BMC Expansion

Team CheckItOut

Business Opportunity

We strive to deliver a fast automatic conveyor based checkout system and inventory management system using AI and machine learning algorithms, including but not limited to computer vision, sensor fusion and deep learning, creating an extensive database with analytics and insights on consumer behavior, to high-end supermarkets and hypermarkets in Tier-1 cities, which can streamline the otherwise tedious and lengthy checkout system and make it more efficient, using payment methods with blockchain technology, effectively integrating the e-commerce and physical stores retail experience, thus reducing the cost incurred by the store in various channels and improving revenue through data insights.

Customer Relations

High-end supermarkets and Hypermarkets in Tier-1 cities, with well-equipped physical stores and working websites, would be our main potential partners. We aim to use IIT Bombay's extensive alumni network to get in contact with these stores and pitch our services to them. We also plan to approach the appropriate trade associations pertaining to our customer base and expect to create a good client base through word of mouth.
We also plan to offer a monthly review-based system to our customers, aiming to customize our services according to their needs.

Customer Segments

Customer Profile

We focus on capturing retail outlets that can adopt the automated checkout system. These include the supermarket and hypermarket chains in the tier 1&2 cities. The problem these stores face is that the checkout lines are sometimes insanely long and the cashiers are inefficient in clearing out the queues. The automated checkout system provides a quick and reliable solution to these stores and hence they are our primary customers. Here, the goal is to reduce costs by saving the wages and salaries paid to the staff associated with checkout at the store. Moreover, the robust inventory management, accounting, and payments set the store apart from its competitors.

Consumer Profile

The end consumers of the service are the people who purchase at the stores and use the checkout systems. Their need is to reduce the time spent on checkout lines and save their time and energy. The seamless checkout process satisfies this segment extensively, resulting in a positive feedback loop that impacts the growth of the stores which employ our technology.

Target Market

The Total Addressable Market, i.e total market for self-checkout systems which comprises of the supermarkets, hypermarkets and small stores around the world is estimated to be around $3.5 Billion in 2021 and the sector is forecasted to have a growth rate of around 13.3% (CAGR) from 2020 to 2027. The total revenue forecast is estimated to be $7.8 Billion by 2027.

The Serviceable Addressable Market, which comprises the supermarkets and hypermarkets in tier 1 &2 cities in India in our case is estimated to be around $1-2 Billion by 2027, which we plan to capture in the near future.

We have a lot of growth potential in this sector as the market in our region is still in its infancy, to support this statement, here is the chart that depicts the market share of self-checkout systems.

Figure 1: Global Self-checkout System Market Share (%), in terms of Value, By Region, 2019

Source : https://www.coherentmarketinsights.com/market-insight/self-checkout-system-market-4366
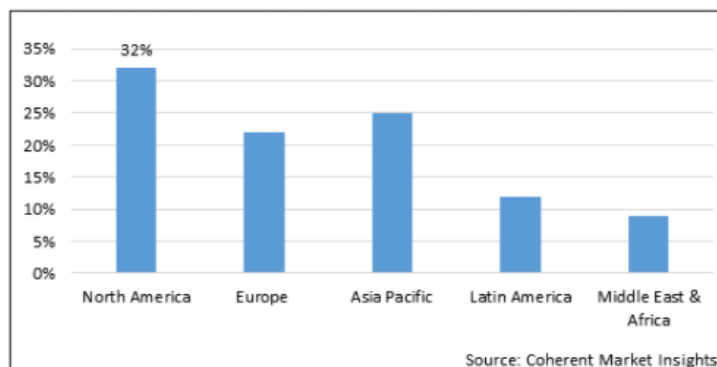
Cost Structure

The software cost depends on the technology evaluation in the R & D stage of production. This charge would vary significantly based on the inventory and customer traffic of the store. The conveyor belt system would be equipped with Sensor fusion cameras for logging and bill generation, which would include manufacturing costs. Software and algorithm development for data analytics would also be borne in the inception cost. Apart from that, inventory maintenance,

sales information, customer profile, etc would be maintained on an online Database system, providing information to each customer.

Revenue Streams

The initial source of revenue is the one-time setup and installation charges of the system hardwares like conveyor belts with integrated software for product recognition and bill generation.

Since the system totally eliminates the read-bar-code and check-in of a consumer system, we provide the customer with the data analytics and insights for the business, as a database of its sales, customer profile, inventory maintenance etc. A fee would be levied upon the customer for the above-mentioned functionalities.

An Annual Maintenance Contract is to be implemented with the customer, covering the software and hardware related repairs and maintenance. The AMC would include all software and hardware provided to the customer, however, would limit the scope of any further personalization of the app provided.

Key Partners

Our seamless checkout system works on the idea of providing the utmost customer satisfaction using AI, Sensor Technology to automate the checkout process in Super Stores.

The store owners and staff will also be our partners required for a successful execution of our full-fledged automated checkout system in their corresponding super stores.

We need high precision camera manufacturers and partners for their manufacturing, assembly and the successful installation of these systems. We also need to partner up with companies offering Sensor Technology. Needless to say these two are key to the success of our product. To inventory for the items in the store and to manage many customer accounts simultaneously, with constant updation and deletion we need an efficient live Database Management/Hosting and storing service.

For payment through our app we need trusted payment gateway partners like Paytm, Google pay etc. so that we can completely automate the process and provide top-notch customer experience.

Channels

Our main channel is to sell hardware required by our checkout system and install directly in store sites.
We can make an efficient interactive website for customers to get an insight of our product. Website contains positive feedback and testimonials from customers who are already using our product and increasing their revenue.
Chatbots can be used for self-customer care in case of a customer facing some minor issues. Otherwise they can reach out to us through phone calls in case they face a major issue with the checkout system.
We can use social media marketing strategies to increase our product awareness to gain more customers.
Further we give incentives and discounts on our subscription plans to the stores to encourage them to recommend the product to more customers hence promoting the growth through "word of mouth".

Key Activities and Resources

Our entire business is based on the AI system integrated with the several cameras which identifies the products placed on the conveyor belt. The development, deployment and maintenance of this highly accurate AI model and the conveyor machine is one of the most important activities we need to do. The AI algorithm/model will be constantly upgraded and updated. It is the single most important asset for us as a company which enables us to make the fast and hassle-free billing possible. The integration of the systems with card based payment methods and online payment methods must also be done to ensure a smooth, fast and contactless billing experience for the consumer.

Manufacturing the physical machine and installing it on the shops is also done.
Apart from this inventory management to eliminate the need for third party software being used, thus reducing expense and improving the overall service offered. Consumer data analytics based on the consumers' buying preferences and patterns is done by our company for a fee and helps provide shops with insights about the products and items which they must buy to increase revenue and profits. Since data analytics is emerging fast in India, we could pioneer the use of it in the high-end retail industry right on the edge, where the industry meets the consumers.

Value Proposition

The need for a seamless checkout process and a system to facilitate the same comes from the idea that on an average, the current physical checkout system takes about 15 mins and the waiting time varies from 30-45 minutes based on the rush that day. Our seamless checkout system resolves this issue of waiting in long queues during checkout from malls, supermarkets and other stores.

#A convenient and easy method to shop which encourages consumers to visit stores, increasing revenues for the stores

"Check it Out" provides value to both the consumers in terms of their experience and saves them a lot of time, and for the businesses (supermarkets and hypermarkets) in terms of reducing costs. Customers save a lot of time that would have otherwise been spent on waiting in long lines and the clumsy checkout process. This would have a wider impact. For example, if a mall has a theatre in it and is equipped by our checkout system, consumers would be more likely to go to that particular mall for the seamless experience offered and to save their time, this not only benefits stores in malls but also benefits the theatre, therefore increasing revenue for the theatre as well as for that mall.

#Competition with online shopping stores

A person will want to go to supermarkets with his/her friends and families not only for the sole reason of shopping but to spend time and enjoy. People find the offline shopping experience more gratifying since the sense of touch and vision is used to immerse them and give a more wholesome experience rather than sitting at home and scrolling on the phone to buy things. After the Covid pandemic and lockdown, people are seen coming out and spending time outside in most of the urban and rural centres which is clear proof that people want to go out and not just be confined in their home. Further e-commerce comprises of 8-9% of the retail market in India today which is still small.

So, offline shopping is not going anywhere. It will be there along with online shopping and hence our automated billing system will not be outdated in near-future.

#Stores would no longer have to hire staff and pay salaries to the cashiers,billing staff and bagboys. Stores don't need software,machines for billing and inventory management

Expanding on the cost-saving, our product comes with a great opportunity to cut costs spent otherwise on staff salaries to the cashiers, billing staff, bagboys and replace it with a way more efficient and foolproof system for checkout and payment. This further saves the cost of billing machines and business management software clients/ payroll management clients. Note that the automation provided eliminates all the scope for marginal human errors which are ubiquitous otherwise.

By integration of Machine Learning and Artificial Intelligence we also provide customised recommendations that learns from a user's previous buys and gives recommendations based on Insightful customer analytics . We aim to provide them with various other functionalities like a "Find " feature in the application that can be used to easily locate any particular product which one wishes to buy.It can find and locate the nearest store where the product is sold and available. This provides the user with a personalized experience while surfing through the supermarket like never before.

#For dark stores,the delivery times are decreased thus increasing revenue

In times of rise of e-commerce, the companies compete on the delivery times being offered. The faster the better. Consumers need the quickest possible delivery times when it comes to goods and commodities. We aim to extend our product to dark stores where we aim to provide a similar (if not identical) system to update inventory each time a delivery official checks out a product from a dark store. This eliminates the need for existing procedures and reduces the delivery times substantially.

Team CheckItOut
- Atul Verma - 19B090004
- Ayushman Choudhary - 200020039
- Balasubramanian - 200050103
- Mugdha Bajpayee - 200100099
- Rangarajan R Iyengar - 214278002
- Vidit Goel - 200051056
- Vishruth N - 200010088