

Capitalizing Technology in Indian Food Industry- A Study on the implementation of IoT & AI in India

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Abstract

The food industry in India is one of the five largest industrial sectors in terms of production, processing and consumption and exports. The Indian food industry is ranked as the 6th largest and contributes to an overall of 70 percent of total sales of the food. The overall value of the food industry in India is estimated to value around 1.3 billion dollars as of 2018 and is growing at a steady phase. Internet of Things (IoT) is increasing the understanding capability of an existing used technology using measurement and capacity. All IoT consists of Artificial Intelligence. Artificial Intelligence is the latest technology to enable the capability of the available service. This is done only after the analysis and the final product is the conclusion to the available technology improvement. It creates a framework for a recurring task and enables efficient use of technology. This research aims to understand the existing use of technology in the food industry in India. The study also helps to understand the various latest technologies used in different countries. To extrapolate the suggestive techniques for optimum utilization of Technology. The use of right technology at the right place in the right time enables to handle 'Food Sustainability' from connecting to the farmers to the consumers.

Key Words: Internet of Things, Technology, Indian Food Industry, Artificial Intelligence

I. INTRODUCTION

Revolutionizing innovation turned into the main thrust behind numerous organizations in long-standing ventures over the previous decade. While AirBnB shook up the hospitality business, versatile applications like Uber and Lyft overwhelmed taxi organizations. A few businesses have been slower than others to encounter the impact of such disruptions—the sustenance and create industry being one of them—until as of late. Innovation and advancement are beginning to upset the create business, and organizations and shoppers alike are beginning to tune in. (Jenny Splitter, 2018)

A few movements and shifts are self-evident. As more individuals report their feasting encounters on Instagram, for instance, some expert and brilliant chefs are making dishes gone for fulfilling both the gastronomic sense of taste and the visual stylish. (Forbes, 2018)

Hypersensitivities and restrictions aside, the food business is one of the biggest and most central endeavours on the planet. Considering the fact that, everyone needs food for survival, and the vast majority of us like to appreciate a decent supper. The sustenance business envelops everything from makers and delivery organizations, to truckers, food merchants, and eateries. Therefore, it bodes well that the business would exploit inside and out research and huge information administrations to more readily comprehend their purchasers, increment productivity, and produce new imaginative formulas in mass amounts. (Lyndsey Gilpin, 2014)

Despite the fact that the world delivers enough sustenance to sustain double the world's present population, foodwastage is incidentally behind the billions of individuals who are malnourished do exists parallely.(CSR Journal, 2018)

II. OBJECTIVES

1. To understand the current trend of technology used in Food Industry in India
2. To analyse potential changes and paradigm shifts in the food industry with invention of technology
3. To extrapolate the suggestive techniques for optimum utilization of Technology

III. METHODOLOGY

The study was conducted in descriptive study and survey method. The data was collected from many food bloggers and food end users. The questionnaires were sent and the responses were collected. The bloggers from different states such as Chennai, Delhi, Mumbai, Bengaluru, Pune, Hyderabad and Kolkata were collected with a sample size of 37. Secondary data was collected from newspapers, magazines, journals and websites.

IV. REVIEW OF LITERATURE

Imagine opening fridge in 2030. Maybe that pork came from a single pig cell, grown into "clean meat" in a lab. Perhaps that leftover rice was gene-edited with CRISPR-Cas9 or the lettuce was produced with a personal "food computer" in a city building, through a data recipe. Maybe the sustainability of the palm oil in your margarine was monitored through satellites with advanced imaging power or the woman who grew your eggplants was paid through via block chain. Perhaps the fridge itself will be "smart", sending you notifications to eat the cheese before it goes green. The buzz words 'cooperate to compete' symbolize a paradigm shift from transactions to relationships in business-to-consumer (BTC) and business to-business (BTB) markets (Sheth & Parvatiyar, 1995).

The giant Microsoft PixelSense-style touchscreen table in Pizza Hut Dubai, looks like enabler where the guests to order a custom-made pizza. The table can even perceive a client by associating with their smart phone and enables them to pay immediately with already saved credit and debit card subtleties. (Time, 2014)

Inamo Soho- Londonwelcomes the future dining experiences with the most interactive ordering system beamed to the tables. Place the order for the food, pick your virtual tablecloth, see the gourmet experts at work on 'culinary specialist cam', and

substantially more, all through the intelligent table surface. A most loved with burger joints of all ages is now the choice to play warships while trusting that the food will arrive.

Spyce – a restaurant that was started by MIT students that serves food in 3 minutes it requires only 20 Sq.ft. This comprises of stovetop, refrigerator and 7 robot chefs and the quality is check with the myriad of sensors. Here the customer places the food order through the touchscreen with machine or smartphone. Once the robot get signal, they collect ingredients and transports them into automatic woks. They are cooked as per the requirement and cooked at 450° F. Once done, it is transferred onto a plate and empty wok is rotated to the washing sink through conveyor belts. (Surfaces Reporter, 2018)

V. TECHNOLOGY INTO FOOD INDUSTRY

There are four major factors that revolve around this Smart Food Production or process. It majorly comprises of mobile communication, artificial intelligence, internet of things and cloud computing (Fig 1). Mobile communication means where the wireless communication is introduced into the pockets of every individual. Artificial Intelligence means optimally utilizing the system to understand the repetitive nature of work and perform on its own. IoT is the machine learning and teaching machine on how things are done and use it potentially. The cloud computing is the storage of data that are required for the better and optimum usage of all the various aspects of information from the existing ideas. This helps to create a smart food production that eventually lead to ‘Sustainable Food’ for better world and to fight various issues.

There are many labs that enables easy use of technology in the right way such as

- Dishq – This enables a person to search the nearest availability of food with his particular personalisation
- Euphotic Labs – Monotonous laborious cooking turned into automated cooking gadgets
- Gulpie – Enables to create a list that shows the dietary requirement as per the person’s body parameters and the restaurant that meet those parameters (David George, 2017)

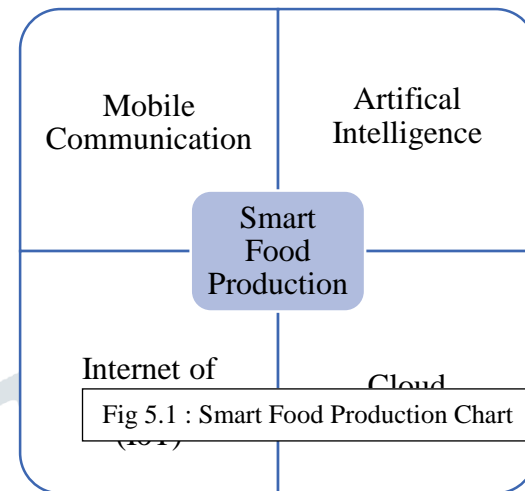


Fig 5.1 : Smart Food Production Chart

VI. DATA ANALYSIS

The various food bloggers and the critics who have continuous assessment of the every new trends coming up in the food industry and are the real time interactions with the potential guests. These bloggers share their experiences with the guests who go by the non-paid commercial choices. The responses were collected from 37 bloggers.

The impact of technology on the food industry in the millennial age was questioned and majority of the foodies i.e. 78% percent say yes whereas 16% say no and 6% say it may be (Fig 2). When asked does this technology enable the consumers to view food sensibly through technology and use them rightfully, they majority of them about 54% say more likely, 30% percent say less likely and the rest say unlikely to understand the need.

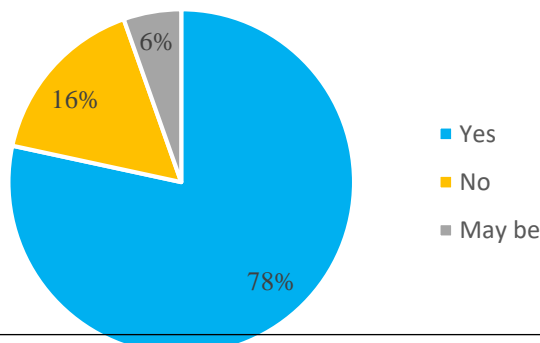


Fig 6.1 : The impact of technology on food

With the growth in technology when the bloggers were asked if their attention moved from the food to technology used, majority of them i.e. 51% said no but a good share of the bloggers about 35% said it does distract the guests and the rest say it is unpredictable. When asked about the areas of consideration for inculcating technology, 15 of them say food production, 29 of them say stewarding, marketing as well as quality and security. 31 of them say billing and 27 of them say technology can improve standardisation. When asked about the end results of the automated food processes, majority of the gourmand feels that food might lose its human touch that is required at manier places. It also had a good impact such as to reduce manual human labour as suggested by 25 critics. The food sustainability and increase in time of production can also be considered as a part and package of the business.

VII. FINDINGS

‘Smart Food Business’ is an integration of sensors and stimulators to enable the gastrome to overall experience that bets to differ from a nominal ones.

Tanoshii Trail is the first automated restaurant in Delhi that has food-ordering system from tabulated booths and the food arrives in the conveyor belt. They are popular for their Asian and Pan-Asian cuisine. A similar restaurant was also started in Chennai called Aiwo which was shut down and the reason remains enigma. (Nitya, 2014)

Achayam Foodbox Chennai, established by Satish Chamylumani, is a robotized eatery that serves everything from light tiffin to supper combo packs from eminent eateries inside 90 seconds. Gone for serving individuals on the go, a city-based business visionary has set up the main mechanized eatery that serves nourishment from different eateries inside 90 seconds. (NDTV, 2014)

Robot Chennai, the white and blue dressed robots, holding the ordered food says “Your food is ready, take it yourself and have a nice day”. Without a doubt, the servers work the robots and control their developments utilizing an application. Long magnet strips on the floor control the machines around the eatery.

1. Food delivery platforms

Swiggy has attained its position as the ‘single largest in India’s food technology sector to date’. Swiggy is one wide example on how the technology has become the backbone of food industry in the current scenario. It has partnered with over 50,000 restaurant in across 50 cities in India. (News18, 2018)

2. Farm to Table
The initiative where the locally farm grown products are directly procured processed and served to the guest in the form of food. This enables for the growth and upliftment of the local people as well as promote the local food to the localities as well the outsiders
3. Food and its Economic Connect
Food wastage handicaps a nation's economy to a degree that the greater part is as citizens we are ignorant. A few estimates that the administration needs to take incorporate containing wastage in transportation, enhance storerooms, food handling additionally should be accelerated so food is spared and squandered less to sustain more. (Kernel Sphere, 2015)

VIII. SUGGESTION

1. Food wastage tracking
Indian food wastage is equal the consumption of food in United Kingdom (CSR Journal, 2018). With the assistance of online networking and new innovation, this number can be radically decreased. Steps are being made with applications and web stages to put the food to great use.
2. Universal Recipe Bank
There are recipes, cuisines and food that are cultural and definitely need to be preserved for the upcoming generations. The real food lovers away from home are in search of varieties of food that is available in their part of the country. Bringing those recipes closer and preserving it with hand of technology is definitely the need of the hour
3. Zero Hunger Drive
Sustainability works inside both creating and created nations. Both have their own difficulties, however technology can help. There will be nine billion individuals on this planet by 2050 gauges state we have to twofold our food production by 2030. Furthermore, the UN worldwide objective number two targets zero craving by 2030; this inside an obliged domain.

IX. CONCLUSION

With the clock started ticking on the world's ambitious goals to end hunger by 2030(Leah Samberg, 2018). The test is to widen access to these devices, and to guarantee that they address the issues of the ranchers who use them. The effect and accomplishment of these devices and projects ought to be observed and assessed, with incapable methodologies being enhanced or supplanted. With the development and accessibility of the Internet of Things (IoT), the food business is in line for some significant moves particularly with regards to patterns in food safety. The customers are also moving towards a powerful medium where experiences based products are more in demand. With the technology into the scenario of food technology, the standards and whole of the process should be modernised, maintained and managed rightly.

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