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Identifying Communication Flow in the Development of Apartment Project X to Enhance Time Performance

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Abstract: This research aims to develop a risk-based communication flow in apartment projects with a focus on improving time performance. The methods employed include surveys and case studies, with data collected through the creation and distribution of questionnaires to experts, along with an analysis of results conducted by Company X. The findings indicate that the communication flow implemented at PT. X has proven to be valid and effective. However, several factors hinder the smooth communication flow, such as inadequate planning and scheduling of work, insufficient communication due to mismatched methods and technologies, inefficient information distribution systems, inadequate project budget planning, lack of resources, incomplete scheduling of time and resources, inappropriate listening and speaking skills, lack of empathy among parties, inadequate facilities and infrastructure, emotional conditions, and lack of mastery of communication techniques. Based on these findings, several actions are recommended to enhance communication flow, including improving planning and scheduling of work, using communication methods and technologies appropriate to field conditions, improving information distribution systems, ensuring project budget planning availability, increasing resources, creating comprehensive time and resource planning, enhancing listening and speaking skills, improving empathy among parties, upgrading facilities and infrastructure, controlling emotional conditions, and enhancing mastery of communication techniques. By implementing these recommendations, it is hoped that the communication flow in apartment projects can operate more effectively and efficiently, thereby improving overall project time performance.

Keyword: Communication Flow, Apartment Projects, Time Performance

INTRODUCTION

The development of apartment projects in Indonesia, especially in major cities, is increasingly rampant. The rise in the number of apartment construction projects is influenced by various factors, including per capita income, population growth, economic expansion, and inflation rates (Warsilah, 2015). Major cities in Indonesia are classified based on their high population density. For instance, one of the commercial properties experiencing significant

development in its construction is Jakarta. According to consumers, the availability of vertical housing, in the form of apartments, is realized primarily for middle to upper-middle economic groups, offering facilities distinct from regular flats. The construction of apartments targets meeting the housing needs of individuals with middle to upper-middle incomes, as well as aims to enhance land utility and improve densely populated housing quality while maintaining affordability in property prices.

Sales of strata apartments are predicted to remain stagnant in anticipation of the spread of new variants of Covid-19. Similarly, the selling prices are expected to stay around Rp 35 million per square meter. Moreover, this sector has to compete with second-hand unit prices (Maharani, 2022). However, according to Nurpita and Wardhani (2021), the Growth of Apartment Price Index in 2019-2020 is depicted through the following table:

Table 1. Growth of Apartment Price Index in 2019-2020

No	Description	2019	2020
1	DKI Jakarta	0%	11,10%
2	Bandung	-13,30%	-34,60%
3	Surabaya	11,76%	13,16%
4	BODEBEK (Bogor-Depok-Bekasi)	0%	0%

Source: Bank Indonesia (2020)

The growth of the commercial apartment property price index in 2019 leading up to 2020, based on apartment price index records, showed varying conditions in each major city. In DKI Jakarta, there was an increase from 0% to 11.1%, while in Surabaya, there was also an increase from 11.76% to 13.16%. Conversely, Bandung experienced a decrease from 13.3% to -34.6%, and BODEBEK experienced stagnant decline. This was due to the Large-Scale Social Restrictions (PSBB) implemented for several months, leading to a decrease in demand across all property sub-sectors, especially commercial properties such as apartments.

The separation based on this sector turned out to be quite distinct, especially due to time constraints and the multitude of development needs, meaning that physical construction was initiated before comprehensive plans were completed (Iriane, 2011). Although it increased by a modest 0.45%, it served as the beginning of recovery in the rental apartment sector in 2022. This question aligns with the remarks of Senior Research Advisor Knight Frank Indonesia Syarifah Syaukat in Jakarta Property Highlight Semester I 2022, on Thursday (11/2/2022) (Putri, 2019). On the other hand, areas other than Jakarta or the surrounding BODEBEK region, Anton mentioned that the growth of development was also accelerating. Up to the third quarter, sales figures could reach 6,800 units. According to him, referring to the overall supply of 97,200 units in the BODEBEK area, most of them are still in the development stage. This is due to the increasing demand in empty areas outside Jakarta, which are extensive compared to the Jakarta area itself.

The construction of apartment projects often encounters challenges that lead to delays. These delays can be attributed to scheduling issues, such as delays in groundworks compared to the planned schedule, due to increased rainfall, which poses difficulties for site managers in prioritizing tasks. Furthermore, scheduling constraints result in deviations in both time and financing, indicating a misalignment between planned and actual workloads. Reports have been traditionally prepared based solely on planned schedules and actual workloads (Yanto, 2019). Based on these factors, it is imperative to implement time and cost-saving measures. Considering the significant benefits of implementing construction management systems and improving work quality, it is essential to implement construction management systems during the construction phase of the construction industry. This becomes even more critical given the limited funding available for construction projects in Indonesia, emphasizing the importance of achieving increased construction volumes with the same level of funding.

Given the described issues, solutions are needed to address project execution challenges. Implementing project scheduling is necessary to prioritize tasks that can be deferred and those that cannot. Additionally, evaluating project time and financing discrepancies is essential. Identifying project risks from the outset and assessing the level of risk for each present risk is crucial. To address communication issues during project execution, implementing communication management is necessary to plan stakeholder needs and reduce communication problems during project execution. Thus, those involved must possess strong management skills in project development.

This research is motivated by the influence of communication management with stakeholders, which commonly occurs due to the lack of participation from involved parties. The relationship between the project owner and contractor in a construction project plays a crucial role in its success. Sometimes, project issues stem from differences in mindset between the project owner and contractor, leading to claims and disputes. Project Communication Management becomes a discipline that regulates harmonious communication among parties involved in construction, including contractors and project owners, to prevent issues from arising.

Various problems, whether technical or non-technical, can be resolved through effective communication, thus quickly resolving disputes. Unfortunately, communication barriers in construction projects persist, impacting project success negatively (Harsian, 2021). This is due to ongoing obstacles in communication within construction projects, prompting this research to identify the causes hindering effective communication in government construction projects, assess the necessity level, and develop a measurement model for factors hindering effective communication in construction projects.

Communication in construction projects is crucial as they involve various professions such as engineers, material providers, project managers, and various other multidisciplinary teams that need to coordinate effectively. Therefore, communication management planning is essential to ensure smooth coordination among parties. However, there has been limited research on the extent to which communication management planning in construction projects is implemented. This study aims to measure the extent of communication management planning implementation in Jakarta and its influence on construction project performance. In the construction of Apartment X, one can observe an example where project implementation does not align with the planned schedule.

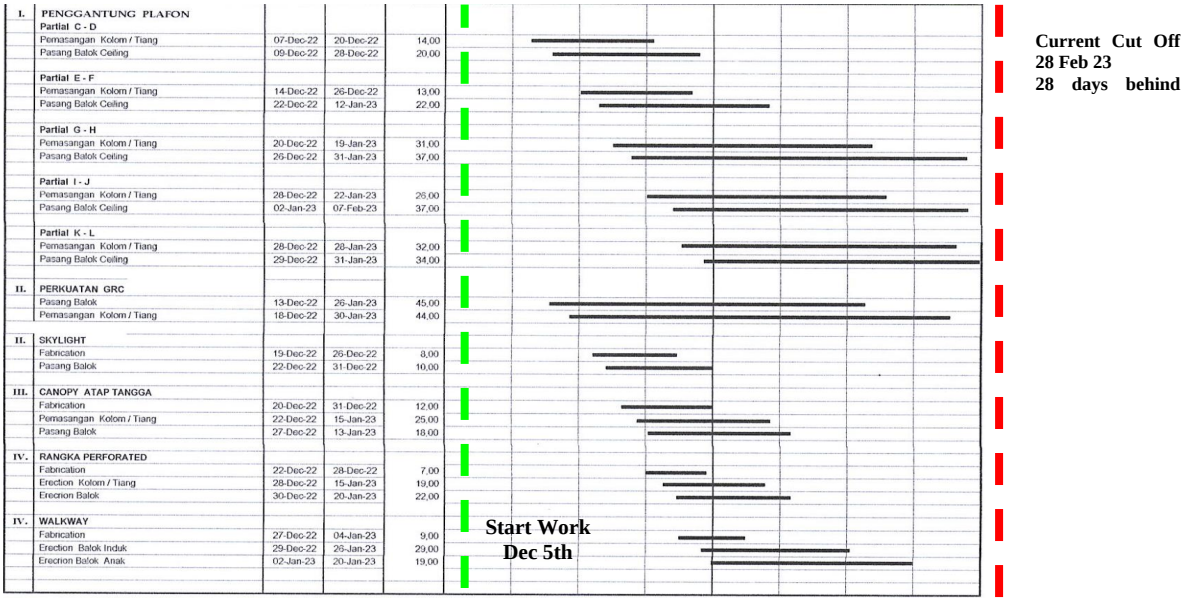
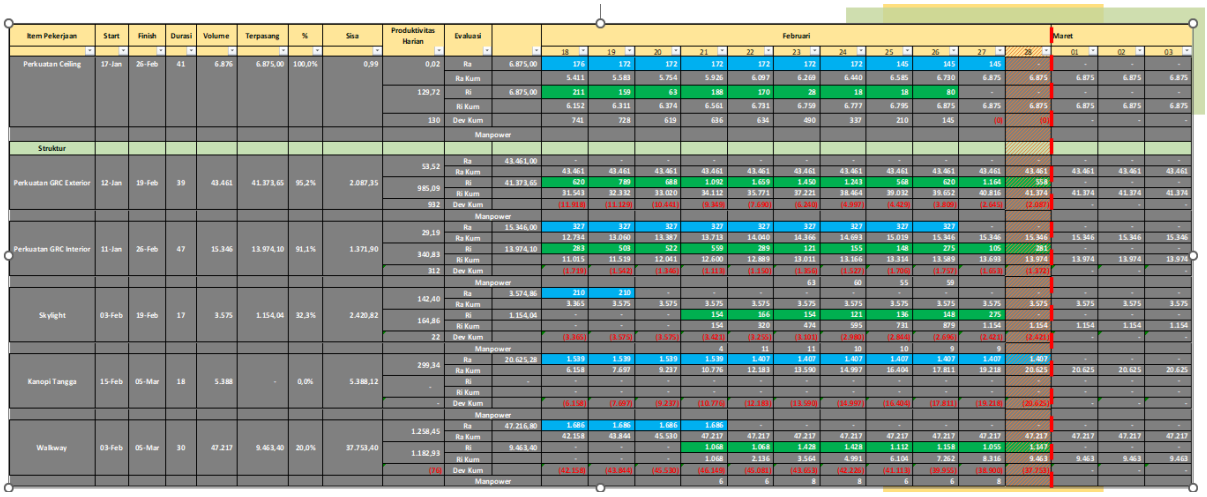


Figure 1. Planned Schedule

In the project, the steel structure was planned to start work on December 5, 2022, with a cutoff until February 28, 2023, resulting in a promised time estimate of 86 calendar days. However, the project was completed in 114 days, indicating a delay of 28 days. Based on this issue, a revised schedule has been provided by Wika Gedung as shown in the following Figure 2.



Item Pekerjaan	Start	Finish	Durasi	Volume	Terpasang	%	Sisa	Produktivitas Harian	Evaluasi		Februari 18	19	20	21	22	23	24	25	26	27	28	Maret 01	02	03
Perkuatan Ceiling	17-Jan	26-Feb	41	6.875	6.875,00	100,0%	0,99	0,02	Ra	6.875,00	176	172	172	172	172	172	172	145	145	145	-	-	-	-
									Ra Kum		5.411	5.583	5.754	5.926	6.097	6.269	6.440	6.585	6.730	6.875	6.875	6.875	6.875	6.875
								129,72	Ri	6.875,00	211	159	63	188	170	28	18	18	80	-	-	-	-	-
									Ri Kum		6.152	6.311	6.374	6.561	6.731	6.759	6.777	6.795	6.875	6.875	6.875	6.875	6.875	6.875
								130	Dev Kum		741	728	619	636	634	490	337	210	145	(0)	(0)	-	-	-
									Manpower															
Struktur																								
Perkuatan GRC Exterior	12-Jan	19-Feb	39	43.461	41.373,65	95,2%	2.087,35	53,52	Ra	43.461,00	-	-	-	-	-	-	-	-	-	-	-	-	-	-
									Ra Kum		43.461	43.461	43.461	43.461	43.461	43.461	43.461	43.461	43.461	43.461	43.461	43.461	43.461	43.461
								985,09	Ri	41.373,65	620	789	688	1.092	1.659	1.450	1.243	568	620	1.164	559	-	-	-
									Ri Kum		31.543	32.332	33.020	34.112	35.771	37.221	38.464	39.032	39.652	40.816	41.374	41.374	41.374	41.374
								992	Dev Kum		(11.918)	(11.129)	(10.441)	(9.349)	(7.690)	(6.240)	(4.997)	(4.429)	(3.809)	(2.645)	(2.087)	-	-	-
									Manpower															
Perkuatan GRC Interior	11-Jan	26-Feb	47	15.346	13.974,10	91,1%	1.371,90	29,19	Ra	15.346,00	327	327	327	327	327	327	327	327	327	-	-	-	-	-
									Ra Kum		12.734	13.060	13.387	13.713	14.040	14.366	14.693	15.019	15.346	15.346	15.346	15.346	15.346	15.346
								340,83	Ri	13.974,10	283	503	522	559	289	121	155	148	275	105	281	-	-	-
									Ri Kum		11.015	11.518	12.041	12.600	12.889	13.011	13.166	13.314	13.589	13.694	13.974	13.974	13.974	13.974
								312	Dev Kum		(1.719)	(1.542)	(1.346)	(1.113)	(1.150)	(1.355)	(1.527)	(1.705)	(1.757)	(1.653)	(1.372)	-	-	-
									Manpower							63	60	55	59					
Skylight	03-Feb	19-Feb	17	3.575	1.154,04	32,3%	2.420,82	142,40	Ra	3.574,86	210	210	-	-	-	-	-	-	-	-	-	-	-	-
									Ra Kum		3.365	3.575	3.575	3.575	3.575	3.575	3.575	3.575	3.575	3.575	3.575	3.575	3.575	3.575
								164,86	Ri	1.154,04	-	-	-	154	366	154	121	136	148	275	-	-	-	-
									Ri Kum		-	-	-	154	320	474	595	731	879	1.154	1.154	1.154	1.154	1.154
								22	Dev Kum		(3.365)	(3.575)	(3.575)	(3.421)	(3.255)	(3.101)	(2.980)	(2.844)	(2.696)	(2.421)	(2.421)	-	-	-
									Manpower					4	11	11	10	10	9	9				
Kanopi Tangga	15-Feb	05-Mar	18	5.388	-	0,0%	5.388,12	299,34	Ra	20.625,28	1.539	1.539	1.539	1.539	1.407	1.407	1.407	1.407	1.407	1.407	1.407	-	-	-
									Ra Kum		6.153	7.692	9.232	10.771	12.313	13.900	14.997	16.404	17.811	19.218	20.625	20.625	20.625	20.625
								-	Ri	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
									Ri Kum		-	-	-	-	-	-	-	-	-	-	-	-	-	-
								-	Dev Kum		(6.153)	(7.692)	(9.232)	(10.771)	(12.313)	(13.900)	(14.997)	(16.404)	(17.811)	(19.218)	(20.625)	-	-	-
									Manpower															
Walkway	03-Feb	05-Mar	30	47.217	9.463,40	20,0%	37.753,40	1.258,45	Ra	47.216,80	1.686	1.686	1.686	1.686	-	-	-	-	-	-	-	-	-	-
									Ra Kum		42.158	43.844	45.530	47.217	47.217	47.217	47.217	47.217	47.217	47.217	47.217	47.217	47.217	47.217
								1.182,93	Ri	9.463,40	-	-	-	1.068	1.068	1.428	1.428	1.112	1.158	1.055	1.147	-	-	-
									Ri Kum		-	-	-	1.068	2.136	3.564	4.991	6.104	7.262	8.316	9.463	9.463	9.463	9.463
								(76)	Dev Kum		(42.158)	(43.844)	(45.530)	(46.149)	(45.081)	(43.653)	(42.226)	(41.113)	(39.955)	(38.901)	(37.753)	-	-	-
									Manpower					5	6	8	8	6	6	8				

Figure 2. Shows the Revised Schedule Provided by Wika Gedung

Based on the aforementioned issues, there is a need for schedule evaluation. Due to the delay, one task, namely the canopy installation, was not completed due to poor communication and insufficient manpower. The objective of this research is to identify and analyze the performance standards used by companies in project construction, as measured through communication management, and the innovation performance that can be applied to the construction sector in projects.

METHOD

The research method aims to analyze the communication management process in Apartment X project, identify risks affecting the communication management process, and analyze the development of risk-based communication flow. A qualitative approach is used for data analysis from literature studies and observations. The research strategy involves surveys and archive analysis, with hypothesis testing using data from surveys to managers as respondents. The research stages include: 1) Introduction: Explaining the research objectives and scope; 2) Research Strategy: Describing the types of questions, event controls, and research focus for each strategy; 3) Research Flowchart: Presenting flowcharts for each problem formulation to be answered; 4) Research Variables: Identifying independent and dependent variables as well as sub-factors and indicators used; 5) Research Instruments: Describing the approach to collecting primary and secondary data, as well as examples of questionnaire formats; 6) Data Analysis: Explaining the stages of data analysis, including descriptive statistical analysis, normality tests, and validity and reliability tests; and 7) Conclusion: Concluding that this research method uses surveys and case studies to identify the causes and impacts of risks, as well as preventive and corrective actions.

RESULTS AND DISCUSSION

Expert Validation Collection

In this section, the profiles of experts involved in the initial validation are presented, including their highest education, positions, and work experience. Following that, the communication flow used in Apartment X project is detailed, outlining its steps.

Table 2. Expert Profile

No	Expert	Highest Education	Position	Work Experience
1.	Expert 1	Bachelor's Degree	Procurement	> 10 Years
2.	Expert 2	Bachelor's Degree	Section Head	> 10 Years
3.	Expert 3	Bachelor's Degree	Staff	5 – 10 Years
4.	Expert 4	High School	Procurement Staff	> 10 Years
5.	Expert 5	Bachelor's Degree	Staff	5 – 10 Years
6.	Expert 6	Bachelor's Degree	PU MEP	5 – 10 Years
7.	Expert 7	Master's Degree	Bureau Manager	> 10 Years
8.	Expert 8	Bachelor's Degree	Staff Engineering MEP Div 3	5 – 10 Years
9.	Expert 9	Diploma	Commercial Section Head	5 – 10 Years
10.	Expert 10	Bachelor's Degree	Section Head and Latency	5 – 10 Years

In this section, a validation test is conducted on the communication flow used. The validity of each activity in the communication flow is questioned, and the results show that all activities are considered valid. The use of the communication flow in Apartment X project by the company is applied universally across all projects, with the following findings:

1) Communication flow in procurement of goods and delivery.

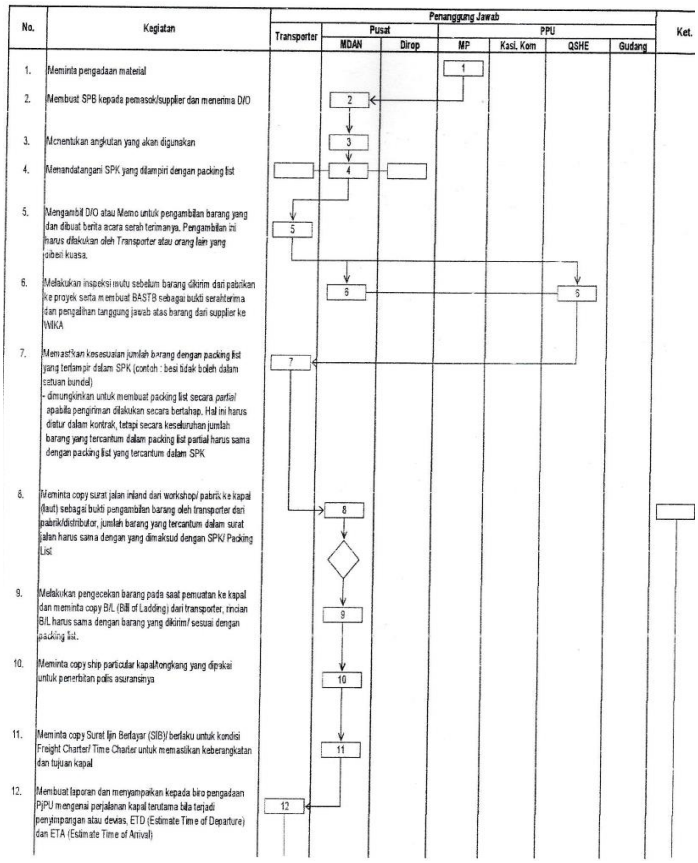


Figure 3. Communication Flow in Procurement of Goods 1
Source: Research Object

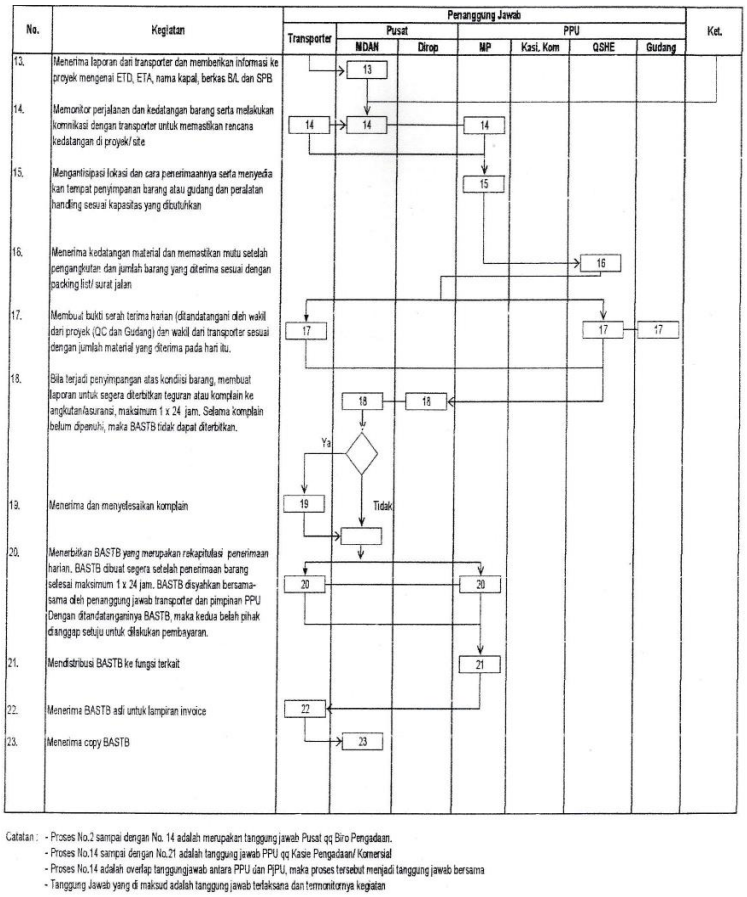


Figure 4. Communication Flow in Procurement of Goods 2
Source: Research Object

1) Requesting material procurement from the project to the center using the internal application media.
2) Creating a Purchase Requisition (SPB) to the supplier using the available application and receiving the Delivery Order (D/O).
3) Determining the transportation to be used decided by MDAN and the center.
4) Signing the Work Order (SPK) attached with the packing list.
5) Taking the D/O or memo for the collection of goods and creating a handover report. The collection must be done by the transporter or an authorized person.
6) Conducting an inspection before the goods are shipped from the manufacturer to the project and creating a BASTB as evidence of receipt and transfer of responsibility from the supplier to WIKA.
7) Ensuring the quantity of goods matches the packing list attached in the SPK (e.g., steel should not be in bundle units).
8) Requesting a copy of the inland bill of lading from the workshop/factory to the ship (sea) as evidence of goods collection by the transporter from the factory/distributor. The quantity of goods stated in the bill of lading must be the same as that in the SPK/packing list.
9) Checking the goods during loading onto the ship and requesting a copy of the bill of lading from the transporter. The bill details must match the goods sent as per the packing list.
10) Requesting a copy of the ship's particulars (SIB) used for insurance policy issuance.
11) Requesting a copy of the Sailing Letter (SIB) applicable for C Freight Charter/Time Charter conditions to ensure the departure and destination of the ship and Gedung Tbk.
12) Creating a report and submitting it to the procurement bureau.
13) Informing PiPU about the ship's journey, especially in the event of deviation or deviation, ETD (Estimated Time of Departure).

14) Receiving reports from the transporter and providing information to the project about ETD, ETA, vessel name, B/L, and SPB files.
15) Monitoring the journey and arrival of goods and communicating with the transporter to ensure the planned arrival at the project/site.
16) Anticipating the location and method of reception and providing storage space or warehouse and handling equipment according to the required capacity.
17) Receiving the arrival of materials and ensuring the quality after transportation and the quantity of goods received according to the Gedung packing list and bill of lading.
18) Creating a daily handover receipt (signed by project representatives (QC and Warehouse) and transporter representatives) according to the number of materials received that day.
19) If there is a deviation in the condition of the goods, creating a report for immediate issuance of warnings or complaints to the authorities/insurance, maximum 1 x 24 hours. As long as the complaint is not fulfilled, the BASTB cannot be issued.
20) Receiving and resolving complaints.
21) Issuing a BASTB which is a daily receipt recapitulation. BASTB is made immediately after the receipt of goods is completed, maximum 1 x 24 hours. BASTB is validated jointly by the transporter's responsible person and the PPU leader.
22) With the signing of the BASTB, both parties are considered to agree to the payment.
23) Distributing the BASTB to the relevant functions.
24) Receiving the Original BASTB for the invoice attachment.
25) Receiving a Copy of BASTB.

A) Procurement Plan Communication Flow

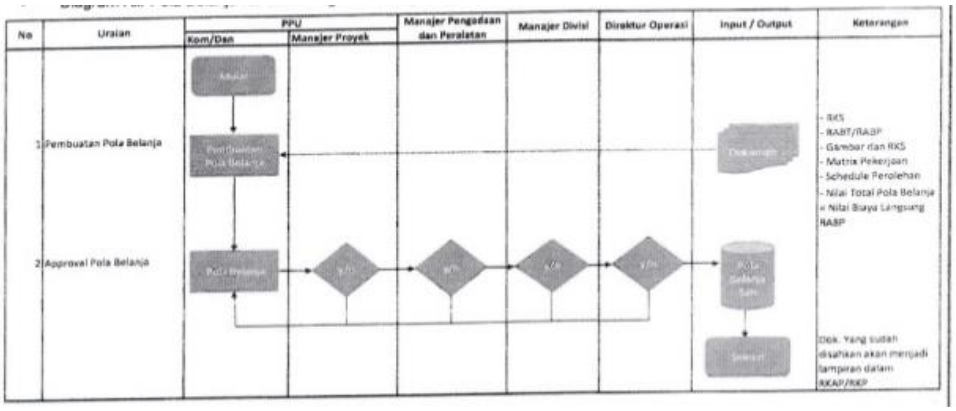


Figure 5. Contract Procurement Spending Pattern Flowchart
Source: Research Object

1) Procurement pattern is created by the Project Committee with input from existing documents (RKS, RABT/RABP, Working Drawings, Work Matrix, Acquisition Schedule, Total Procurement Pattern Value, Direct Cost Value of RABP)
2) Then it is submitted for approval from the Project Management
3) Next, it is forwarded for Approval to the Procurement and Equipment Manager
4) Third approval by Division Manager
5) Fourth approval by Director of Operations
6) Once the Procurement Pattern is approved, it will become an Appendix in the RKAP/RKP

A) Flowchart of Procurement Contract Purchase Contract Execution

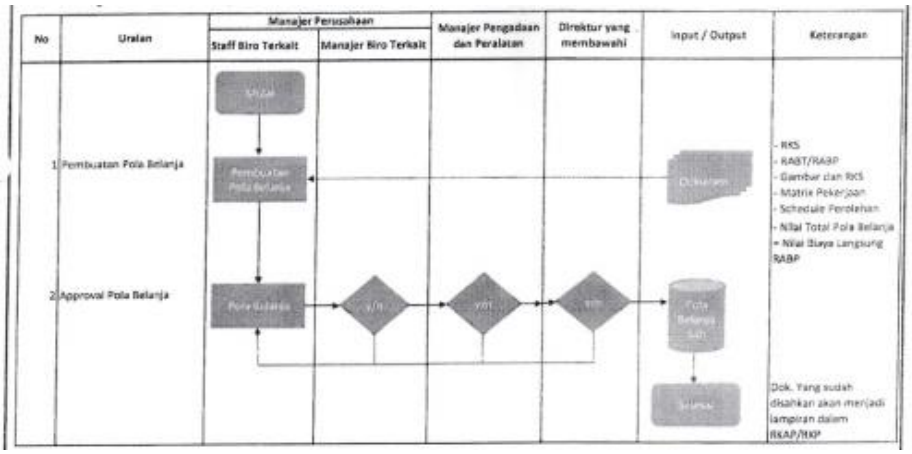


Figure 6. Flowchart of Contract Procurement Pattern for Corporate Management Execution
Source: Research Object

1) The procurement pattern is created by the relevant department staff using existing documents (RKS, RABT/TABP, drawings and RKS, Work Matrix, Procurement Schedule, Total procurement pattern value, Direct cost value RABP)
2) Procurement pattern approval is agreed upon by the relevant Department Manager
3) Procurement pattern approval is agreed upon by the Procurement and Equipment Manager
4) Procurement pattern approval is agreed upon by the Director
5) Once the document is validated, it becomes an attachment in the RKAP/RKP

A) Integrated procurement contract spending flow:

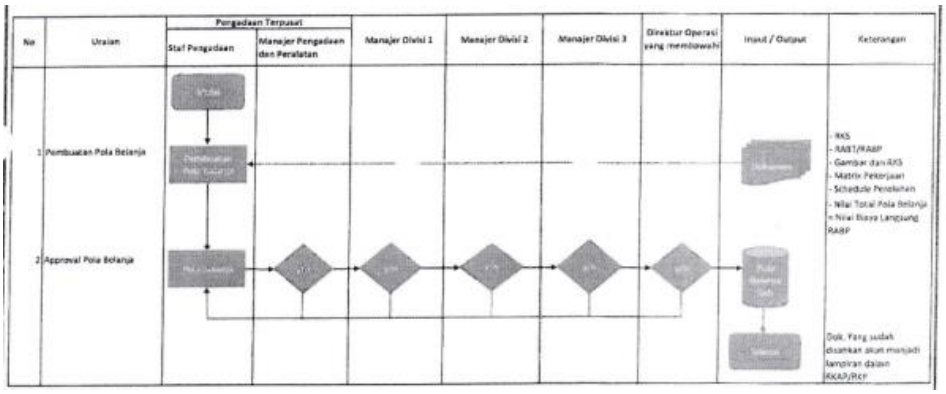


Figure 7. Integrated Procurement Contract Spending Flowchart
Source: Research Object

1) Procurement pattern creation by procurement staff with input documents (Scope of Work, Estimated Budget / Cost Plan, Drawings and Scope of Work, Work Matrix, Acquisition Schedule, Total procurement pattern value, Direct cost value of the Budget / Cost Plan).
2) Procurement pattern approval by the Procurement and Equipment Department Manager.
3) Procurement pattern approval by Division Manager 1.
4) Procurement pattern approval by Division Manager 2.
5) Procurement pattern approval by Division Manager 3.
6) Procurement pattern approval by the Operations Director overseeing it.
7) After the document is valid, it will be attached as an appendix in the Annual Work Plan and Budget.

A) Procurement Pattern Monitoring Flowchart

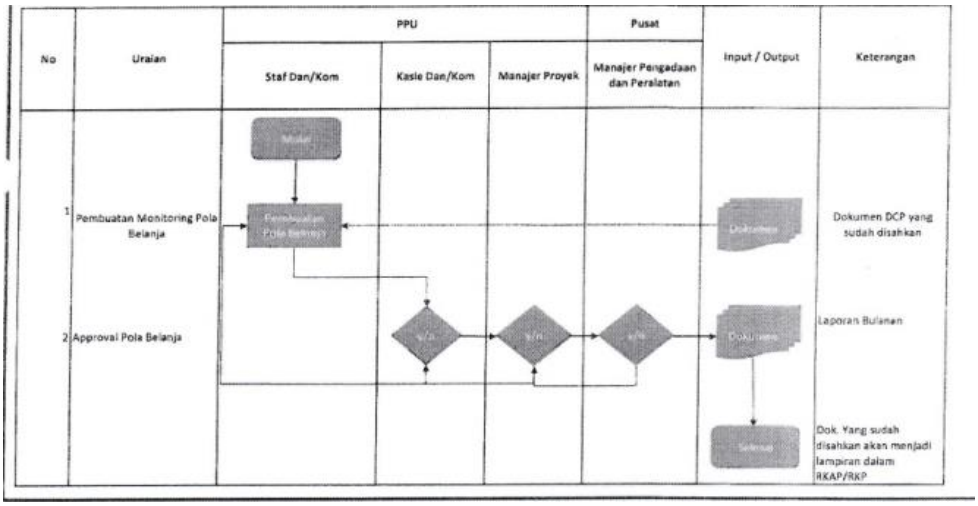


Figure 8. Flowchart of Procurement Pattern Monitoring
Source: Research Object

a. The creation of the Procurement Pattern Monitoring is done by the Staff Dan/Kom with documents (Approved Procurement Plan Document).
b. The Procurement Pattern Monitoring is approved by the Head of Section Dan/Kom.
c. The Procurement Pattern Monitoring is approved by the Project Manager.
d. The Procurement Pattern Monitoring is approved by the Procurement and Equipment Manager.
e. After the document is valid, it will become a Monthly Report and an attachment in the RKAP/RKP.

Validation of Communication Flow Used

After obtaining the communication flow used in the company, its validity is questioned first to determine whether it is accurate or not. If more than half of the answers are affirmative, then it is true that the communication flow is used in company X.

Table 3. Validation Test of Communication Flow Used

Activity Description	Yes	No	Valid
1. Requesting procurement of materials from the project to the center with the media used through the internal application YES / NO (give reasons)	10	0	Yes
2. Create SPB to suppliers using the available application and receive D/O YES / NO (give reasons)	9	1	Yes
3. Determining the transportation to be used is decided by the central MEDAN. YES / NO (give reasons)	7	3	Yes
4. Sign the SPK (Work Order) attached with the packing list YES / NO (give reasons)	10	0	Yes
5. Take D/O or memo for the collection of goods and make a handover report. This collection must be done by the transporter or another authorized person. YES / NO (give reasons)	10	1	Yes
6. Conduct inspections before goods are sent from the manufacturer to the project and create a BASTB as proof of handover and transfer of responsibility for goods from the supplier to WIKA. YES / NO (give reasons)	10	1	Yes
7. Ensure that the quantity of goods matches the packing list attached to the SPK (example: iron cannot be in bundles). YES / NO (give reasons)	10	0	Yes
8. Request a copy of the inland delivery note from the workshop/factory to the ship (sea) as proof of the collection of goods by the transporter from the factory/distributor, the number of goods listed in the delivery note must be the same as that referred to in the SPK/Packing list. YES / NO (give reasons)	10	0	Yes

9. Check the goods when loading onto the ship and request a copy of the bill of lading from the transporter, the details of the b/l must be the same as the goods sent according to the packing list. YES / NO (give reasons)	10	1	Yes
10. Request a copy of the particular ship/barge used to issue the insurance policy. YES / NO (give reasons)	10	0	Yes
11. Request a copy of the Sailing Certificate (SIB)/ valid for C Freight Charter/ Time Charter conditions to ensure the departure and destination of the ship in the Gedung Tbk. YES / NO (give reasons)	9	1	Yes
12. Make a report and submit it to the PiPU procurement bureau regarding the ship's journey, especially if there is a deviation or deviation, ETD (Estimate Time of Departure). YES / NO (give reasons)	10	0	Yes
13. Receive reports from transporters and provide information to the project regarding ETD, ETA, ship name, B/L and SPB files. YES / NO (give reasons)	10	0	Yes
14. Monitor the journey and arrival of goods and communicate with the transporter to ensure the arrival plan at the project/site. YES / NO (give reasons)	9	1	Yes
15. Anticipate the location and method of receipt and provide a place for storing goods or a warehouse and handling equipment according to the required capacity. YES / NO (give reasons)	10	0	Yes
16. Receive incoming materials and ensure the quality after transportation and the number of goods received in accordance with the Building packing list delivery note. YES / NO (give reasons)	10	0	Yes
17. Make daily handover evidence (signed by representatives of the project (QC and Warehouse) and representatives of the transporter according to the amount of material received on that day. YES / NO (give reasons)	10	0	Yes
18. If there is a deviation in the condition of the goods, make a report p va to immediately issue a warning or complaint to the lanakutan/insurance, maximum 1 x 24 hours. As long as the complaint has not been fulfilled, then BASTB cannot be issued. YES / NO (give the reason)	10	0	Yes
19. Receive and resolve complaints. YES / NO (give reasons)	10	0	Yes
20. Issue BASTB which is a recapitulation of daily receipts. BASTB is made immediately after receipt of goods is completed, maximum 1 x 24 hours. BASTB is approved jointly by the person in charge of the transporter and the head of PPU By signing the BASTB, both parties are deemed to agree to make the payment. YES / NO (give reasons)	10	0	Yes
21. Distribute BASTB to related functions. YES / NO (give reasons)	10	0	Yes
22. Receive the original BASTB for invoice attachment. YES / NO (give reason)	10	0	Yes
23. Received Copy of BASTB. YES / NO (give reason)	10	0	Yes
1. The creation of a shopping pattern is made by the Kom/Dan with existing document input from (RKS, RABT/RABP, Working Drawings, Work Matrix, Acquisition Schedule, Total Value of Shopping Pattern, Direct Cost Value of RABP). YES / NO (give reasons)	10	0	Yes
2. After then made then Request approval from Project Management. YES / NO (give reasons)	10	0	Yes
3. Then the Approval is forwarded to the Procurement and Equipment Manager. YES/NO (give the reason)	10	0	Yes
4. Third approval by Division Manager. YES / NO (give reasons)	10	0	Yes
5. Fourth Approval by Director of Operations. YES / NO (give reasons)	10	0	Yes
6. After the Valid Spending Pattern, it will become an Attachment in the RKAP/RKP. YES / NO (give reasons)	10	0	Yes
1. The making of the spending pattern is made by the bureau staff related to the existing documents (RKS, RABT/TABP, Drawings and RKS, Work Matrix, Acquisition Schedule, Total value of the spending pattern, Direct cost value of RABP). YES / NO (give reasons)	9	1	Yes
2. Approval of Shopping Pattern is approved by the Related Bureau Manager. YES / NO (give reasons)	9	1	Yes

3. Approval of the Purchase Pattern is approved by the Procurement and Equipment Manager. YES / NO (give reasons)	9	1	Yes
4. Approval of Shopping Pattern is approved by the Director. YES / NO (give reasons)	9	1	Yes
5. After the document is legal, it will be an attachment in the RKAP/RKP. YES / NO (give reasons)	9	1	Yes
1. Making of shopping pattern by procurement staff with document input (RKS, RABT/TABP, Drawing and RKS, Work Matrix, Acquisition Schedule, Total value of shopping pattern, Direct cost value of RABP) YES / NO (give reasons)	10	0	Yes
2. Approval of the Shopping Pattern is approved by the Manager of the Procurement and Equipment Bureau. YES / NO (give reasons)	10	0	Yes
3. Approval of Shopping Pattern is approved by Division Manager 1. YES / NO (give reasons)	7	3	Yes
4. Approval of Shopping Pattern is approved by Division Manager 2. YES / NO (give reasons)	6	4	Yes
5. Approval of Shopping Pattern is approved by Division Manager 3. YES / NO (give reasons)	7	3	Yes
6. Approval of the Shopping Pattern is approved by the Director of Operations who oversees it. YES / NO (give reasons)	10	0	Yes
7. After the document is legal, it will become an attachment in the RKAP/RKP. YES / NO (give reasons)	10	0	Yes
1. Making of Shopping Pattern Monitoring by Staff and/or Commissioner with documents (approved DCP). YES/NO (give reasons)	10	1	Yes
2. Approval of Shopping Pattern is approved by Kasia Dan/Kom. YES / NO (give reasons)	9	1	Yes
3. Approval of Shopping Pattern is approved by Project Manager. YES / NO (give reason)	9	1	Yes
4. Approval of the Purchase Pattern is approved by the Procurement and Equipment Manager. YES / NO (give reasons)	10	0	Yes
5. After the legal document will become a Monthly Report and attachment in the RKAP/RKP. YES / NO (give reasons)	10	0	Yes

Source: Author's processing

It was found that out of the 46 activities in the communication flow used, it is true that all of them are valid, and the next questionnaire will proceed accordingly.

CONCLUSION

This research highlights the importance of implementing effective communication flow in apartment development projects to enhance overall time performance. Through the use of survey methods and case studies, data obtained from experts and internal analysis by PT.X indicate that the communication flow applied has proven to be valid and effective. However, the findings also identify several factors hindering the smooth flow of communication, including inadequate planning, mismatched communication methods and technologies, and resource limitations. Several recommendations have been proposed to improve the communication flow, such as improving planning, using appropriate communication methods, enhancing information distribution systems, and developing communication skills. It is hoped that by implementing these recommendations, the communication flow in apartment projects can operate more effectively and efficiently, thereby enhancing overall project time performance.

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