, even though if you think about it the Ksystem is almost 85% . "*** (Bookkeeping section)

The accounting department stated that the K-system implementation process at that time had reached almost 85%, which could be interpreted as meaning that this system, if it was continued, would be able to replace the old intranet system. The head of the finance section conveyed the same thing: that the K-system already has complete menus and can be used for disbursement at the cashier. ***"In the past, the Ksystem was actually complete, there was a balance report, but when it came in, the accounts have been corrected, adjusted, sorted, and everything has been fixed"*** .



Such conditions by Mellita (2020) are categorized as being at the stage of change, where the mindset of individual organizations at this stage has changed from the old mindset and is motivated and ready for the changes that are taking place.

However, there are several conditions that become obstacles in this transition period, one of which is time, because the intranet and the K-system are still running simultaneously, so it takes quite a long time for transaction data to be input according to the data on the intranet. The task force's and WA group's availability is a form of leadership support for monitoring the development of the K-system and also a means for users to consult when experiencing problems. The provision of student interns to assist in the data input process in the K-system is also carried out in an effort to speed up the data input process; however, there are still differences in the transaction period between universities and foundations, which slow down the posting process because the posting process for the K-system can only take three breaks. months between the university and the foundation.

Therefore, if there is a difference in the transaction period inputted by the cashier and the foundation that exceeds three months, the K-system program at the cashier cannot be continued. Another obstacle is the difference in the systems used by universities and foundations. Foundations that make financial reports still use the GL system, so the output from the K-system cannot be directly withdrawn by the foundation to be processed into financial reports. On the other hand, there are differences in account codes between the intranet and the K-system, so readjustments are needed to process transaction data from the cashier. Even though in the process of implementing the K-system the leadership provided full support and there was also user openness to the existence of a new system, at the time this research was carried out the K-system program was finally discontinued and replaced with a new system, namely IFS. The implementation of the K-system also did not reach the *refreezing stage* in system changes because these changes could not be applied.

In 2020, the intranet display menu will have several additional items, namely an email number column to make it easier to search for LPJ activities; previously, the cashier had to manually input the email number in the description column to be able to display the email number description. This is done for convenience in tracking transactions that require LPJ. With an email column that is directly connected to intranet data, the cashier only needs to choose the code according to the submission file. In addition, the remaining balance from each account connected to the disbursement appears. With this new look, it makes it easier for the finance department to process an application and also serves as a control tool so that an account balance doesn't go into negative, which was developed by programmers from the IT Department.

The new leadership period in 2021 presented a new program, namely IFS, which is now used by the cashier. In the new 2022 fiscal year, the implementation of IFS has started to be carried out in its entirety, not limited to the cashier but also usable by units and faculties. What distinguishes IFS from previous systems is that the input process for disbursement data is carried out by the submitting unit, bureau, or faculty. The user must input data in the form of an implementation date, type of disbursement, account code, and amount of funds disbursed, and attach supporting files. This submission went through several stages of checking, starting with the unit and faculty leaders, continuing to the data checking section in the finance section, and getting approval from the head of the finance section to go to the vice chancellor for finance. After all the data-checking processes, the application can be processed by the cashier. The existence of these checking stages makes it easier for each user to check which part of the email has been processed. In the early days of implementing the IFS system, there was still a lack of understanding by users in terms of entering data and choosing the right account. The absence of the same perception regarding the account code that must be used is felt not only by units or faculties applying for disbursement, but also by cashiers who are limited in processing account codes for each disbursement. It is necessary to evaluate the constraints experienced by each user so that the system can be well received in the future.

The ongoing implementation process then experienced several obstacles, one of which was when the users were stuck in a "waiting for each other" condition when there were imperfections in the system. On the one hand, each user still had to complete their main work, thus further slowing down the process of implementing the new salary system. However, if each obstacle is properly handled, and each person involved is able to maintain consistency in system implementation and is supported by competent human resources, an integrated system can be realized and has a positive impact on the development of the financial system at X University.

### Salary Section

The process of manual data processing is also experienced by the payroll department. Prior to 2019, the payroll system at University X used Excel to calculate salaries. Salaries received by employees are transferred through a payroll system in collaboration with the bank, but payslips by the payroll department still have to be printed manually one by one and then also distributed manually to every employee who comes every month to the finance department. The process from inputting data to printing payslips, which is still manual, certainly requires a lot of time and is also not *paperless* because the payslips for all University X employees must be printed, even though in the end some of the payslips were not collected. The accumulation of payslip files was also an effect of the manual payroll system at that time. This was conveyed also by the salary section, which said, "*In the past, the system was manual, so it was made in normal excel for salaries, there was no application in the system.*" Also stated: "*In the past, the manual payslips didn't use a formula, so the slips were made up to 400 boxes and then the second one was for delivery, if you used to come here, they would be printed one by one, one by one.*"

Start in 2019, the leadership at that time was also designing a system that could integrate employee data to make the payroll process easier. This salary system was developed by X University employees in the HR department. The process of developing this system requires coordination between the finance department as a user and the HR department as a programmer, who must be able to translate the needs of the payroll department into a system. "*I was asked by the rector (head of the university) to make a system, and it was almost 70% complete, but now it has been replaced. We coordinated with the current head of finance and Ms. N, who handled employee salaries, as well as Ms. S, who handled the salaries of lecturers and Jafa.*" (system section). The goal of developing a system in the payroll department is to integrate employee data from the HR Department into the salary department so that the output can be processed into monthly employee salaries. In the process of implementing it, the salary section stated, "*If the data that is included in payroll is only the employee's salary data and allowances, it helps if A's child support is more than 21 years old and is found out, so you have to make another letter of extension. So for Mr. R's system, when dividing the salary, it only helps with a reminder, for child support, you can check your ID card number, KK number for BPJS.*"

The payroll department is also experiencing difficulties with the large number of employee records entered with various changes, such as changes in benefits, grade increases, and so on. Because the work process is still manual, it is highly probable that *human error* will occur so that staffing data is not updated as it should. The tracking process when data changes occur will also be difficult for the payroll department to carry out. Due to employee data has not been fully inputted into the salary system and data has not been integrated between the HR and finance departments, the payroll system has not been able to run optimally. The system section stated the same thing "*If the data is finalized first, the finance bureau and the HR department are the problem, but they have also been concentrating on their separate responsibilities. It requires more energy because it operates twice.*" Meanwhile the salary section revealed that the system that existed at that time could only be used as a reminder regarding the validity period for employee benefits. So the salary part is facilitated by a reminder system, so that you can take immediate action before the end of the allowance period. Apart from some imperfections in the payroll system, the head of the finance section stated that, in fact, this system can be run if it continues to evaluate and improve and finds a way out for any problems faced by users. "*Actually, if the problem is fixed, it will already be paid.*"

Preparation for changes in the payroll section is still not optimal because the data needed for changes is still not integrated, even though the initial stage, or *refreezing* is the most important and critical stage in a dynamic and ever-changing business environment where, at this stage, the organization can minimize obstacles in internal organization and maximize the driving factors for change (Mellita, 2020). Systematically, it can be described in the chart, starting from the *initiation stage* to the *implementation stage*, in Figure 2 dan 3.

The challenge to continue to innovate does not only come to humans individually but also extends to the scope of the organization (Riyadi, 2019). This is also felt by University X, where digital transformation requires University X to continue to provide innovation so that it can continue to compete with other tertiary institutions. In practice, every change that occurs will have an impact on everyone involved in it. Changes to the system used by University X, if not used properly, will cause constraints for its users, but if the existing system can be maximized properly, it will make it easier to work. "*Because the system is being developed internally, the hope is that tomorrow there will be maintenance because it will be under the IT department. In the future, if there is development, it can be developed internally.*" (Vice Chancellor of Finance)

According to the vice chancellor for finance, with the new system currently managed internally by the university, the opportunity to be able to develop a wider system is very open so that the system can be adapted to changes in technology, regulations, and the environment. The use of the system in each line of work also has an impact on data integration, both employee data and financial data. This has a positive impact on the development of University X, where each user can easily access data according to their individual needs. Leaders can also use existing data as material for consideration in decision-making. An integrated system can be used as a basis for decision making as well as financial control for each unit or faculty. **“Further, the control system currently has deficiencies; for example, we never know how much cash remains in the unit because once it goes out, it is considered as an expense, eventhough later on the working unit reports the remaining financial reports balance, it still won’t record the remaining balance unless it’s returned, but when the money was in the study program it could not be recorded. With this system, it is hoped that we don’t just want to withdraw the remaining money, but we can also monitor the use of the remaining funds of the unit working in the study program. Hence, all the transaction are strongly recorded, the information best meets the needs, faster, and realtime.”** (Vice Chancellor of Finance).

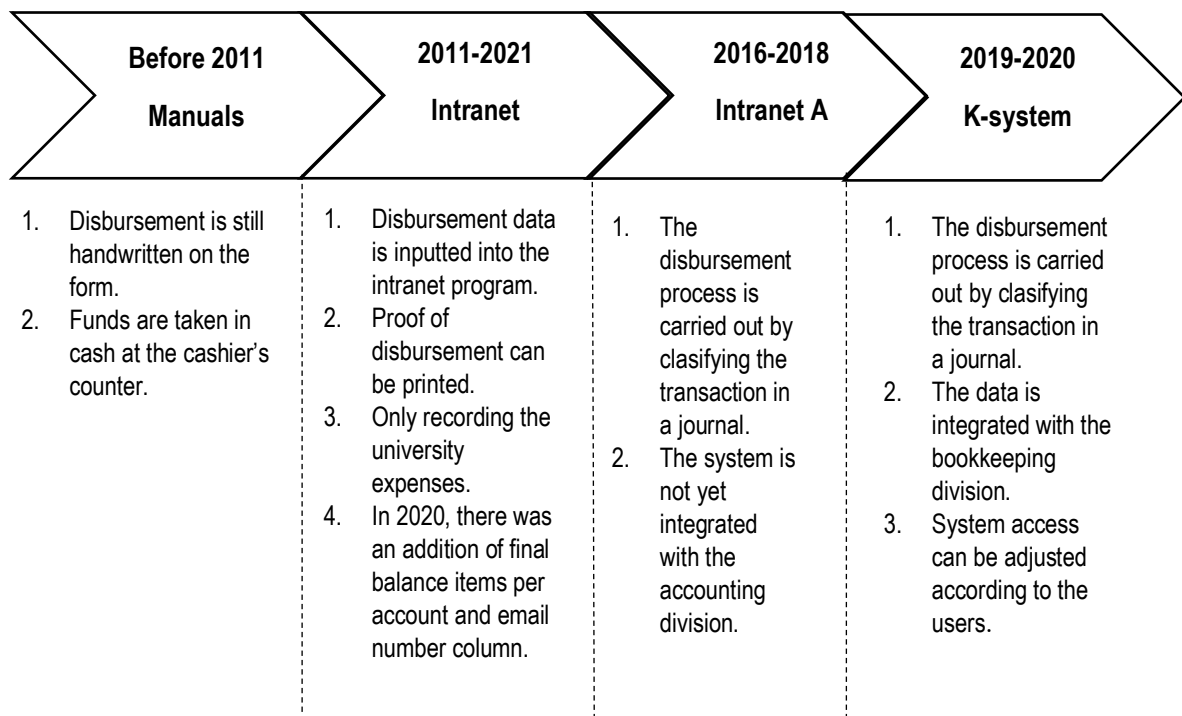


Figure 2. Cashier Section Financial System

Source: Data processed, 2022

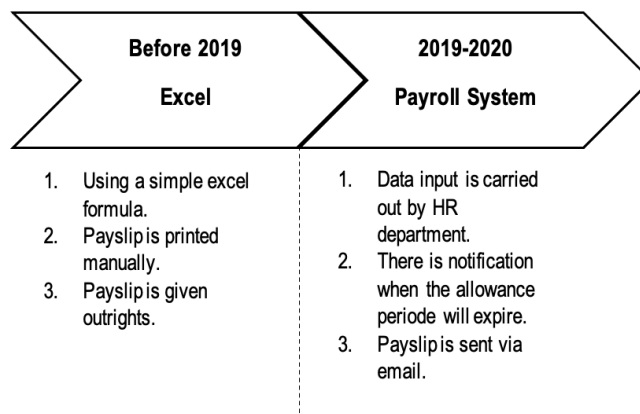


Figure 3. Payroll Financial System

Source: Data processed, 2022

This change will also have an impact on work patterns for dealing with problems and finding solutions. If this adaptation process is accompanied by intense training, it can further improve the user's work skills. The same thing was expressed by (Pranata, 2018) that both new and experienced employees need to attend training in order to be able to meet the ever-changing demands of work because it adapts to customer needs and company developments. The demands of work and the ever-changing environment inevitably make everyone keep moving and develop themselves and their skills. Organizations can see this as an opportunity to continue to make progress, both in terms of systems and human resources.

## CONCLUSION

Based on the results of the research and analysis that have been carried out, it is concluded that;

Cashier Section:

1. Prior to 2011, the beginning of the process of disbursing funds at the cashier's office was done by manually writing down the disbursement information and the amount of funds disbursed on the cash-out proof sheet.
2. In 2011, an intranet system was developed by changing the pattern of recording the cashier's section, which was originally still recorded manually, into system data input and printed output.
3. From 2016 to 2018, the development of the intranet system A was carried out, where the cashier did journalism to process disbursements. This system aims to produce comprehensive financial reports between universities and foundations. However, this system only ran for two (2) years before returning to using the intranet.
4. In 2019, a new system was implemented, namely the K-system, which was used by cashiers to replace the intranet system because it was not *up to date* and had deficiencies. so that all integrated data and financial processes are fast, and provide valid output results so that they can be used as a basic reference for decision-making. But it only lasted for two (2) years before returning to the intranet system.
5. In 2020, the intranet display menu was developed with several additional items, namely an email number column to make it easier to search for LPJ activities and the appearance of the remaining balance of each account connected to disbursement, developed by programmers from the IT department.
6. Then in 2022, the IFS system will be developed, which will be completely direct, not limited to the cashier, but can be used by units, faculties, and foundations.

Payroll Section:

1. Prior to 2019, payroll was processed using a simple Excel spreadsheet, and payslips were manually printed and given directly to employees.
2. In 2019, a salary system was developed that can provide notifications of expired benefits and send salary slips via email to each employee. This system only runs for one (1) year due to incomplete data availability to be processed in the salary system.

Meanwhile, in the process of system change, organizations can see the opportunities that exist between self-built systems that can be developed according to needs and adapted to changes in applicable regulations. In addition, with integrated data, it will be convenient to access data and can be used as a basis for decision making. The use of the system can also be used as a control tool, especially for disbursing funds.

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