

**SUPPLY CHAIN MANAGEMENT**  
**FINAL PAPER**

*Supply Chain Assessment of Shake Shack with  
Improvement Recommendations*

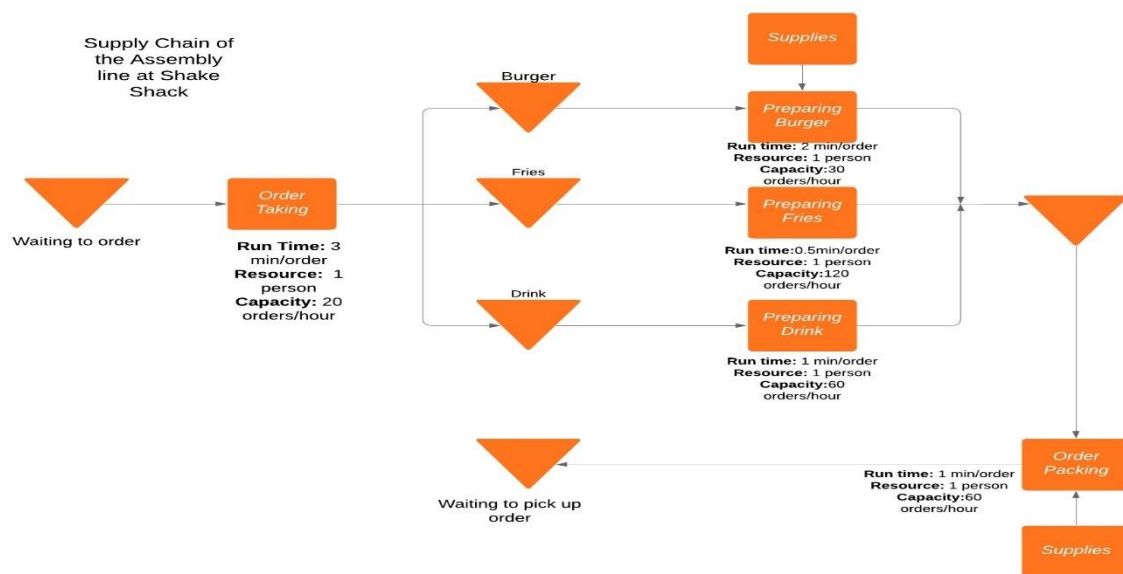
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Shake Shack, which is one of the most popular fast food chains predominant in the east coast of the United States, based in New York City, was started in the year 2001. The enormous success of the fast food chain is attributed towards the successful supply chain management of the company which paved way to its operational 249 locations around the world from a hot dog cart in 2001. However, the company being a fast food joint, due to volatility in the market, competitors, processing time and capacity constraints there exists a necessity to improve and tweak specific areas of the supply chain. Hence, we chose to analyse various aspects of the supply chain of Shake shack's assembly line and recommend potential solutions to alleviate the bottlenecks.

### Assessment of Current State Performance

The supply chain that is the focus of our analysis is the “Order Assembly Line” at the Shake Shack restaurant in Downtown, Brooklyn which encompasses the actions and processes that take place from when an order is placed to when the order is picked up. The specified customer is Vivek placing a single order of a burger, fries and a drink.

The metric that the customer uses to asses satisfaction is **minutes/order** i.e. how many minutes it takes to process one order. The lead time is 10 minutes/order.



**Figure (1) Supply Chain Model of Shake Shack**

The current customer expectation is to get their order within the expected lead time of 8-15 mins. As it is a fast food restaurant, customers are not flexible with their lead times as they want their order processed quickly or they can just go to another restaurant.

The performance gap that we identified in the supply chain is that the number of orders processed in a day (240 orders) is very less when compared to the customer demand (700 orders). This is referenced in the value stream map in Figure (2).

### Assessment of Supply Chain Process Design

The core activities of the supply chain are Order Taking (order is placed), preparation of the items in the order (Preparing Burger, Preparing Fries and Preparing Drink) and Order Packing (order is packed for pickup) as shown in Figure (1).

The value stream map in Figure (2) tells us that 240 orders can be processed in a day (i.e. capacity of Order Taking). Currently 360 orders of burgers, 1,440 orders of fries and 720 orders of drinks can be prepared in a day. The customer demand is 700 orders per day, but only 240 are being processed, meaning there is a bottleneck here. The number of burgers being processed is also less compared to the other Preparation activities which tells us that there is a bottleneck at the burger preparation too.

For process improvement, we recommend Shake Shack to first conduct cross training in their staff and optimize their manpower. Right now, we have one staff member working on each activity. A staff member can be cross trained to handle multiple activities like preparing fries and drinks, which do not require so much manpower. This gives the restaurant additional resources to allocate more counters and kiosks to process more orders. Assigning additional staff to process the burgers can help bring up the number of burgers that can be processed in a day. We also recommend they

conduct demand forecasting by researching frequently ordered items and having them ready to go. In this way, during peak hours, they will be ready to handle excess demand if required. Shake Sauce is very famous and almost every customer asks for it to be added to their burger. This adds an additional step in the process and increases lead time. Why not let the customers have access to the sauce and let them add it themselves? This not only decreases the load on the supply chain, it also gives them a positive image in the eyes of the customer.

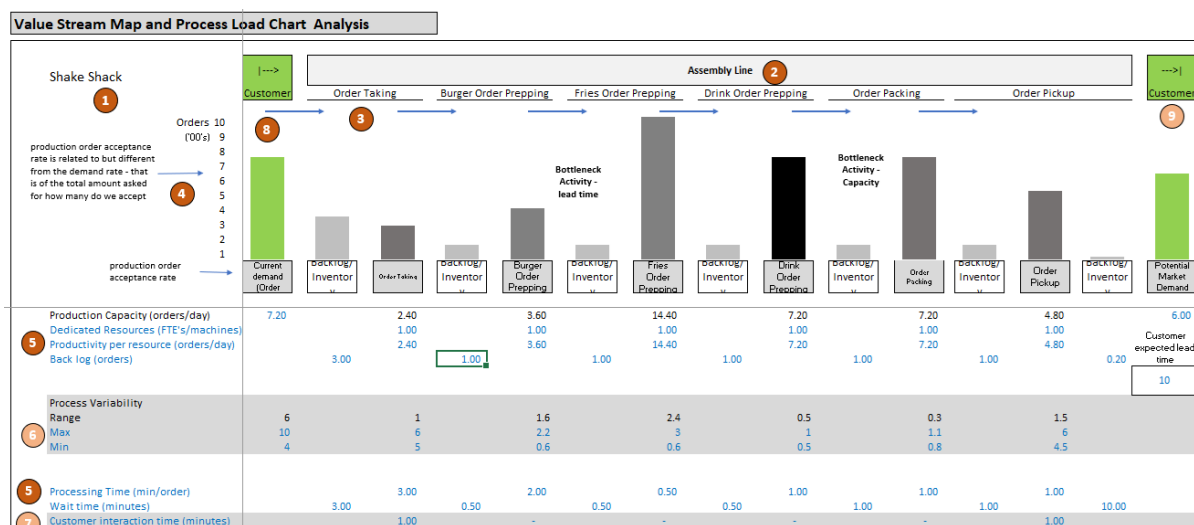


Figure (2) Value Stream Map

### Assessment of Supply Chain Management Ability

Figure (3) Price Lead Time Sensitivity Table tells us that fries has the highest Net Value Contribution/ Effort Ratio, which means fries take the least amount of effort to prepare while having a high Net Value Contribution to the order. Hence, Shake Shack should focus on making fries a staple item with each order.

Customer	Product	Capacity Management Priority				Net Value Contribution		Customer Price/Lead Time Sensitivity			
		Processing Priority	Net Value Contribution / Effort Ratio	Net Value Contribution (\$/order)	Effort (mins)	Value/Price	Production Cost	Price Target	Price Range	Lead Time Target	Lead Time Range
Customer 1	Burger	2	2.65	\$ 5.29	2	\$ 5.29	\$ 4.06	\$5.29	\$4.29-\$6.29	10 mins	8-15 mins
	Fries	1	5.98	\$ 2.99	0.5	\$ 2.99	\$ 2.30	\$2.99	\$1.99-\$3.99	10 mins	8-15 mins
	Drinks	3	2.30	\$ 2.30	1	\$ 2.30	\$ 1.76	\$2.30	\$1.30-\$3.30	10 mins	8-15 mins

Figure (3) Price Lead Time Sensitivity Table

Shake Shack is famous for its fresh Grade A angus beef meat and the relation with their meat supplier Pat LaFrieda is strong. By doing free advertising for Pat LaFrieda, they provide free exposure improving their brand image. Shake Shack can also invest in their supplier and integrate them into their supply chain like Crocs did with their manufacturers. This gives them more flexibility with their meat supply with increase or decrease in demand.

### Assessment of Supply Chain Growth Strategy

Shake Shack sells in the fast food restaurant industry and their ecosystem consists of Suppliers, Customers, Competitors and other complimentary businesses that work alongside them (Uber Eats).

The market Shake Shack sells in deals mainly with meat-based products. All their industry standards revolve around these products and they are missing out serving their vegetarian customers. With an influx of vegetarian immigrants and workers in the country, Shake Shack should invest in the development of vegetarian options and lead the standard for these products. Introducing vegetarian options like veggie patties will help improve their customer relations.

The pros of being a follower is you do not have to take the risks. Some other company can introduce a new product and you can sit back and observe their success and failure. The con to this would be that you do not lead the standards for said product and thus, you do not reap all the benefits. All the benefits are reaped by the leader in the industry and

although the risk is high, so is the reward. We think Shake Shack is already a leader in the fast food industry and by taking the lead in introducing vegetarian products, they can become the kings in the industry.

The current environment with the COVID-19 virus can also prove advantageous to them. By introducing exciting offers like a Do It Yourself (DIY) Home-Burger kit, they can improve their brand image and come out of this situation with a better brand name than before.

### ***Summarizing opportunities and how to implement them***

There are multiple opportunities for Shake Shack to improve the efficiency of their Downtown, Brooklyn branch such as-

1. Optimize Manpower- Conduct cross training for employees to perform efficient allocation of staff to the various activities in the supply chain. Have one staff member deal with the preparation of the fries and the drinks with additional staff members dealing with order taking and preparation of the burgers. This allows in saving of resources and will help to decrease lead time.
2. Demand Forecasting- Collect data on popular products and have them ready to go during peak hours to satisfy as many customers as possible.
3. Let customers add the sauce- Allowing customers to add the Shake Sauce not only decreases effort and load on the supply chain, it gives positivity to the brand name.
4. Remove Bottlenecks- Number of orders being processed in a day and number of burgers prepared in a day needs to be improved to match the demand for Shake Shack. This can be done by cross training and allocating adequate resources.
5. Veggie patties- Cater to the vegetarian customers by adding good quality vegetarian products at attractive prices.
6. Fries- Fries have the highest Net Value Contribution by Effort ratio. Make fries a product that is included in every order by adding new varieties of fries and having offers that promote fries.
7. Supplier Relations- Build supplier relations. This can be done by investing and integrating the supplier to their supply chain. Helps to have a flexible and good relation in times of demand increase or decrease.
8. COVID-19 Environment- Try to improve the brand image in this environment by introducing DIY kits that customers can order and enjoy at home.