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Jurnal Ilmiah Ilmu Terapan Universitas Jambi
Vol. 10 No. 2. April 2026, pp. 253-269 DOI. 10.22437/jiituj.v10i2.53984
Research Article

INFORMAL COORDINATION AS SHADOW WORKFLOW: REWORK AND PROCESS FRICTION IN A SMALL FIRM IT ACCESS

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Article Info
Recieved: Feb 7, 2026
Revised: Marc 10, 2026
Accepted: Apr 13, 2026
OnlineVersion: Apr, 30 2026

Abstract
In many small firms in Indonesia, internal IT services depend on two channels at once: WhatsApp-based coordination for quick informal requests and a formal system for official records. When these two do not connect well, operational rework keeps appearing at the same points. This study examines where that rework builds up and why it returns. Using a mixed-methods approach, 97 cases were reviewed over six months at a small firm in Jakarta, covering access requests, password resets, and escalation handoffs. Six rework indicators were applied across all records, and six informants were interviewed to explain the patterns. Results show the heaviest burden comes not from technical work but from three recurring points: requests re-entered after starting on WhatsApp (41%), cases stalling at approval despite being complete (48%), and cases passed between handlers more than once (37%). Two behavioral patterns explain why these problems persist. Some approvals move faster through a personally known contact than through the formal channel. Some users accept a partial fix without reopening the case to avoid social discomfort, leaving WhatsApp functioning as a shadow workflow that shapes how cases enter, move, and close. The novelty of this study is a three-layer model covering entry friction, processing friction, and closure distortion, built for organizations where informal and formal channels still coexist. Practically, small firms can improve their internal IT services by standardizing first contact, clarifying approval ownership, and confirming actual usability before closing a case, all using records they already have.

Keywords: Internal IT Services, Operational Rework, Shadow Workflow, Small Firm, Whatsapp-Based coordination

INTRODUCTION

In many small offices in Jakarta, daily work depends on digital access. Files are stored online, conversations move through chat groups, and reports sit in shared folders. When everything works, people barely notice it. Once access fails, the disruption is immediate. An account gets locked, a folder is still closed when someone needs to begin, or access from an old role is never removed. The system may still be running, but the work itself starts to slow down. Sometimes it stops for a while. Situations like this are common in small Indonesian companies that are trying to work in more digital ways. Technology can

help, but only when the process behind it is ready and people know how to use it properly (Anatan & Nur, 2023). Similar patterns appear in the wider use of digital tools in small firms as well (Wirdiyanti et al., 2023). Having digital tools is one thing. Being ready for the daily complications that come with them is something else.

The problem becomes easier to see in hybrid work. Some employees are in the office, others work from home or from somewhere else, yet they still depend on the same accounts and platforms. Because of that, one small access issue can affect coordination across locations very quickly (John et al., 2025; Zamani et al., 2025). In this kind of setup, people cannot always walk over and ask for help. No nearby coworker can fix temporary access on the spot. Requests have to move through a process, and once that process starts to drag, the effect is felt almost immediately (Chatterjee et al., 2023). Recent work on hybrid teams points in the same direction. Coordination becomes more fragile when work is spread across locations and depends more heavily on digital interaction (Handke et al., 2024; Lauring & Jonasson, 2025). Remote and teleworking arrangements can also add strain of their own, especially when technostress is already part of daily work (Ibrahim et al., 2025; Jaiswal et al., 2024; Toscano et al., 2025). In conditions like this, communication is not a side issue. It shapes whether people understand what is happening and whether work still feels manageable (Tkalac Verčič & Men, 2023).

At first glance, these may look like small problems. In practice, they are not small at all. They break focus. They waste time. They also wear people down when the same kind of trouble keeps returning. Over time, repeated small disruptions can leave people mentally tired (Bunjak et al., 2021; Pothuganti et al., 2025; Schmitt et al., 2021; Singh et al., 2022). This fits what the technostress literature has been showing for years. Repeated digital friction can reduce well-being and weaken job performance, even when each single incident looks minor on its own (Liu et al., 2025; Mansuroğlu & Smith, 2026; Pengfei et al., 2026; Sharma, 2024; Tarafdar et al., 2015; Yuan et al., 2025). The strain does not come only from difficult systems. It also comes from having to face the same issue again and again and spend effort on it each time (Dutta & Mishra, 2024; Jyoti et al., 2025). In remote or home-based work, that pressure can become heavier when problems recur without ever feeling fully resolved (Khalequzzaman et al., 2025; Khedhaouria et al., 2024). Work fatigue in work-from-home settings has also been linked to wider problems in work-life balance and organizational conditions, including in Indonesian contexts (Hongdiyanto et al., 2025; Ramadhina et al., 2026). What looks minor on the surface can become a steady burden when it keeps coming back in slightly different forms.

That was the pattern found in the small technology consulting firm in Jakarta studied here. The cases did not look dramatic. Locked accounts. Forgotten passwords. Project folders that were still not open. Role changes that had not been completed. Permissions for certain tools still waiting. None of these sounded like a major technical breakdown. The bigger issue was the way the handling process worked. Requests often began in WhatsApp. After that, they moved into a form or email. Then they sat there waiting for approval. Then they were passed to someone else. Users often had to explain the same thing more than once. Some cases looked finished in the records but came back a few days later because the solution had only fixed part of the problem. Research on access-based services such as single sign-on shows that the way permission information is communicated shapes how users understand the situation and what they do next (Morkonda et al., 2024). When users deal with a service issue, they do not judge only whether the technical problem is fixed. They also notice whether the process feels clear and fair (Ali et al., 2023). They respond to the whole experience, not just the technical outcome (Das et al., 2026). The quality of interaction during the resolution process also affects whether users believe the issue is really over (Yuan et al., 2025). This is why service recovery matters beyond formal closure. In digital service settings, what users experience after a problem occurs shapes whether they see the service as truly resolved or still unfinished (Yovian & Pratama, 2025). A problem may look technical on the surface, but much of the real difficulty sits in the process around it.

Three bodies of literature are relevant for understanding this problem, and each contributes a different piece of the picture. The first comes from internal IT service management. MacLean and Titah found that implementing formal IT service management strengthens coordination and accountability within the IT function, but also found that these benefits depend on formal processes being consistently followed by all parties (MacLean & Titah, 2023). That point is important here because, in the firm observed in this study, a formal process did exist, but requests did not always move through it in practice. Morkonda et al. showed that even in relatively structured services like single sign-on access, how permission information is communicated plays a decisive role in shaping what users do next (Morkonda et al., 2024). Together, these findings suggest that the problem in access management is not only whether

a formal process exists, but whether that process is where the actual work happens. The second body of literature concerns the digital work experience. Malik et al. showed that digital employee experience cannot be assessed by general satisfaction with technology alone, it is formed through the texture of daily interactions between people, processes, and tools (Malik et al., 2023). Grover and Chawla, and Porkodi et al. further argued that employee experience should be treated as a serious organizational concern because it shapes sustainable performance over time, not just immediate comfort (Grover & Chawla, 2025; Porkodi et al., 2024). That is why recurring access friction matters. It may look ordinary, but over time it shapes how work feels and how smoothly it moves. The third area is the literature on service support channels. Jäntti and Lindström found that in IT self-service settings, what matters most to users is not the first contact but what happens after, whether the process continues clearly or stalls (Jäntti & Lindström, 2026). Pillai et al. found that adoption of formal digital support tools breaks down when the tool adds a new coordination layer rather than reducing one (Pillai et al., 2024). Related work on AI-enabled tools in the workplace also shows that when new digital tools introduce unfamiliar demands without adequate preparation, they can generate stress rather than reduce it (Högemann et al., 2025). The friction, then, is often not inside the tool itself. It appears in the handover from one step to another, or in the gap between a quick informal interaction and the slower formal system that is supposed to record and complete the request.

Each of these three bodies of literature offers important insights, but none of them, alone or together, addresses the specific situation this study examines. The IT service management literature, as MacLean and Titah themselves noted, is most useful when formal processes are already consistently in place (MacLean & Titah, 2023). When informal and formal channels run side by side every day, as they do in the firm observed here, the formal record captures only part of what is actually happening, and the friction that matters most occurs between systems rather than inside any single one. The digital work experience literature explains what repeated friction does to people, but it tends to treat that friction as a given rather than tracing the process-level mechanisms that generate it repeatedly. Work on support channels and digital tools helps explain adoption, usability, and communication, but it typically starts from the moment a request enters the formal channel. Very little attention goes to what happens earlier, when a user has already explained the issue informally, assumes the case is moving, and yet the formal record still does not exist. None of these three areas specifically addresses small firms in the middle of digital transformation, where formal and informal channels are still mixed together and where the extra work that matters most occurs in the gap between them. That is the gap this study focuses on. In settings like this, recurring friction can become normal and easy to ignore, even though it keeps draining time and energy. Recent discussions of hybrid work, technostress, and remote work inequality all point to the same broader concern: everyday digital strain is often built quietly into routine work rather than appearing only in major failures (Khedhaouria et al., 2024; Lauring & Jonasson, 2025; Toscano et al., 2025).

This study addresses that gap directly. The specific problem examined here is the extra work that appears when one access issue moves through two paths at the same time: the informal path through WhatsApp and the formal path that requires proper records. The burden is not in the technical fix; it is in what happens at the points where those two paths must connect. To examine this clearly, the study focuses on three common case types: access requests, password resets or account recovery, and escalations or handoffs between handlers. Three research questions guide the analysis. RQ1 asks what forms of rework appear most often across these case types. RQ2 asks where delays, handoffs, and repeated explanation build up the most in the handling process. RQ3 asks how WhatsApp-based coordination helps explain why these patterns keep coming back, including cases that appear closed in the system even though users still cannot work normally. A single-case design was chosen because the goal is not to measure how widespread this problem is across many organizations, but to understand in detail how this kind of process friction unfolds within one real work setting, something that requires following each case from beginning to end across multiple data sources, which would not be practical if the study were spread across different firms. The significance of this study lies in what it offers to both researchers and practitioners. For researchers, it introduces a diagnostic model built specifically for the in-between condition where informal and formal channels coexist, rather than for firms where service management is already fully in place. For practitioners, particularly those managing internal IT access in small companies without dedicated IT departments or complex evaluation systems, the model provides a practical way to identify where process waste builds up and which areas to address first, using data they already have.

RESEARCH METHOD

This study uses a mixed-method approach with a descriptive focus. The purpose is not to test a hypothesis or build a predictive model. The purpose is to identify repeated patterns in the way internal access cases are handled and to understand why those patterns keep happening. The quantitative part shows how often certain things happen, how long they take, and where the handling process tends to slow down or go back in circles. The qualitative part helps explain what is behind those patterns. It shows what people actually do when a case stops moving and why the same kinds of situations keep appearing. Both kinds of data are read together so the numbers and the explanations support each other.

Research Design and Case Scope

This study was designed as a single-case study in a small technology consulting firm in Jakarta. The firm has 34 employees and uses a hybrid work arrangement, with some employees working from the office and others working remotely. A single-case design was chosen because the purpose of the study is not to show how common this problem is across many organizations. The purpose is to understand in detail how this kind of process problem unfolds in one real work setting. By focusing on one firm, the study could follow each case from beginning to end across different records such as emails, chat exchanges, approval logs, and spreadsheets, without forcing different organizations into one standard process that may not reflect how they actually work (Jäntti & Lindström, 2026; Kim et al., 2025).

Initial discussions with the company showed that internal access problems were not rare. They happened often enough to affect daily work directly. Common examples included locked accounts, forgotten passwords, project folders that could not yet be opened when work needed to start, role changes that had not been fully applied, and permissions for certain tools that were still waiting to be granted. What stood out was not mainly the technical difficulty. What stood out was the way the handling process kept going in circles. A request could begin in WhatsApp, then move to a form or email, then wait for approval, then move to another person, and then require the user to explain the same issue again from the beginning. Problems like these fall clearly within the scope of internal IT service management, where friction in access handling can still appear even when the process looks organized on the surface (MacLean & Titah, 2023; Morkonda et al., 2024).

Based on those early findings, the study focused on three types of cases: access requests, password resets or account recovery, and escalation paths or handoffs between handlers. These three were selected because they appeared most often, had the clearest effect on whether people could continue working, and showed the most visible signs of process breakdown. Cases outside these three types were not included. This means hardware failures, general network problems, external customer service issues, and general user experience complaints were excluded from the study.

Data Sources and Data Collection

The study used two sources of data: operational records and semi-structured interviews. These two sources were used together, not separately. The records showed what happened during case handling, while the interviews helped explain why it happened in that way. Operational records were collected from the company's internal systems over a continuous six-month period. These records included ticket logs, access request forms, internal emails, administrative spreadsheets, support chat logs that could still be traced, and approval records. In a small company, information like this is rarely stored in one place. Because of that, records from different sources had to be combined in order to rebuild the full path of each case. To keep that reconstruction consistent, each case was defined using three anchors: the person involved, the type of access being requested, and the time period of the incident. This means that records found in emails, WhatsApp, forms, or spreadsheets were treated as one case as long as they referred to the same access need. This approach is consistent with IT service research that traces the actual handling sequence rather than relying only on what people later report from memory (Jäntti & Lindström, 2026; Kim et al., 2025).

Semi-structured interviews were included because the records could show delay, repetition, and handoff, but could not fully explain what people were doing or thinking at the time. Six informants were interviewed. Two came from each of three role groups: administrators or IT support staff, supervisors or operational coordinators, and end users from different job functions. This mix was chosen so the process could be seen from more than one side. It included the person who receives and handles the request, the person who authorizes it, and the person who experiences the result. Informants were selected through

purposive sampling because they had direct and documented involvement in the access cases being studied. This fit the aim of the study. The purpose was not to produce a statistically representative sample of employees, but to speak with people who had firsthand experience of the situations under review.

The interviews followed a guide built around four topics. The first asked what the informant usually does when a case stops moving through the formal channel. The second explored whether a partial or temporary solution is seen as acceptable, and in what kind of situation. The third looked at whether knowing a certain person personally helps speed up approval and, if so, how that actually works in practice. The fourth asked what it means for a case to be truly finished, instead of simply no longer active in the system. These four topics came from patterns that had already appeared in the operational records, so the interviews could speak directly to the reasons behind those patterns. All names and any details that could identify the informants were removed before analysis.

Data Collection Instrument

Table 1 links each research question to the data needed to answer it, the source of that data, and the instrument used to collect it. The table 1 is included to make the connection between the research questions and the data collection process clear and easy to follow.

Table 1. Data collection instrument grid

Research Question	Data Needed	Source	Instrument
RQ1: What forms of rework appear most often?	Case frequency, resolution time, approval wait, handoffs, re-clarification, recurrence	Ticket logs, emails, spreadsheets, chat logs	Operational record review using six rework indicators (I01–I06)
RQ2: Where do delays and repeated effort accumulate most?	Sequence of handling steps traced across all cases	Same sources, reviewed case by case	Step-by-step tracing of the handling sequence from first contact to closure
RQ3: How does WhatsApp coordination explain these patterns?	What handlers and users actually do during case handling	Semi-structured interviews with six informants	Interview guide covering four topic areas

Measures and Rework Indicators

This study uses the term operational rework to describe unnecessary extra work that appears during the access handling process. This refers to work that would not be needed if a case moved cleanly from the first request to full resolution. It includes situations where a request has to be explained again, where a case moves from one channel to another and information is lost during the transfer, where approval takes a long time, where a case is passed between people more than once, or where a case appears to be finished but comes back again soon after. Looking at rework in this way matters because internal IT service quality is not only about whether the issue is eventually fixed. It is also about how much extra effort the process creates before the issue is really over (Jäntti & Lindström, 2026; MacLean & Titah, 2023).

Six indicators were used to examine the cases. The first indicator, I01, is the number of cases in each category. This shows which type of case appears most often. The second indicator, I02, is median completion time. Median was used instead of average because a few very long cases could distort the picture and make the usual experience look worse than it actually is. The third indicator, I03, is the share of total case time spent waiting for approval. Waiting time begins once the request already contains the basic information needed for processing: the name of the person asking for access, the type of access needed, and the reason for the request. It ends when approval is received and technical work can begin.

The fourth indicator, I04, is handoff count. This shows how many times the case moves to a different person or a different handling path. The fifth indicator, I05, is repeat clarification. This is counted when at least one follow-up is needed after the initial request because important context, access purpose, or technical detail is still missing. The sixth indicator, I06, is apparent closure recurrence. This is used when a case appears closed but returns within seven calendar days as a follow-up, a correction, or a new request about the same issue from the same person. Seven days was used as the cut-off because it is long

enough to separate same-day correction from a genuine return of the issue, but still short enough to connect the new request to an incomplete earlier resolution rather than to a completely separate event. These last two indicators matter because service quality is shaped not only by whether the technical action is completed, but also by whether the solution feels complete and clear from the user's side (Ali et al., 2023; Das et al., 2026). All six indicators are defined in Table 2.

Table 2. Operational definitions of rework indicators

Code	Indicators	What it captures	How it is identified	Main data source
I01	Number of cases	Total cases in each category	Count of cases grouped as access request, password reset/account recovery, or escalation/handoff	Ticket log, spreadsheet
I02	Median completion time	Typical duration of case handling	Time from recorded case start to recorded closure	Ticket log, email, spreadsheet
I03	Approval waiting share	Portion of case duration spent waiting for approval	Time from request being sufficiently complete to approval received, divided by total case duration	Approval record, email, chat trace
I04	Handoff count	Number of transfers during handling	Count of moves between persons or handling paths within the same case	Ticket log, chat trace, spreadsheet
I05	Repeat clarification	Additional clarification needed before main action	At least one follow-up request for missing context, purpose, or technical detail	Email, chat trace, form
I06	Apparent closure recurrence	Case appears closed but reappears shortly after	Related follow-up, correction, or linked new request within 7 calendar days after closure	Ticket log, email, chat trace

On data adequacy, the operational records covered all cases that matched the study scope during the six-month period in that firm. This was not a sample taken from a larger pool. It was the full set of relevant cases available in that time window. Because the study describes patterns rather than testing statistical relationships, statistical power in the usual sense is not the main concern here. What matters more is whether the cases are complete and varied enough to show stable patterns across the three case types and the six indicators. The same logic applies to the qualitative part. Six informants across three role groups were enough for the purpose of this study because the goal was to capture how the handling process looks from the side of the people who initiate, authorize, and experience access cases. That is what the research questions require.

Data Analysis and Integration

The analysis was carried out in three stages. In the first stage, all cases from the operational records were grouped into the three predefined categories. Each case was then reviewed using the six indicators described above. At this stage, the analysis used only counts, medians, and percentages. No significance testing was used because the study is not trying to establish whether a relationship between variables applies to a broader population. It is describing how often certain patterns appear and where they tend to concentrate in the handling process. For that purpose, descriptive numbers were sufficient.

In the second stage, the same records were reviewed again, but with a different focus. This time, attention was placed on the sequence of steps inside each case rather than on the indicator values alone. Each case was traced from the first recorded contact to closure. The aim was to see where delays appeared most often, where handoffs kept repeating, and where a case moved from an informal route back into a formal one. This stage produced process-level findings. These findings are different from the indicator results. They do not show average duration or average transfer count. They show where, in the actual flow of handling, cases most often ran into difficulty.

In the third stage, the interview transcripts were read in full and reviewed by topic. Relevant passages were grouped according to the four interview areas, then compared across informants to identify recurring themes. Those themes were not used simply to decorate the numbers. They were used to explain why the patterns in the records kept appearing. In the last step, the descriptive results from the records, the process tracing findings, and the interview themes were brought together into one integrated account of where extra work builds up in internal access handling and what keeps that pattern going.

RESULTS AND DISCUSSION

Organizational Profile and Case Volume

The company where this study was conducted is a small technology consulting firm in Jakarta with 34 employees. Some work from the office, others remotely. On any given day the team is running multiple projects at once: requirements analysis, solution configuration, testing, and post-implementation support. All of these depend on stable access to shared systems. Email, shared drives, project management tools, internal chat channels, document repositories, and several client-specific applications are all part of how work gets done. When access to any of these breaks down, the effect on daily work is immediate.

Over six months, 97 cases fell within the scope of this study: 43 access requests, 19 password resets or account recoveries, and 35 escalation paths or handoffs. The spread across three case types already tells something useful. Access problems here do not pile up in one spot. They appear in different forms across different parts of daily work, affecting multiple workflows at the same time. In hybrid teams where everyone depends on the same digital systems regardless of where they are sitting, even a single access disruption can ripple outward faster than it would in a fully in-person setting, because there is no one nearby to step in and sort it out on the spot (Handke et al., 2024). That context is important for reading what follows.

RQ1: What Forms of Rework Appear Most Often?

To answer RQ1, all 97 cases were reviewed using the six rework indicators defined in Table 2 of the Methods section (I01 through I06). Following the first analytical stage described in the Methods section, the analysis used counts, medians, and proportions. No significance testing was applied because the purpose of this study is to describe how often specific patterns occur and where they concentrate in the process, not to test whether a relationship between variables holds across a broader population. The results for each case category are presented in Table 3.

Table 3. Descriptive rework indicators by case category

Case category	I01 Cases	I02 Median Time	I03 Approval Share	I04 Handoff	I05 Re-clarification	I06 Recurrence
Access request	43	2.1 days	54%	1.4	35%	19%
Password reset / account recovery	19	0.7 day	11%	0.6	16%	11%
Escalation path / handoff	35	2.4 days	31%	2.3	43%	29%

Password resets and account recoveries showed the lightest rework profile across all six indicators. They closed at a median of 0.7 days, spent the smallest share of time waiting for approval at 11%, were handed off the least frequently at an average of 0.6 transfers per case, required the least repeat clarification at 16%, and returned after apparent closure at the lowest rate of 11%. Across all indicators, this category stayed well below the other two and provides a useful reference point for understanding how much additional friction the other case types carry.

Access requests were the most common case type at 43 cases and showed the sharpest delay at one specific point: approval. More than half of the total time these cases consumed, specifically 54%, was spent waiting for someone to approve a request that was already complete enough to process. The technical work itself was rarely the source of the delay. Waiting for a decision was where the time went.

Escalation paths and handoffs presented a more distributed pattern of difficulty. These cases did not slow at one point only. They struggled across multiple indicators at once. They took the longest to close at a median of 2.4 days, were transferred between handlers most frequently at a category average of 2.3 handoffs per case, required the most repeat clarification at 43% of cases, and returned after apparent closure at the highest rate of 29%. Each transfer created a point where earlier context could be lost, and the data show that it frequently was.

Across all three categories, the pattern is consistent. The bulk of the extra work does not sit in the technical task itself. It accumulates in the steps surrounding it: waiting for approval, re-explaining the same request to a different handler, and managing cases that return because the first resolution was recorded before the problem was genuinely resolved. This answers RQ1 directly.

RQ2: Where Do Delays and Repeated Effort Accumulate Most?

To answer RQ2, the handling sequence of all 97 cases was traced step by step from first contact to recorded closure, following the second analytical stage described in the Methods section. The figures in this section are different from those in Table 3. They show how many of the 97 cases encountered a problem at a specific point in the workflow, not how much time was spent or what the average transfer count was within a category.

Forty out of 97 cases, representing 41%, started through WhatsApp and then had to be re-entered into a form or email before formal handling could begin. Extra work appeared before any technical action had started. The user had already explained the problem and then was asked to explain it again through a different channel. Forty-seven out of 97 cases, representing 48%, were held up at the approval stage even though the request was already complete enough to process. This figure is distinct from I03 in Table 3. I03 measures how much of a case's total time was consumed by approval waiting: 54% for access requests, 31% for escalation cases, and 11% for password resets. The 48% here measures how many cases encountered that bottleneck at all. Nearly half of all cases submitted ended up waiting at approval not because information was missing from the request, but because approval itself did not come.

Thirty-six out of 97 cases, representing 37%, were passed to a different handler more than once. This differs from I04 in Table 3, which records the average number of transfers per case within each category. The 37% here shows how many cases went through repeated transfers at all. Every additional transfer created a moment where earlier context might not carry over and where the person requesting access might need to start explaining from the beginning again.

Reading these findings alongside Table 3 makes the picture sharper. The approval bottleneck is most severe for access requests, confirmed by the highest I03 value in that category and by the finding that nearly half of all 97 cases were delayed at that stage. The handoff and recurrence problems are most severe for escalation and handoff cases, where I04, I05, and I06 are all highest and where most of the repeated transfers occurred. This answers RQ2: delays and repeated effort accumulate most at three specific moments, namely when a request moves from the informal channel into the formal system, when a completed request sits waiting for a decision, and when a case changes hands between handlers.

RQ3: How Does WhatsApp Coordination Explain These Patterns?

To answer RQ3, the interview transcripts were analyzed thematically following the third analytical stage described in the Methods section. Recurring themes were identified within each of the four interview topic areas and compared across informants. Five of the six informants named WhatsApp as their primary channel for starting requests, checking status, or pushing approvals forward. WhatsApp was not a peripheral tool. For most people involved in access handling in this firm, it was where the work actually began.

The main qualitative finding is that WhatsApp functions as a parallel workflow running alongside the formal process. It moves quickly at the entry point. The difficulties appear later, at the places where what happened informally must connect to what the formal system requires. Two behavioral patterns emerged from the interview themes and explain what the quantitative data showed but could not fully account for on its own.

The first pattern is the trusted-mediator effect. Some approvals moved faster not because the formal process was functioning efficiently, but because the right person was involved through WhatsApp, someone personally known to the approver whose message received a prompt response. The same request, submitted through the same formal steps but without that personal connection, waited considerably

longer. Approval speed in this firm did not depend consistently on the completeness or urgency of the request. It depended partly on who was involved and how they were connected within the team.

The second pattern is harmony-preserving silent acceptance. Some users did not reopen a case even when their access had not been fully restored. They accepted a partial fix, continued working with what was available, and did not press the matter further. Raising the issue again felt socially uncomfortable: the person who helped had already made an effort, deadlines were pressing, and returning to something already marked as done felt like creating additional burden. Cases closed on paper while the underlying problem remained. Days later the same issue returned as a new request or an unexpected follow-up.

The trusted-mediator effect clarifies why approval waiting times varied so widely within the same case category even when the formal approval step was structurally the same for all cases. The harmony-preserving silent acceptance explains why I06 is highest for escalation and handoff cases, which involve the most interpersonal coordination and where cases are most likely to be treated as socially resolved before access is genuinely restored. This answers RQ3: WhatsApp-based coordination sustains these patterns by shaping entry, approval movement, and closure in ways that create gaps the formal process must then repeatedly address. Table 4 summarizes the qualitative themes.

Table 4. Qualitative themes linked to rework points

Rework point	What was observed	Illustrative evidence
Channel shift	The request starts in WhatsApp, but later still has to be entered again into a form or email before it can be processed formally	"It is usually faster to start through WhatsApp, but later we are still asked to submit it again through the formal channel."
Handoff	The case is passed to another person, but the earlier context does not move completely with it	"When it was passed to another person, I had to explain the same issue again from the beginning."
False closure	The case is marked as done even though the user is still working with a temporary or partial solution and does not reopen the issue right away	"It was already helped and could still run for now, so I left it first even though it was not fully solved yet."
Approval acceleration via WhatsApp	Approval tends to move faster when the request goes through a familiar internal person, not only through the formal process	"If it goes through that admin first, it usually moves faster than waiting for the formal line only."

When the answers to all three research questions are read together, they point to the same structural problem. WhatsApp-based coordination shapes how requests enter the system, how approvals move, and when a case is treated as finished. At each of those three moments, the gap between what happened informally and what the formal process requires generates work that would not otherwise exist. Table 5 maps the three main problem areas to their supporting evidence and to the corrective action each requires.

Table 5. Priority matrix based on integrated findings

Priority	Main issue	Supporting evidence	Minimum action
1	Requests start in WhatsApp and then have to be entered again into the formal channel	Channel shift appears in 41% of cases, and Table 3 shows that the same request often needs to be re-entered	Use one standard request format and make sure key details are provided from the start
2	Cases stop too long at the approval stage	I03 is highest in *access request*, 48% of cases are delayed at approval, and Table 3 shows that approval can move unevenly when it depends on certain people	Assign one clear approval owner and set a simple response time

Priority	Main issue	Supporting evidence	Minimum action
3	Context is lost when a case is passed on, and some cases look finished too early	I04, I05, and I06 are highest in *escalation path/handoff*, and Table 3 shows repeated explanation and temporary acceptance before the issue is raised again	Add a short-required summary before handoff and use a simple confirmation before closing the case

Figure 1 shows how these three problems connect. They are not independent issues. They all grow from the same gap between the informal WhatsApp channel and the formal system that must eventually process everything officially.

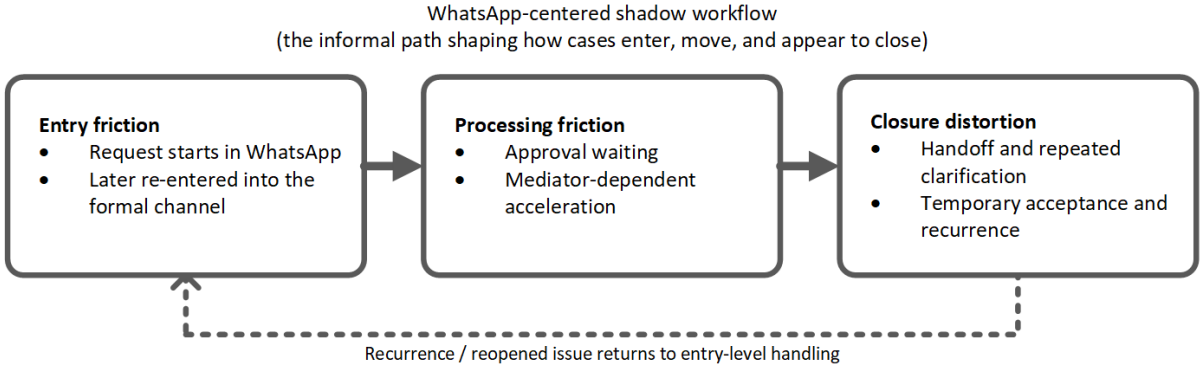

Figure 1. Three-layer structure of shadow-workflow-related rework

Table 6 translates this structure into a practical diagnostic that small companies can apply using operational records they already maintain.

Table 6. Lightweight Shadow Workflow Diagnostic for Small-Firm Access Management

Layer	What typically happens	Main evidence from this study	What to check first
Entry friction	A request starts in WhatsApp and later has to be entered again into the formal channel	The workflow mapping findings show 41% channel shift; Table 3 shows repeated re-entry of the same request	Check whether key request details are captured at first contact and whether the first channel already provides enough information for formal processing
Processing friction	A case slows down at approval or moves unevenly depending on informal mediation	Table 2 shows I03 is highest in access request; the workflow mapping findings show 48% of cases delayed at approval; Table 3 shows approval acceleration through familiar internal mediators	Check where approval actually stops, who is expected to approve, and whether movement depends too much on specific internal actors
Closure distortion	A case appears closed even though handling is still incomplete in practice	Table 2 shows I04, I05, and I06 are highest in escalation path/handoff; the workflow mapping findings show repeated transfers; Table 3 shows false closure and temporary acceptance before recurrence	Check whether closure is confirmed based on actual usability, whether handoff context is preserved, and whether cases reappear shortly after closure

How These Findings Relate to Existing Research

The central finding across all three research questions is that most of the extra work in internal IT access handling does not come from technical difficulty. It comes from the gaps between informal and formal handling: from what gets lost when a request moves from WhatsApp into a form, from how long a completed request waits for a decision, and from how readily a case gets treated as finished before it genuinely is.

This finding extends the IT service management literature in a specific direction. MacLean and Titah showed that formal IT service management strengthens coordination and accountability, but also found that these benefits depend on formal processes being consistently followed by all parties (MacLean & Titah, 2023). That condition was not met in the firm studied here, not because the formal process was poorly designed, but because informal coordination through WhatsApp was carrying so much of the actual work that the formal process was frequently bypassed without anyone consciously deciding to do so. What this study adds is a process-level account of exactly where that bypassing creates friction: at the moment a case must move from the informal channel to the formal system, at the approval stage, and at closure. That account extends what MacLean and Titah identified at the organizational level down to the specific workflow points where the benefits of formal IT service management fail to reach.

Research on workarounds in organizations found that informal practices which begin as quick fixes become embedded in daily routine over time and are genuinely difficult to detect through formal records alone (Bartelheimer et al., 2023). Research on informal tool adoption found that employees choose them not out of indifference to formal procedures but because those tools feel more immediately responsive to how work actually flows (De Vargas Pinto et al., 2023). Both findings describe what was observed directly in this study. A study specifically examining employees' motivational drivers for shadow IT use found that responsiveness, autonomy, and the perceived slowness of the formal IT function are the dominant reasons people turn to informal tools, rather than active resistance to official processes (Nguyen, 2024). This is precisely the dynamic this study observed: WhatsApp was used because it felt faster and more direct, not because the formal process was absent. Recent practitioner-oriented research in this area confirms that tools like WhatsApp are now routinely classified as shadow IT within organizations and that the governance gap they create grows directly from the difference between how quickly information moves informally and how reliably it is captured formally (Haag & Eckhardt, 2024). Together, these four findings from different angles of the same phenomenon all point to the same mechanism at work in the firm studied here.

The consequences of this kind of recurring friction extend beyond immediate handling delays. Tarafdar et al. established that recurring technology-related friction produces measurable negative effects on job performance, not only on satisfaction or comfort (Tarafdar et al., 2015). Yuan et al. in a meta-analysis of 58 empirical studies, confirmed that specific recurring digital stressors consistently reduce performance across different organizational contexts (Yuan et al., 2025). Studies specifically focused on instant messaging in the workplace add a more precise layer to this. Hurbean et al. found that IM use affects performance not primarily through direct interruption but through a less visible mechanism: it increases the perceived technological complexity of daily work, and this complexity is what ultimately drives performance strain (Hurbean et al., 2025). This is relevant to the pattern found here, because the friction in this firm was not that WhatsApp interrupted work directly, it was that managing the gap between what WhatsApp captured and what the formal system needed added a layer of coordination complexity that grew with every handoff and every channel shift. Tarofder et al. further showed that when IM is used as a coordination tool, its effect on team performance is mediated by the quality of knowledge creation and communication it supports, not simply by how often it is used or how fast messages arrive (Tarofder et al., 2023).

This finding directly explains why WhatsApp's speed at the entry point did not prevent rework downstream: the speed advantage did not translate into quality of documented context, and it was the context gap that produced the repeat clarification, the repeated handoffs, and the apparent closures that came back. The patterns documented in this study, including repeated re-entry of the same information, approval delays shaped by personal connections rather than request completeness, and cases returned because they were closed before the problem was resolved, represent precisely the kind of recurring friction that this body of research connects to performance strain over time. In small Indonesian firms specifically, where process readiness and people's capacity to navigate digital tools remain central to whether technology supports or complicates daily work, these effects carry particular relevance (Anatan & Nur, 2023; Sumarsono et al., 2026).

In the service quality literature, prior research established that users judge IT service quality not only by whether the technical problem is fixed but by how clear and complete the handling process feels throughout (Ali et al., 2023; Das et al., 2026; Jäntti & Lindström, 2026). A study on digital public services in Indonesia found that perceived service completeness depends heavily on the quality of the process experience, not only on the technical outcome delivered (Yovian & Pratama, 2025). The I05 and I06 values in this study reflect precisely that gap: cases technically addressed but not fully resolved from the

user's perspective, generating follow-up requests that the formal record did not connect to the original case.

Practical Implications

The findings carry specific practical value for three groups: IT support staff, operational managers, and business owners building more organized digital operations. For IT support staff, the diagnostic in Table 6 offers a structured way to use existing operational records, including ticket logs, chat logs, approval records, and spreadsheets, to identify which transition points generate the most repeated work. The central questions are grounded in data that most small firms already produce: where do cases first get formally recorded, how long do they sit at the approval stage, and how often do cases return after being marked done? Analyzing these questions with existing records identifies where process improvement will have the most operational impact. Research on employee experience management finds that reducing recurring operational friction is one of the most direct routes to improving sustainable performance and the quality of daily work (Grover & Chawla, 2025; Jäntti & Lindström, 2026; MacLean & Titah, 2023; Porkodi et al., 2024). In access handling specifically, that means addressing the repeated effort that builds up around approvals and handoffs alongside the technical resolution itself (Koch & Denner, 2022; MacLean & Titah, 2023).

For operational managers, the trusted-mediator effect carries a specific operational implication. When some requests move faster than others not because they are more urgent or better prepared but because of who submits them or who facilitates them through personal channels, the process is not functioning equitably. Cases that move slowly may not be less important. They may simply lack informal support behind them. Assigning a clear approval owner with an expected response time for each case type addresses this directly, reduces dependence on personal relationships, and makes handling more predictable and consistent for everyone involved (Jyoti et al., 2025; Khalequzzaman et al., 2025; Pengfei et al., 2026).

For business owners and leaders, the harmony-preserving silent acceptance pattern reveals a gap that formal records consistently obscure. When users do not reopen a case even though their access has not been fully restored, the recorded closure rate presents a more favorable picture than the actual resolution rate. Tracking how many cases are marked closed is not equivalent to tracking how many problems are genuinely resolved. A structured confirmation step, asking the user whether they can work normally before a case is formally closed, shifts the operational standard from administrative completion to verified resolution and improves the reliability of what the records actually report (Ali et al., 2023; Das et al., 2026; Yovian & Pratama, 2025).

More broadly, the three-layer model and Table 6 give small companies a structured entry point for improving internal access handling before a comprehensive formal service management framework is in place. The model was built for precisely the conditions that characterize many small Indonesian firms today: informal and formal channels operating in parallel, processes still being developed, and operational data already present but not yet used to show where recurring effort is being lost (Pengfei et al., 2026; Thilagavathy, 2025).

Novelty of This Study

This study makes two distinct contributions to existing knowledge, one conceptual and one methodological, neither of which has been directly addressed in previous work on IT service management or informal workplace coordination. The conceptual contribution is the three-layer model comprising entry friction, processing friction, and closure distortion. Existing IT service management frameworks are designed for organizations where formal processes are already consistently in use.

They identify rework through formal records and measure service quality against formal standards. This model was developed for a fundamentally different condition: one where informal and formal channels coexist daily, where the gap between them is the primary source of recurring extra work, and where that extra work does not appear in any single system's data because it takes place between systems. No prior study has proposed a diagnostic framework specifically designed for this in-between condition, where the informal channel is not a deviation from the process but an operating reality that shapes every stage of it (Kellogg et al., 2020; Klotz et al., 2022; Leonardi, 2021).

The behavioral contribution is the identification and naming of two specific social mechanisms, the trusted-mediator effect and harmony-preserving silent acceptance, that explain how the social dynamics of small teams sustain process friction in ways that operational data alone cannot reveal. Prior

literature has documented that informal communication affects coordination speed (Koch & Denner, 2022) and that users sometimes disengage from formal complaint processes (Ali et al., 2023). This study connects those separate observations to a specific process context: access handling in a small firm, where both mechanisms operate not as exceptions but as regular features of how cases move and close. Naming them precisely makes them detectable and therefore addressable in practice. To the best of the authors' knowledge, this study is also among the first to trace the complete handling sequence of internal IT access cases in a small Indonesian technology firm by combining operational record analysis and thematic interview analysis across the same set of cases, producing findings that are simultaneously traceable to specific data points and explainable through the perspectives of the people involved.

Limitations and Recommendations for Future Research

Three boundaries of this study shape how the findings should be read and indicate where further investigation is most productive.The findings come from one firm, three case types, and six months of observation. The patterns are internally consistent and traceable to specific mechanisms, but they reflect one organizational context. Future studies should test the three-layer model in other small firms across different Indonesian cities, industries, and coordination tools, including firms that rely on Telegram, Line, or Microsoft Teams as their primary informal channel, to assess whether the same friction points appear and whether the diagnostic categories hold across different settings.

The case scope was limited to access-related requests. Hardware failures, network problems, and other IT support categories were not included. Future research examining a wider range of request types would help determine whether entry friction, processing friction, and closure distortion appear beyond access handling or whether they are specific to categories that require formal approval as part of their resolution process. The qualitative component involved six informants across three role groups, which was sufficient to explain the patterns in the operational data and identify the two behavioral mechanisms. Future studies with larger and more varied informant groups, particularly in firms with larger IT teams, more structured approval processes, or longer histories of managed service operations, would help determine whether the trusted-mediator effect and harmony-preserving silent acceptance persist as formal processes become more consistently applied or whether they diminish as service management practices mature.

CONCLUSION

This study shows that recurring extra work in internal access management does not primarily arise from technical tasks, but from the processes surrounding them, particularly at three key transition points: entry, approval, and closure. The analysis of 97 cases over six months reveals that password resets and account recoveries are resolved quickly with minimal issues, while access requests—although the most common—are heavily delayed at the approval stage, where 54% of total handling time is spent waiting despite requests being ready to process. Escalation and handoff cases are the most complex, involving longer completion times, repeated clarifications, and frequent recurrence. Across all categories, inefficiencies consistently emerge when cases move between stages, especially when initial requests come through WhatsApp and must later be re-entered into formal systems (41% of cases), when approvals are delayed (48%), and when cases are transferred multiple times (37%), leading to loss of context and redundant work. These patterns persist largely due to WhatsApp-based coordination, which influences how requests are initiated, approved, and closed, often shaped by social dynamics such as the trusted-mediator effect and harmony-preserving silent acceptance. Overall, the findings indicate that the root cause of inefficiency lies in the gap between informal communication channels and formal processes, which creates friction at entry, processing, and closure stages—forming the basis of the study's three-layer model. Based on this, it is recommended that small firms, particularly in Indonesia, do not need to eliminate informal tools but instead focus on three practical improvements: ensuring complete information is captured at the initial request regardless of channel, standardizing and clarifying approval responsibilities, and verifying that access is fully functional before closing cases. These targeted adjustments directly address the underlying causes of process inefficiency and can be implemented using existing organizational resources without requiring complex system overhauls.

ACKNOWLEDGMENTS

We would like to express our deepest gratitude to those who have helped and respondents so that this research can be completed well.

AUTHOR CONTRIBUTIONS

Conceptualization by M.M; Methodology by M.M; Software by M.M; Validation by M.M; Formal Analysis by M.M and T.A.M; Investigation by M.M and T.A.M; Writing - Original Draft Preparation by M.M and T.A.M; Writing - Review & Editing by M.M and T.A.M.

CONFLICTS OF INTEREST

The author(s) declare no conflict of interest.

USE OF ARTIFICIAL INTELLIGENCE (AI)-ASSISTED TECHNOLOGY

The authors declare that no artificial intelligence (AI) tools were used in the generation, analysis, or writing of this manuscript. All aspects of the research, including data collection, interpretation, and manuscript preparation, were carried out entirely by the authors without the assistance of AI-based technologies.

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