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BUSINESS PROCESS INNOVATIONS IN THE COURIER SERVICE SECTOR: A CASE STUDY OF J&T DUNGUN, TERENGGANU

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ABSTRACT

This research explores the journey of a logistics and delivery service provider, tracing its development from a local entity to a significant industry participant. Through a customer-focused approach, the company employs advanced tools and a solid foundation to provide reliable logistical services. It has gained acclaim for its effective transportation-related solutions, establishing a benchmark for quality. Furthermore, this study focusses on the J&T Express company's innovative solutions, technological advancements, and dedication to customer satisfaction have propelled it to a leadership position in the logistics sector. This study highlights the importance of process optimization and technology integration, evident through the case of J&T Express. The adoption of automated wrapping, labelling, and barcode scanning processes has significantly streamlined operations, reduced reliance on manual labor, and improved efficiency. This transformation has led to cost savings, increased operational performance, and scalability. However, the study also underscores the significance of maintaining a balance between automation and human interaction to ensure a successful integration of technology in business operations.

Keywords: Innovation, logistic, transportation, delivery, cost

INTRODUCTION

In an increasingly interconnected world where e-commerce and global trade have become integral components of modern societies, the role of logistics and delivery services has taken centre stage (Sin, 2022). These services form the backbone of supply chains, ensuring the seamless movement of goods from manufacturers to consumers across diverse geographical locations. The evolution of technology, changing consumer behaviours, and the demand for swift, reliable deliveries have catalysed a significant transformation in the logistics and delivery industry (Kelly & Asrah, 2022; Mohamad et al., 2022). This article delves into the intricate landscape of logistics and delivery services, shedding light on the challenges, innovations, and trends that shape this vital sector. By examining a range of scholarly sources, industry reports, and case studies, we aim to explore the multifaceted nature of logistics and delivery services in contemporary times. This exploration will not only offer insights into the operational intricacies of the industry but also provide a deeper understanding of how various factors, such as technological advancements, sustainability concerns, and customer expectations, intersect to influence its dynamics (Rizki et al., 2020).

In the realm of logistics and delivery services, few names resonate as powerfully as J&T Express. With a history steeped in reliability and an illustrious reputation, the company has emerged as a stalwart provider in its field (Yumna et al., 2021). Originating in 2015 as a modest local enterprise, J&T Express has undergone a remarkable metamorphosis, ascending to a prominent position within the global logistics industry. The founders, Jet Lee and Tony Chen, reveal a compelling anecdote behind the company's namely as J&T Express translates to "speedy rabbit" in Chinese, a fitting representation of their unwavering commitment to expeditious deliveries. The inception of J&T Express was driven by an audacious vision to revolutionize the logistics landscape (Mansur & Salsabil, 2021). Constantly at the forefront of innovation, the company has honed an array of comprehensive solutions over the years, harnessing cutting-edge tools and a robust foundation to furnish dependable logistical services (Afiza et al., 2023). Renowned for its effectiveness and reliability in transportation-linked logistics and delivery services, J&T Express has firmly entrenched itself as a preferred choice among businesses and individuals alike. This ascendancy can be attributed not only to its global reach but also its ability to customize services tailored to distinct requirements (Quintania et al., 2023).

J&T Express was conceived with the purpose of redefining conventional logistics practices. From its inception, the company has been dedicated to delivering inventive solutions and unparalleled service to its clientele (Mansur & Salsabil, 2021; Phing et al., 2022). As a testament to this commitment, J&T Express has ascended as an industry leader, distinguished by its dependable and punctual shipping services across a spectrum of industries. This success story is underpinned by a sophisticated technological infrastructure and an expansive distribution network, reinforcing its status as a market trailblazer. Further enhancing its reputation, J&T Express has become a trusted name in logistics and shipping (Sin, 2022; Villapando et al., 2021). The company's adaptability to evolving consumer and corporate demands, coupled with its unwavering dedication to excellence, positions it at the vanguard of the industry. The remarkable trajectory of J&T Express, from its nascent days as a shipping entity to its current prominence as an industry leader, speaks volumes about the company's resolute pursuit of success (Miftachudin, 2023). Bolstered by a steadfast foundation, a forward-looking strategy, and a penchant for innovation, J&T Express is primed to navigate the ever-evolving business landscape. In the ensuing exploration, we delve into the intricacies of J&T Express, examining its diverse array of services that extend beyond conventional shipping, and shedding light on the driving force behind its enduring success (Quintania et al., 2023; Razani & Bin Azmi, 2022). Furthermore, this article will examine real-world case studies that highlight successful strategies employed by logistics and delivery companies to address the ever-evolving

demands of consumers and businesses. By referencing reputable sources and empirical evidence, we will strive to provide readers with a well-rounded perspective on the intricate balance between technology, operational strategies, and customer satisfaction within the logistics and delivery domain (Nur Dwi, 2020). As we embark on this exploration, it is our intention to contribute to a deeper appreciation of the critical role that logistics and delivery services play in shaping the modern economy. By synthesizing scholarly research and practical insights, we hope to offer a comprehensive overview of this dynamic industry, shedding light on its challenges, opportunities, and potential pathways for future growth and innovation.

BUSINESS PROCESS MANAGEMENT

Business Process Management (BPM) encompasses the intricate management of processes, entailing a comprehensive sequence of activities, events, and decisions designed to optimize business performance. Addressing pertinent issues within the realm of existing business process management, particularly concerning J&T Express Malaysia, centres around the challenge of sluggish delivery processes (Arumugam et al., 2020). J&T Express is renowned for its expeditious courier and express services, aligning with the overarching goals of J&T Express Malaysia, which aspires to establish itself as a pivotal Southeast Asian transit hub, occupying a strategic niche in the courier express industry while offering unparalleled convenience. With customers entrusting their parcels' swift and secure delivery to the organization, the imperative for J&T Express Malaysia lies in elevating its service quality, enhancing the customer experience (Novitasari & Anwar, 2022). The crux of the matter emerges in the form of tardy delivery processes within J&T Express Malaysia. The ramifications of shipping delays reverberate widely, potentially tarnishing the company's reputation and incurring escalated operational expenses, penalties, and, most detrimentally, disgruntled patrons. Consequently, customers experiencing such setbacks seek transparency regarding the causes and anticipate timely package delivery or appropriate compensation (Tang et al., 2022). Nonetheless, the intricacies of delivery hold complexities that are sometimes beyond immediate control, entailing various factors contributing to the delay. Examples encompass incomplete customer location information or workforce scarcity stemming from labor shortages, underscoring the multifaceted nature of the challenge.

PROCESS MODELLING

Process modelling is a structured approach to visually representing and understanding the workflow, steps, interactions, and dependencies of a system or process. It is a crucial technique used in various fields, including business process management, software development, engineering, and operations management.



Figure 1. *Steps of process modelling*

Process modelling helps to simplify complex processes, improve communication among stakeholders, identify inefficiencies, and facilitate process optimization. Figure 1 shows the steps in process modelling.

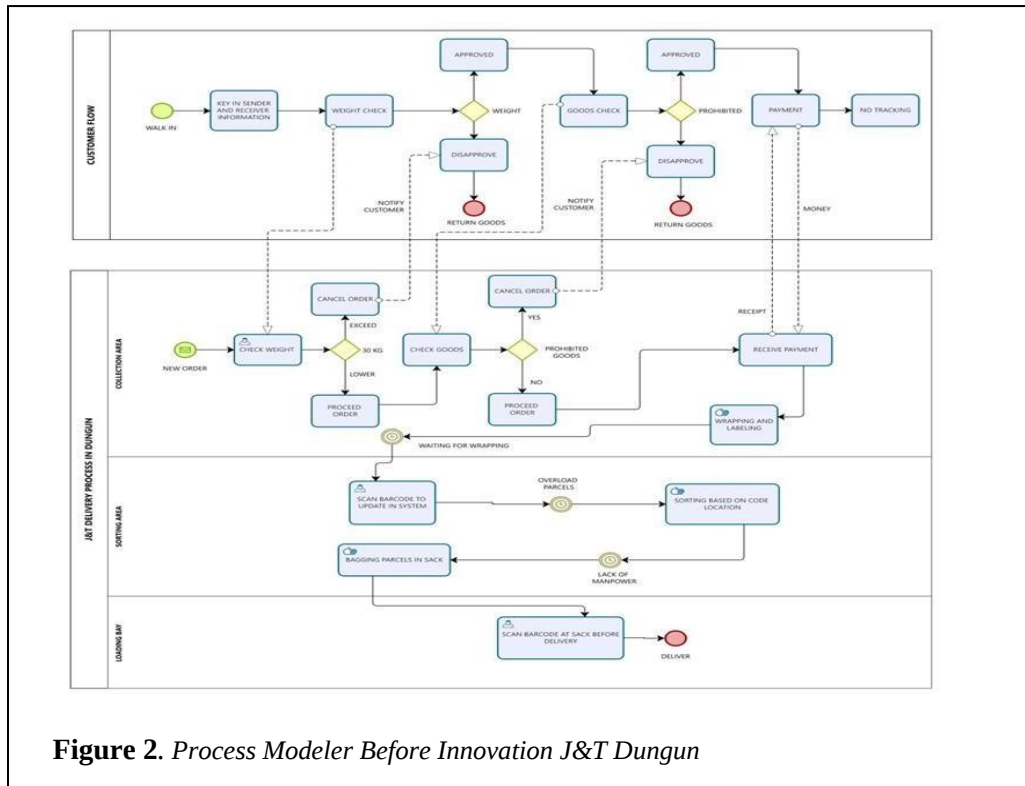
Process Discovery

Within the realm of process modelling, various techniques for discovery can be employed, including evidence-based discovery, interview-based discovery, and workshop-based discovery. For the scope of this assignment, two of these techniques were utilized to comprehensively gather information pertaining to the process flow within JNT delivery: evidence-based discovery and interview-based discovery. Among the branches of evidence-based discovery, document analysis emerged as the chosen approach for this assignment. A repository of documentation was generously provided by a JNT branch owner in Dungun. The documentation encompasses an organizational chart, the process flow of JNT delivery, layout details, quality tools employed by JNT, and Standard Operating Procedures (SOPs) for wrapping and labelling. This documentation bears relevance and credibility, as it originates directly from JNT and maintains current accuracy. The merits of document analysis are multifaceted. Primarily, it's a cost-effective avenue for information gathering, negating the need for specialized equipment or tools while allowing limitless document review. Additionally, document analysis proves non-intrusive, circumventing any disruption to ongoing processes or involved personnel. This preserves data accuracy and impartiality. However, document analysis is not devoid of limitations, including potential discrepancies in the up-to-date or precision of documents. To mitigate such concerns, the company selectively utilizes exclusively up-to-date and verified data sourced solely from JNT.

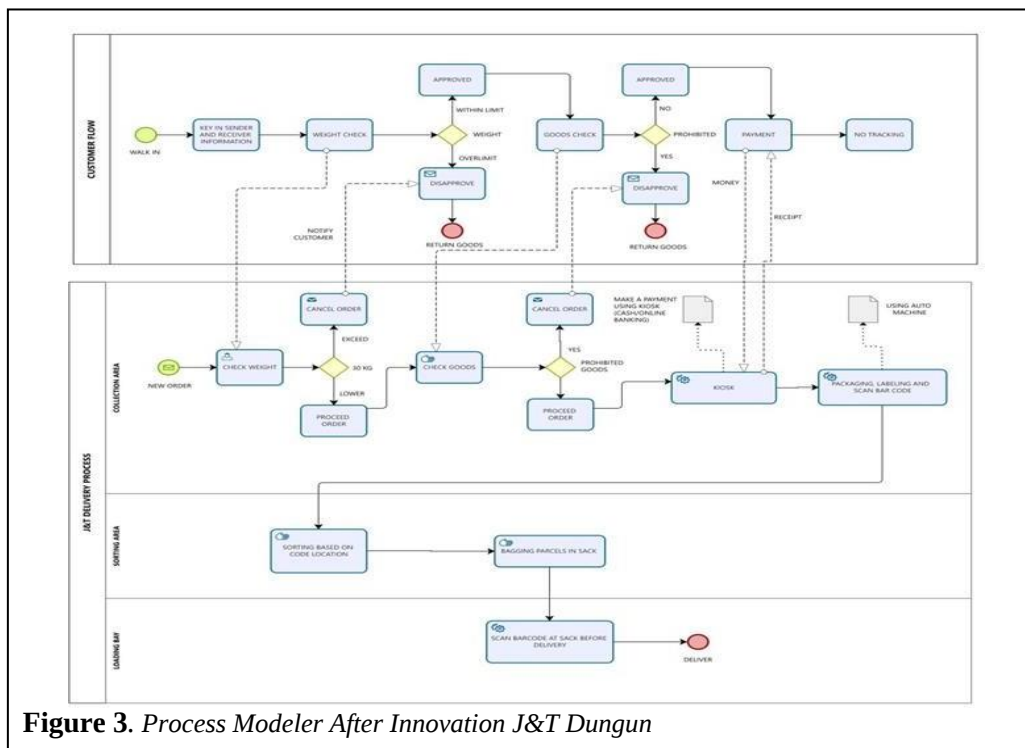
The second method employed for process discovery is the Interview-Based Discovery. This approach entails engaging in dialogues with individuals well-versed in the domain under investigation. In this case, the insightful input of Mrs. Erna Bistari Binti Ahmad Tarmizi played a pivotal role. As both the owner and Operation Manager of J&T Dungun, Mrs. Erna possesses extensive expertise, serving as a rich source of detailed information crucial to this assignment. Mrs. Erna's contributions encompass a comprehensive breakdown of the processes involved in J&T Dungun, elucidating each step's execution, intricacies, and operational oversight. Furthermore, her insights extend to areas of improvement, aimed at enhancing the efficiency of J&T Dungun's operational procedures. Mrs. Erna's invaluable guidance ensures the assignment's accuracy and clarity, elucidating the inner workings of a courier service. Her inputs illuminate not only the processes but also the broader operational context of J&T Dungun.

Before Innovation

In the collection area is the first process of service J&T Dungun is started. Firstly, the customer will walk into the store. After that, the weight of goods will be checked whether it more than 30 kg or not. If yes, their goods will be rejected. After that the J&T workers will check whether the goods are either prohibited goods or not. If yes, J&T need to notify the customer that they will reject posting out their goods. If no, the order will be proceeded. After that, the customer needs to make payment to proceed with the service. Customer will get their tracking number after they successfully paid for the service. Which means it will be led to wrapping and labelling task. It takes time to wrap the goods because workers need to follow the SOP that has been set and workers need to print details of parcel using thermal printer to label the parcel. Then, the process in sorting area, the worker needs to scan the code of label at the parcel to update in the system. The workers will use their own phone to scan the barcode. It takes time for this task because there are many parcels that need to be scanned. Next, the parcels need to be sorted based on the code location. J&T Dungun lack of manpower that sometimes will make the sorting error.



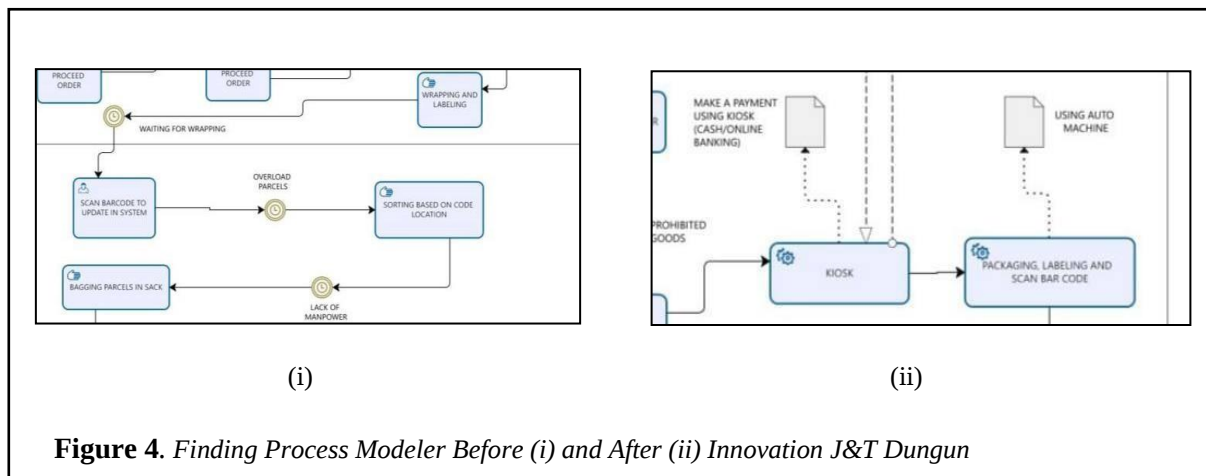
After Innovation



After all parcels have been sorted the workers need to bag the parcels into the sack for the process delivery and on the sack, there will be the label to show the sack is contained with parcel in certain state. Lastly the process will end at loading bay, where J&T scan the code at sack before the delivery.

FINDING THEORIES

Based on the diagram above it shows that the improvement of delivery process of J&T Dungun based on Bizagi. There are changes that occur in this diagram of process model, and it is based on the original process of the previous model. Where the customer flows remain the same. Firstly, in the collection area, it starts with the customer walking into the store. Then, the goods that will be posted need to check the weight first. It cannot be more than 30 kg. After that, the goods will check whether it is prohibited or not. if yes, J&T will cancel the order and notify the customer about their goods. Then, if no, the order will be proceeded. Then, after that the customer will pay for the services using the kiosk. The kiosk is used to make payments. The option that can be used to pay for the service is cash and online banking. After payment is settled, the customer will get their tracking number for the parcel. The parcel will go to the task where it will be the auto packaging, labelling and the code will be scanned automatically in the system. All the processes are combined because of the use of the machine. Secondly, after that, the process will proceed in the sorting area. Where the workers will be sorting based on code location. Every code location has its own meaning, such as for Dungun the code is TRG011. That means every state has a different code. Then, all the parcels that have been sorted will be bag in the sack and the sack also have the label. Lastly in the loading bay, the code at the sack will be scanned and proceed to the delivery process.



Technology Innovation

Before implementing technology, JNT relied on manual processes for wrapping, labeling, and barcode scanning, which were time-consuming and prone to human error. This resulted in limited processing capacity, increased risks of misidentification, and reduced visibility of packages. However, by integrating technology into their operations, JNT can significantly enhance efficiency and speed in the packaging and labeling process. The customized machine can automate these tasks, reducing the reliance on manual labor and human error. With automated wrapping and labeling, packages can be processed at a faster rate.

Not only that, kiosk machine also can give positive impact on JNT process flow. For instance, it will make a quicker turnaround time, reducing the chances of errors and speeding up the payment process, identification and tracking of packages within the system. Besides, technology also can give a higher level of accuracy and traceability to JNT's system. The machine's auto-scanning feature ensures that barcodes are read and recorded correctly, reducing the chances of mistakes like mixing up or sending packages to the wrong destination. This improves package tracking throughout the delivery process, giving customers real-time updates on their shipments and lowering the risk of packages getting lost or misplaced. Moreover, the automation of labeling guarantees that labels are applied accurately to each package, minimizing errors, and improving the precision of package information. These advancements in accuracy and traceability not only enhance customer satisfaction but also establish JNT as a reliable and trustworthy choice for customers who value efficient and dependable package delivery.

Process Innovation

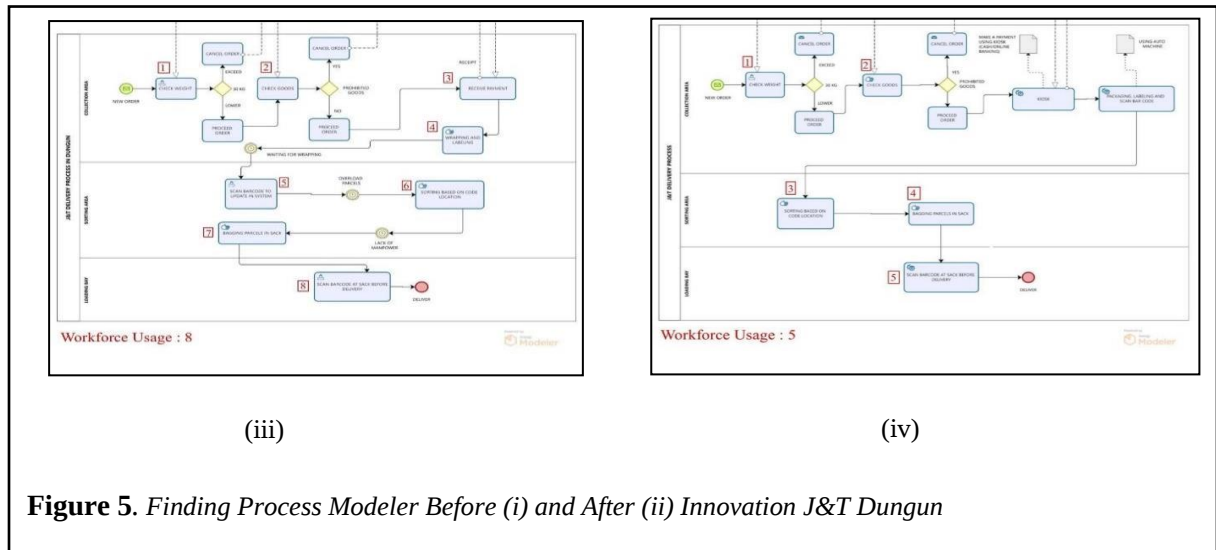


Figure 5. Finding Process Modeler Before (i) and After (ii) Innovation J&T Dungun

RECOMMENDATION AND SOLUTION

The first recommendation is to improve the sorting method. In order to avoid sorting error, instead of dividing the area using red cello tape, J&T can properly divide the sorting sections by using a huge trolley for each area to put all the parcels. Each parcel needs to be scanned first at the trolley and on the screen will tell how many parcels are in the trolley. It is convenient where it can be moved around from the sorting area to delivery area and can make sure the parcels will be delivered to the right area according to the code. J&T staff can also just push it to the van at the entrance instead of having to carry parcels one by one, this can save time and energy. Then, in terms of staff members, J&T Express needs to allocate considerable amounts of staff members to an area that requires additional help. Particularly in the department of deliveries, some of the branches located across several locations have been struggling with a lack of employees. One location, for instance, has a lot of parcels that need to be delivered on the same day, but the worker who is responsible for doing so only has two employees, which results in the parcel being delayed because the worker did not have enough time to deliver every item on the same day. Furthermore, a worker in the operations or administrative department must look through properly because

some of the sections only require just one person to complete the task. Moreover, reduce wastage of time and space. If J&T has to reduce unused space and find a solution that offers flexibility and control such as create a system where drag and drop functionality makes it simple to move delivery orders around, switch vehicle routes, or re- optimize delivery timetables. J&T staffs is able to re-evaluate the route and switch to their drives. The staffs may immediately see any violations and determine the new cost for their routes using the route summary. Utilizing route optimization is the first step in improving J&T's delivery process efficiency and increasing the possibility that products will be delivered on time. To accomplish it perfectly, J&T deliverymen must have a thorough understanding of all the geographic regions and street network that J&T deliveries service. They must also be able to mentally calculate the sequence in which deliveries should be made to travel the furthest distance in the quickest amount of time.

CONCLUSION

Taking everything into account, it can be said that J&T Express is also inevitable from having problems from the beginning of their work until the parcel arrives at the supposed location. This can be seen from the cause-and-effect diagram, also known as a "fishbone" diagram, as it can be used to categorize ideas and brainstorm potential causes of a problem. Factors such as lack of staff, unprofessional staff, outdated technology, and lack of machines can all cause a slow process delivery. It also can help to identify potential explanations for an issue that might not otherwise be considered. As was mentioned before, J&T's wrapping process is complicated and needs to follow a set of standards. Consequently, poor material, substandard performance, poor layout, and sorting errors can lead to broken or damaged items, substandard performance, and a one-day delay in delivery. On the other hand, J&T also faced labour costs and challenges in scaling operations due to manual tasks like wrapping, labelling, and barcode scanning. Technology implementation reduced these costs by using customized machines to perform repetitive tasks. This led to cost savings, increased operational efficiency, and scalability. The new technology enabled processes, allowing JNT to handle higher volumes of service requests without significant manpower expansion. This improved productivity and strategic resource allocation, ultimately enhancing overall operational performance. In conclusion, J&T Express is a good example of how the success of every big company is not achievable without receiving any hardship either internally or externally. Not to mention, the innovation that was made can also be used in the future as it will definitely give a huge benefit not just for them, but also for the consumer as well. The occurrence of receiving the same problem in their daily routine also adds another good reason on why the innovation is a good match for both parties. However, while innovation and the use of machinery in a business- like J&T Express have many advantages, it is crucial to balance automation with keeping a human touch. This will surely help to balance out the use of manpower and machine so that it can be used effectively and efficiently

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