

STRATEGIC POSTPONEMENT IN FAST FOOD OPERATIONS: ENHANCING ORDER FULFILMENT IN A FRONTIER EMERGING MARKET

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Abstract

This research explores the effect of strategic postponement on order fulfilment performance within Zimbabwe's fast-food sector, a vital yet underexamined area in Sub-Saharan African market studies. This investigation is propelled by the notable lack of empirical scrutiny on postponement strategies in the region's fast-food industry, particularly within the challenging context of Zimbabwe's volatile economy. Such conditions offer limited managerial insights into the correlation between form postponement and order fulfilment efficiency, diverging from the trends observed in more developed and saturated markets. Utilising a causal research framework, the study gathered data from a survey of 100 fast food establishments in Harare, employing Multivariate Analysis of Variance (MANOVA) for data analysis, complemented by Bonferroni correction to mitigate type 1 error from multiple comparisons. Findings indicate that restaurants implementing a postponement strategy significantly outperform their counterparts in order fulfilment metrics. The study advocates for the adoption of postponement strategies by fast food operators to enhance order fill rates, accuracy, and cycle times, thereby navigating the complexities of emerging markets more effectively. Despite its insightful contributions, the study acknowledges its geographical limitation to Zimbabwe, attributed to budgetary restraints.

Keywords: Postponement strategy, Order fill rate, Order fulfilment cycle time, Order fulfilment accuracy.

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1. INTRODUCTION

The concept of postponement was first coined by Alderson (1950) to refer to the delay in determining a product's form, identity, or placement until a customer's specific requirements are ascertained. Postponement is also a supply chain management concept where a generic product is produced using a make-to-stock strategy and later modified using a make-to-order strategy (Pratavia et al., 2024). It is a push strategy driven by an uncertainty in demand for the final product (Pratavia et al., 2020). Instead of producing a product to its finality, the postponement strategy advocates for stocking semi-finished goods until demand patterns are clearer (Pratavia et al., 2024). The completion of the production process upon receiving a definite customer order is motivated by the need to eliminate incorrect product deployment, eradicate higher inventory costs, and avoid stock obsolescence (Siiskonen et al., 2023). Thus, postponement involves a decoupling point where demand changes from being independent to a dependent status (Olhager & Van Donk, 2024).

Businesses in general and restaurants in particular benefit through making shorter forecasting horizons (Fildes et al., 2022; Ma & Fildes, 2020) and customisation of generic products (Siiskonen et al., 2023; Lyons et al., 2020). Postponement generally applies to production processes involving a production system whose output at various nodes is modular (Becker et al., 2021). The modular product design has exchangeable components, is loosely coupled, and is scalable (Becker et al., 2021). There are generally three generic types of postponement: form, time, and place postponement (Zinn & Bowersox, 1988). In the fast-food restaurant industry, form postponement is the most common. Fried chicken and chips, the most common product line in the fast-food industry in Zimbabwe (Mukucha et al., 2024), are served through the form postponement strategy. Fried chicken and chips are prepared using the lean strategies under the assembly line method. However, differentiation is delayed until an ascertainment of customer orders, which differ due to varying flavours and pack sizes of menu items (Seo, 2020).

The fast-food industry is associated with the provision of ready-made food in order to keep in line with its key distinctive features of easy accessibility and convenience (Abdollahnejad et al., 2025). The customisation aspect of the generic meal comes in when the restaurant caters to varied patrons' needs in terms of flavours, temperature, and pack sizes (Yoon et al., 2020). Therefore, this study seeks to determine the effects of postponement strategy on order processing metrics in the fast-food restaurant industry.

This investigation is propelled by the notable lack of empirical scrutiny on postponement strategies in the region's fast-food industry, particularly within the challenging context of Zimbabwe's volatile economy. Thus, the objective of this article is to investigate the relationship between product postponement strategies and order fill rates. We intend to offer insights into the potential benefits of postponement for

improving order fulfilment performance since order fulfilment is crucial for enhancing customer outcomes such as customer satisfaction and loyalty. Eventually, our findings may provide some valuable implications for practitioners in search of operational strategies that enhance greater efficiency and higher order fulfilment levels. Henceforth, the rest of the study is organised as follows: a literature review related to how various dimensional aspects of order fulfilment metrics are impacted by the postponement strategy, operationalisation of the study variables, data collection procedures, data analysis, and lastly, a discussion of the results that culminates in the formulation of the recommendations and managerial implications of the study.

2. LITERATURE REVIEW

The concept of postponement refers to the delay in coming up with product-specific attributes to avoid a mismatch between customer orders and the inventory at hand (Jafari et al., 2021; Lysons & Farrington, 2020). It can also be regarded as an order fulfilment strategy to ensure that firms supply what customers require (Mukucha & Chari, 2023). Postponement can be done as late as the order fulfilment phase (Christopher, 2020). Postponement is a combination of push strategies and pull strategies whereby the initial phase involves pushing a product along the supply chain up to a certain point where the pulling of a product takes over depending on the requirements of the customers (Chopra et al., 2018), thus deriving product differentiation at the later stages of the supply chain (Jafari et al., 2022).

Postponement allows for differentiation at various production points, such as assembling, packaging, and labelling (Christopher, 2022). Kotler and Keller (2016) identified the levels of a product as core, actual, and augmented. The postponement assembling is at the actual production levels, where differentiation comes from the ingredients used in making the product. At the augmented level, postponement comes in the form of packaging. In this study, postponement is proposed to lead to an improvement in order fulfilment performance metrics. There are several order fulfilment performance metrics, and these include order fulfilment rate, order cycle fulfilment time, and order cycle fulfilment accuracy (Chopra et al., 2018).

2.1 Form postponement and order fulfilment rate

Order fill rate in supply chain management is a percentage of customer orders that a firm can deliver to customers without missing a sale or recording backorders (Chopra et al., 2018). It can also be explained as the fraction of orders placed and filled from the inventory at hand (Sanders, 2025). Backorders are orders that cannot be met with the available stock, leading to customers having to wait for some time before they receive their orders (Lysons & Farrington, 2020). The fill rate is determined by dividing the

number of orders fulfilled by the total number of orders received (Lysons & Farrington, 2020). Attaining a maximum order fill rate improves the relationship between a business and its customers (Coyle et al., 2021), shows how well a business manages its inventory through logistics and supply visibility (Chopra et al., 2018), and alerts businesses to lost sales due to understocking (Christopher, 2022).

Customers place orders with full confidence that the business they approach has what they want in stock (Kotler & Keller, 2016). They usually invest much time physically or electronically visiting business organisations, incurring monetary or time-wise expenses. These costs may be in the form of time away from their usual places of residence or financial in terms of the travelling costs or data costs if the visit is done online. Therefore, finding the needed item out of stock may lead to embarrassment and discomfort, resulting in unfavourable behavioural tendencies like customer defections and spreading negative word of mouth (Taylor, 1994). The prevalence of out-of-stock situations is common in industries where make-to-stock production systems are practised (Christopher, 2022), yet the market needs are diverse. In such markets, customers may not be willing to accept the substitutes. This is common in the restaurant industry. One of the limited solutions open to businesses operating in markets with varied needs is to practice a form postponement strategy. The postponement has ample inventory kept in a semi-finished state and finalised upon receipt of definite customer orders (Christopher, 2022). That was, the order fill rate tended to improve to acceptable levels. Therefore, it is predicted that:

H1: Form postponement has a statistically significant effect on order fill rate.

2.2 Form postponement and order fulfilment time

Order cycle fulfilment time is a supply chain metric that assesses the duration that lapses between the time a customer places an order and the time the receipt of an order is made (Lysons & Farrington, 2020). This metric provides insight into the internal efficiency of the order fulfilment process and the entire supply chain in general (Chopra et al., 2018). Making customers wait too long affects their satisfaction and repatronage behaviours (Wirtz & Lovelock, 2021). Worse, some customers may cancel orders if they are not received in time (Lysons & Farrington, 2020). Such a move may lead to immediate losses since businesses with cancelled orders may end up with products that may not be resold, especially in the case of restaurant orders.

Generally, customers do not enjoy waiting (Wirtz & Lovelock, 2021). The sentiments of customers towards waiting have already been profiled by Maister (1988). He said the perceived waiting duration could be shorter if explained, in-process, fair, occupied, and inevitable if possible customers would prefer to get their orders upon placing an order (Al-Adwan et al., 2022). However, the prompt receipt of an order is possible in make-to-stock production systems where customer needs are known in advance, and the quantity

demand can be forecasted accurately (Rau et al., 2021; Saruchera & Asante-Darko, 2021). In some industries with higher customer needs variability, the only viable production system is the make-to-order strategy. The connotations of this strategy are that customers would be forced to wait while their orders are being prepared and processed (Wirtz & Lovelock, 2021). However, adopting the form postponement strategy suggests that a lean production of a generic product version can be done up to a decoupling point from which product variants can be made upon receiving a definite customer order. That way, the duration of an order fulfilment is reduced to acceptable levels. Based on this discussion, it is anticipated that:

H2: Form postponement has a statistically significant effect on order cycle fulfilment time.

2.3 Form postponement and order fulfilment accuracy

Order fulfilment accuracy refers to the number of accurately processed orders as a proportion of the total number of orders processed (Chopra et al., 2018). Order fulfilment accuracy leads to accelerated profitability (Lysons & Farrington, 2020), reduces incorrect deliveries (Coyle et al., 2021), and improves customer retention (Kotler & Keller, 2016). Inaccurate order processing is associated with costly returns (Chopra et al., 2018) that can harm a business's reputation and negatively impact the customers' patronage behaviours and re-patronage intentions (Al-Adwan et al., 2022).

Order fulfilment accuracy is one of the most important metrics businesses have to monitor religiously (Lysons & Farrington, 2020). Delivering wrong orders to customers is usually associated with negative consequences for the customers and the businesses (Mukucha & Chari, 2023). In critical industries such as medical businesses, giving a customer a wrong prescription may result in the customer losing his or her life. At the same time, the business that gave the wrong prescription may be sued or have its operating license withdrawn. The same happens in restaurants where giving customers wrong orders may cause patrons to consume food that may harm their health or lead to switched orders that may end up hurting all the customers involved in a service failure. Thus, ensuring accuracy in order fulfilment may prevent financial losses to the business and its customers (Chopra et al., 2018). Accuracy is attained if a business accurately captures customers' needs instead of delivering what it thinks are the needs of customers (Kotler & Keller, 2016). Therefore, it is thus suggested that form postponement can align the production system with the customers' requirements. This is because production is based on the customer's definite and precise order (Lysons & Farrington, 2020). Therefore, it is reasonable to suggest that:

H3: Form postponement has a statistically significant effect on order cycle fulfilment accuracy.

3. METHODS

3.1 Population and sampling

The population of this study was all the fast-food restaurants in Harare. There are no official statistics on the population size of all the restaurants in Harare due to the shambolic administration systems in most third-world countries. Due to the unavailability of the sampling frame, the researchers used convenience sampling methods (Struwig & Stead, 2013). Convenience sampling is a non-probability sampling method (Saunders et al., 2024). That means the researchers had to rely on those restaurants that were easily accessible and willing to be part of this study. The sample size of 100 was therefore determined based on the statistical requirements of the statistical tools used for analysing the data.

3.2 Data collection instrument

The data collection instrument used to assess all the study variables of postponement strategy, order fulfilment rate, order cycle fulfilment time, and order fulfilment accuracy was a questionnaire. The postponement was operationalised as a binary construct with yes for the implementation of the strategy and no for non-implementation. The order fill rate was operationalised as the percentage of orders satisfied with the inventory (Larsen & Thorstenson, 2012). Order cycle fulfilment time was operationalised as the time a customer has to wait before he/she receives his/her order. Order fulfilment accuracy was operationalised as the percentage of orders correctly delivered to the customers.

3.3 Data collection procedures

Using a self-administered questionnaire, data were collected from chief operating officers or their equivalents at fast-food restaurants in Harare. These chief operating officers provided data on postponement strategies adopted, order fill rate, order cycle fill time, and order cycle fill accuracy. Given the busy schedules of respondents, the self-administered survey gave the respondents enough time to respond to the questions on their own time without feeling pressured by the presence of researchers. After a few days, the researchers would return to the respondents to collect the filled questionnaires. That way, the researcher managed to attain a 100% response rate.

3.4 Data analysis procedures

Hypotheses testing was conducted using One-way Multivariate Analysis of Variance (MANOVA) through the Statistical Package for Social Scientists (SPSS) version 26. One-way MANOVA is a multivariate statistical tool used for assessing the effects of a single independent variable on multiple dependent

variables (Field, 2024) and is an extension of the univariate Analysis of Variance (ANOVA) (Hair et al., 2014). MANOVA reduces the inflation of Type 1 errors common in related post hoc tests, including ANOVA (Warne, 2014; Tabachnick & Fidell, 2013). The validity of results emanating from MANOVA tests depends on meeting MANOVA statistical assumptions (Field, 2024). The statistical assumptions were assessed, and the hypotheses were tested. The Bonferroni correction was done to cater for numerous comparisons (Hunt, 2022).

4. RESULTS

The results presented in this section relate to the studied firms' sample characteristics and hypotheses testing.

4.1 Sample characteristics

As shown in Table 1, the respondents in this study were top-level managers; 60% and 40% were male and female, respectively.

TABLE 1. DEMOGRAPHIC PROFILE OF RESPONDENTS

Attribute	N	%
Buyer characteristics		
Gender		
Male	40	40
Female	60	60
Experience		
0-1	55	55
2-4	30	30
5 and above	15	15
Firm characteristics		
Location		
Urban	63	63
Resort Centre	30	30
Along Highways	07	07
Firms' structure		
Single entity restaurants	75	75
Chain restaurants	25	25

Source: authors' research

Their experience was largely above five years. Most of the restaurants surveyed were located in the CBD (58%), followed by the industrial areas (32%), and lastly, residential areas (10%). 23% of the surveyed restaurants were part of restaurant chains, while 77% were stand-alone. Table 2 shows the descriptive statistics regarding the number, mean and standard deviation of the OFR, OCFT and OCFA for the restaurants studied.

TABLE 2. DESCRIPTIVE STATISTICS

	Postponement Strategy	Mean	Std Deviation	N
OFR	Yes	95.82	2.118	49
	No	90.49	2.679	51
	Total	93.10	3.600	100
OCFT	Yes	97.02	3.626	49
	No	90.75	2.521	51
	Total	93.82	4.418	100
OCFA	Yes	97.71	2.160	49
	No	90.53	3.331	51
	Total	94.05	4.571	100

Source: authors' research

4.2 Hypotheses testing

The three study hypotheses suggested statistically significant differences between restaurants that follow the postponement strategy and those that do not pursue the same strategy regarding order fulfilment rate, order cycle fulfilment time and order fulfilment accuracy. These three hypotheses were tested using One-way MANOVA. Prior to hypothesis testing, the assumption of correlation was assessed and was found to be statistically significant for all the pairs. MANOVA's power is affected by the correlations of the dependent variables and by the effect sizes associated with those variables (Saunders et al., 2024). For example, in the case of two groups and two dependent variables, MANOVA's power is weaker when the correlation equals the ratio of the smaller to the larger standardised effect size (Field, 2024). The other assumptions of MANOVA, such as multivariate normality and equality of covariance, were side-lined on the basis that the departures from multivariate normality are inconsequential when the sample sizes are larger (Hair et al., 2014), and there were equal cases in each group (Field, 2018) respectively. Therefore, Pillai's Trace, which is robust to all these violations of these assumptions, was used (Field, 2024).

TABLE 3. MULTIVARIATE TESTS

Effect		Value	F	df	Error df	Sig.	Partial Eta Squared	Observed Power
Intercept	Pillai's Trace	1.000	130003.000 ^b	3	96	.000	1.000	1.000
	Wilk's Lambda	.000	130003.000 ^b	3	96	.000	1.000	1.000
	Hotelling's Trace	4062.594	130003.000 ^b	3	96	.000	1.000	1.000
	Roy's Largest Root	4062.594	130003.000 ^b	3	96	.000	1.000	1.000
Postponement Strategy	Pillai's Trace	.820	145.360 ^b	3	96	.000	.820	1.000
	Wilk's Lambda	.180	145.360 ^b	3	96	.000	.820	1.000
	Hotelling's Trace	4.543	145.360 ^b	3	96	.000	.820	1.000
	Roy's Largest Root	4.543	145.360 ^b	3	96	.000	.820	1.000
a. Design: Intercept + Postponement strategy								
b. Exact statistic								
c. Computed using alpha = .05								

Source: authors' research

The results of MANOVA in Table 3 revealed that there was a statistically significant difference between the two production strategies, postponement and non-postponement, on the combined dependent variables, Pillai's $T=685$, $F(3,96)=145.360$, $p<.001$, partial $\eta^2=.820$, observed power = 1.00. Based on these results, evidence was sufficient to reject the null hypothesis and conclude that order fulfilment metrics differed based on the form of the postponement strategy adopted. The effect size was large. The observed power was 1.00, indicating a 100% chance that the result could have been significant. Considering that the MANOVA results came out, significant separate univariate analyses were conducted and the results are shown in Table 4. The Bonferroni method was then used, and each ANOVA was tested at a .016(.05/3) alpha level.

TABLE 4. IN-BETWEEN SUBJECTS TESTS

Source	Dependent Variable	Df	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power
Postponement strategy	OFR	1	121.014	.000	.553	121.014	1.000
	OCFT	1	101.660	.000	.509	101.660	1.000
	OCFA	1	162.352	.000	.624	162.352	1.000
Error	OFR	98					
	OCFT	98					
	OCFA	98					

Source: authors' research

Results demonstrated that there was sufficient evidence to reject the order fulfilment rate, $F(1, 98)=121.014$, $p<.001$, partial $\eta^2=.533$, observed power = 1.000, the order cycle fulfilment accuracy rate, $F(1, 98)=101.660$, $p<.001$, partial $\eta^2=.509$, observed power = 1.000, and the order fulfilment time adherence rate null hypotheses, $F(1, 98)=162.352$, $p<.001$, partial $\eta^2=.624$, observed power = 1.000 (see Table 4). Therefore, all the research hypotheses were accepted. Thus, the OFR was higher under the post-postponement strategy ($M=95.82$, $SD=2.11$) than under the non-postponement strategy ($M=90.49$, $SD=2.68$). The OCFT was also higher under the post-postponement strategy ($M=97.02$, $SD=2.52$) than the non-postponement strategy ($M=90.75$, $SD=2.52$). The OFR was higher under the post-postponement strategy ($M=97.71$, $SD=2.16$) than under the non-postponement strategy ($M=90.53$, $SD=3.33$) (see Table 2 for mean and standard deviations). The effect size was large for both ANOVAs. The observed power of 100 indicated a 100% chance that the results could have been significant for all the analyses.

5. DISCUSSION

The results demonstrated an improvement in the assessment of order fulfilment metrics of order fill rate, order cycle fulfilment time, and order fulfilment accuracy as a result of adopting the form postponement strategy. It is apparent that with form postponement, there is always enough inventory stocked due to the

demand forecasting strategies to meet the customers' orders. Forecasting ensures that possible future demand shifts are considered and relevant strategies are implemented to avoid supply disruptions (Lysons & Farrington, 2020). Usually, the first phase of form postponement leads to a build-up of adequate inventory, which in most cases leverages supply redundancy (Prataviera et al., 2020). The redundancy strategy advocates for the maintenance of spare stock to cater for demand shocks (Christopher, 2020). The postponement strategy has been successfully applied in several industries, such as the home appliances industry.

The study has demonstrated that form postponement leads to an improved order fill rate. The attainment of a high order fill rate is attributed to the business's potential to produce according to customers' requirements (Larsen & Thorstenson, 2012). It is a common cause that patrons have varied needs concerning culinary services (Namkung & Jang, 2007). Demand forecasting may be a mammoth task in most restaurant businesses if the same patrons can vary their needs across different days. This makes lean production problematic when it comes to restaurant services.

In most cases, a lean production system results in a narrow product line that may not cater for the varied needs of a diverse culinary customer base. As a result, most restaurants experience back or unfulfilled orders (Lysons & Farrington, 2020). In order to avoid unfulfilled orders, food preparation should be delayed until customers' orders are received. However, production can take place using the generic product version until product differentiation becomes necessary (Bech et al., 2018). That way, order fill rates may be achieved while at the same time achieving the acceptable order fulfilment duration.

Usually, when patrons visit a restaurant, the objective is to deal with the immediate pangs of hunger. It therefore means that restaurateurs should strive to develop innovative ways of reducing the duration of order fulfilment. One such method is to practice lean management, where the production system is made-to-stock (Jafari et al., 2021). This method relies mostly on strong forecasting techniques (Chopra et al., 2018). However, with most restaurant services, this method needs to be modified to work well because the needs of the restaurant patrons vary widely. That is when the postponement strategy comes in. Postponement combines the best lean production system up to the decoupling point and then accomplishes the production process using the agile production system (Prataviera et al., 2020). Thus, the stock, which in the case of restaurant businesses is menus, is kept in a state of semi-finished goods. Then, the production process will be completed upon receipt of a definite customer order.

Serving customers with inaccurate orders is a grave practice in the restaurant industry. It does not only cost much money in terms of lost revenue through having to render the service again, but a wrongly delivered order may be thrown into a bin in full view of the other patrons. The other patrons who see a rejected order are likely not to be privy to the reasons for such an act but would not stop speculating.

Some of the speculations may be image tarnishing (Kotler & Keller, 2016), such as suggesting that the food was badly prepared, the restaurant used stale ingredients, failed to mix the ingredients properly, or used unhygienic food preparation methods. Moreover, supplying patrons with inaccurate orders may result in health consequences. There are certain foods that some patrons are not allowed to consume for health reasons. Consuming prohibited foods may end up causing serious health issues that may result in some patrons getting ill or suing the defaulting restaurant businesses (Fuster et al., 2021). The practice of form postponement reduces the incidences of serving inaccurate orders since food preparation is done in accordance with the confirmed orders from the individual patrons.

Form postponement has proved to be a necessary strategy for attaining the key order fulfilment metrics of order fill rate, order fill time, and order fill accuracy. Logically, patrons are interested in attaining all these metrics within acceptable parameters. For instance, when the order fill rate is attained, it must be attained within the expected time frame and with high precision. It seems that postponement can achieve all three metrics. Thus, restaurateurs are advised to invest in appropriate equipment and systems that enable them to practice from postponement to the levels that match the needs of their customer bases.

6. MANAGERIAL IMPLICATIONS

The fact that form postponement is related to improved order fulfilment metrics makes it imperative for businesses to implement it with earnestness. The customers in the contemporary business environment are so diverse in terms of their needs and preferences that serving them with a standardised product or service churned from a lean production system is no longer feasible. The implications are that businesses must invest in versatile equipment to produce differentiated products. That way, the entire production system will be conditioned to be in a state of readiness to meet the varied needs of different customers without incurring extraordinary costs.

Furthermore, the beneficial impact of postponement also necessitates a strategic reevaluation of supply chain operations and customer relationship management. Specifically, businesses should consider the integration of advanced technologies and data analytics to dynamically adjust their operations and supply chains in real-time, catering to fluctuating customer demands efficiently. This adaptation not only ensures higher satisfaction rates among a diverse customer base but also enhances competitive advantage in a rapidly evolving market landscape. Moreover, the emphasis on form postponement underscores the importance of fostering a culture of flexibility and responsiveness within organisations. Training programs aimed at developing skills in agile management and responsive decision-making should become a staple, ensuring that the workforce is well-equipped to implement these strategic shifts. Implementing these

strategies will allow businesses to navigate the complexities of modern consumer markets with greater agility and precision, thereby securing a robust position in the industry.

7. LIMITATIONS AND FUTURE RESEARCH AGENDA

The study was done using a convenience sample. A convenience sample produces results that may be difficult to generalise to a population but can still be generalised to a theory (Saunders et al., 2024). Therefore, the results of this study were useful in strengthening the idea that form postponement is a solution to meeting several order fulfilment metrics. However, at the moment, the results cannot be generalised to the population from which the sample was drawn. Thus, future researchers must strive to compile a complete sampling frame for the restaurant business in Harare or whatever intended population and then produce generalisable results.

Order fulfilment metrics are also a function of variables such as vendor-managed inventory, internal marketing practices, and the business operating environment. Therefore, the fact that these variables were not assessed may mean that this study may lack higher levels of internal validity. Future researchers are therefore encouraged to assess all the potential variables that affect the attainment of excellent order fulfilment metrics. In future studies, the researchers may use factorial MANOVA or factorial MANCOVA, which are statistical tools designed to cater for multiple independent variables while eliminating the confounding effects of the other independent variables.

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