

## “The Role and Importance of Digitalization in Hospitality Sector to Ease Function”

Dr.Abin George<sup>1</sup>, Dr. Ramesh Kumar M<sup>2</sup>, Mr. Rakesh<sup>3</sup>, Mr. Asokan<sup>4</sup>

Technical Officer-KTMD<sup>1</sup>, Deputy Head- ACD<sup>2</sup>, Deputy Head- ICT<sup>3</sup>, Senior Principle Officer- ICT<sup>4</sup>  
CSIR- National Aerospace Laboratories, Bangalore

**Abstract:** The study aims to determine the factors to propel digitalisation in the hospitality sector of an Aerospace research and development organization. The researchers explain how digitalisation improves employees' performance and support in time management. “Digitalisation has left no segment of the travel ecosystem untouched”. A technical team was constituted with experts to study and analyze the implications of implementation. A Research gap was identified due to the lack of information available especially in the hospitality sector of government organizations. The primary data is collected through observations, field surveys, and secondary data is collected through web sources, government reports, published journals, etc. The Government of India is promoting cashless transactions and digitalization in all sectors. The implication of the study will help the policymakers and managements to apply, adopt such digitalization in various fields of hospitality, public relations, information counters, the food industry, and the tourism sector.

**Keywords:** Digitalisation, Hospitality, Online Booking System, Cashless, Digital Technology

### I. Introduction

Wastage of food is a national wastage especially when it is in the prevailing situation of the covid surge. Digitalisation helps to take stock of bookings and ensure zero percentage wastage of food. In most organizations, the quality and quantity of items will be prescribed and resulting in a satisfactory experience rather than waiting in the queue of counters without being sure about on availability of food and services.

According to DTI's- The World Economic Forum's Digital Transformation Initiative, digitalization in aviation, travel, and tourism is anticipated to generate a business worth up to \$ 305 billion in value for the industry through increased profitability by 2016-2025, by shifting profitability from traditional players to new competitors, resulting in \$ 700 billion in benefits for customers and society as a whole.

## II. Digitalization

The ability to extract data and analytics is a significant benefit of digitalization. None of the customers in the modern era like to stay in queues for their bookings. Most of them expect personalized service and experiences. Companies are progressively enhancing services across the customer journey by acquiring personal data from customers and learning more about their behavioral patterns.

In the modern world of technology, reservations are confirmed in fractions of a second and an entire trip can be planned with just a few taps of the finger, life in the "golden age of travel and hospitality" is hard to imagine. The growth and contribution of digital technology have mainly occurred in 5 phases during the last 5 decades, which has been seen since the 1980s when the initiative was taken to improve the customer infrastructure improvement experience with support digital. The online reservation system was introduced in the 1990s so that users can get all the information, such as availability, prices, service, etc., directly on their fingerprint. The world saw great changes in digital technology in the period of 2000 when the rapid proliferation of WIFI and powerful smartphones with entertainment and technology was widely adopted. In this day and age, the digitization of hospitality and services is a must for technology enthusiasts as it is heavily influenced by online reservation systems and services.

## III. Review of Literature

The literature study has been carried out to find the relevant details on the current study. Even though there is a scarcity of studies on the current topic, especially in the field of digitalization in the hospitality sector.

Morrone (2021) has reported that other aspects of digitization could include the use of information and communication technologies (ICT) limited only in the areas of communication and marketing, but also in other fields like production, sales, interactions with customers, and many other sectors. Ristova (2019) mentioned that digital technology would make users' lives easier while also increasing our demand for this insatiable lifestyle. With the advancement of automation and digitization, as well as the increasing technical affinity of guests, Ristova explained that touchpoints throughout the hospitality industry are engaging in new digital trends and smart technologies to make the customer journey as fluid and pleasant as possible. Parviainen (2017) reported that the entry of digital technologies into the operating environment causes significant changes for businesses. Parviainen proposes digitalization as a means of assisting the organization in defining its goals and analyzing its performance in relation to those goals.

## IV. Objectives

- 1) To check the adoption of Digitalisation in Industrial Cafeterias and Hospitality.
- 2) To check the accountability of one and all transactions.
- 3) To evaluate the adaptability of food auditing and standards.

## V. Research Gap

The research gap was observed after the review of literature is completed, especially regarding the implementation of digitalization of the Hospitality sector in Government organizations. An expert committee with technical members was constituted for implementing and adopting digitalisation. The research gap needed to be filled, so that to fulfill the efficacy of digitalisation is ensured. Primary and Secondary data are used to find the results of objectives. Primary Data for the current study was collected through observations, field surveys, interviews, and schedules. The secondary data was gathered through web sources, GOI reports, magazines, and journal articles.

The study is headed with grounded theory with questions of the following:

- 1) "What's going on with or via digitalization in the company?"
- 2) "What is the main problem, improvement target and how those are trying to be solved?"

## VI. Location and Area of the Study

The location and execution of the project have been conducted at CSIR-NAL, Bangalore in the 4 different canteens, catering outlets which are located on three campuses. National Aerospace Laboratories is a premier research and development organization and India's first and largest aerospace firm. Table No.1, shows the frequency of users visits, constraints, and the time involved for each booking.

**Table1. Frequency of Manual Bookings**

Types of Food Service	Manual Booking in No's	Frequency Of users visit
Breakfast Tea	300	300
Morning Breakfast	270	270
Thali Meals and Other Meals	400	400
Evening Tea & Coffee	310	310

**Installation of Canteen Management Booking System (CMBS):**The technical team members, civil, electrical, and networking have ensured all the prerequisites are ready before the installation of the Canteen Management Booking System. The CMBS mainly has two modules.

## CMBS- Operational processes

- 1) Frontend house- This is meant for the users to do the booking of meals and various available catering services. This module is available through KIOSK booking and Online booking through the Intranet of Organisation.
- 2) Backend house- This is generally meant for the back-end team, management, and contractors where they can provide the data for the available food with the choices of adding the new dishes and making any policy decisions. The daily consolidated reports of sales, the transaction for each location, etc. can get through this module. This is very helpful to forecast the production requirements and to standardize the menu and purchase, thereby ensuring food auditing and safety.

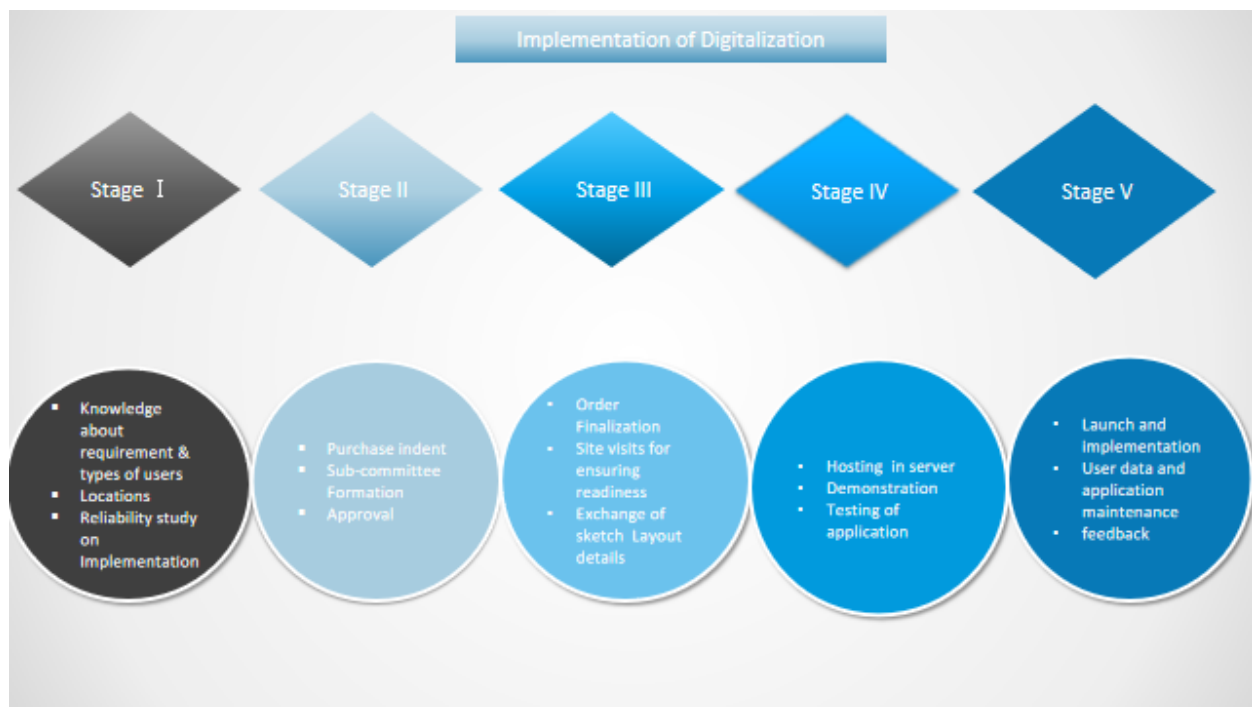
Sl. No.	Particulars		Technical Description	Quantity	Remarks
	Hardware	Software			
1	KIOSK MACHINES with TOUCH SCREEN	OS: Windows 10	CPU with i3 process 4 Gb ram 1 TB smart card reader supporting iso 14443a ABDB MIFARE 17-inch infrared touch screen display	5 Nos	Booking can be made through Kiosk
2	POS TERMINALS	OS: LINUX	Processor: arm 9 32 bit core cpu @ 400 mhz Memory: 128 Mb ram flash 256 Mb, micro sd card reader Display: 128 x 64-pixel graphic fstrnLCD with led backlight	9 Nos	For recharging and coupon printing
3	PRINTER		Font a 12 x 25 b 9 x 17 interface usb + uib Received data buffer 4 kb / 45 bytes	6 Nos	For thermal line print outs.
4	SERVER	Windows 2008 R2 Server 64 bit	Virtual processor with 2 core CPU, ram: 16 Gb, 300 Gb HDD	1 No	To host the database and web application
5	DATABASE	Microsoft SQL 2016 Server Software		1 No	To store and retrieve the data

**Table No.2 Technical Specification Chart**

## VII. Implications of the Study and its Applications

The study has given the results of benefits to promote and implement the digitalization of hospitality in the industry especially in its most important time of Covid-19 pandemic, epidemics, natural calamities where it is most needed to keep social distancing and minimize the direct in-person meets. The implications of the study help to implement the digital technology to facilitate the day-to-day operations and business management most efficiently in the following hospitality outlets other than the industrial Canteens.

- I. Cafeterias,
- II. Food Courts
- III. Snack bar
- IV. Guest House
- V. Tourism Counters
- VI. Travel operators desk
- VII. Booking Counters etc.
- VIII. Reception/ Information/ Public Relation desk



**Figure 1. Stages of Implementation**

## VIII. Conclusion

Digitization can be used for hospitality in the industry to increase customer understanding and service fitness. According to the latest government policies, the implementation of digital technology is mandatory, especially for governmental organizations and PSUs operating under

GOI. According to the research, this type of cashless online booking method can save a lot of time and also improve staff performance. The only option for hospitality in the industry to overcome the pandemic is through digital technology. Digitalization ensures and demonstrates the hygiene of buildings while also maintaining social distance, guest traceability, and other methods to ensure that people enjoy a safer meal. The Government of India is promoting the policy of digital and cashless modes of transactions in all sectors.

### Funding

The above research did not receive any grant from any of the funding agencies. The project execution and implementation fund was provided from CSIR- NAL

### Declaration of competing interest

None.

### Acknowledgments

We would like to express our sincere thanks to all the members of the canteen management committees and experts who have helped and supported to conduct of this study and execution.

### References:

- [1]. Morrone, D., Raimo, N., Tarulli, A., & Vitolla, F. (2021). Digitalisation in the hospitality industry: Motivations, effects and role of Covid-19. *International Journal of Digital Culture and Electronic Tourism*, 3(3-4), 257-270. <https://phys.org/news/2021-07-digitalisation-hotels-covid-pandemic.html>
- [2]. Parviainen, P., Tihinen, M., Kääriäinen, J., & Teppola, S. (2017). Tackling the digitalization challenge: how to benefit from digitalization in practice. *International journal of information systems and project management*, 5(1), 63-77.
- [3]. Vitolla, F., Morrone, D., Raimo, N., & Tarulli, A. (2021). Digitalisation in the hospitality industry: motivations, effects and role of Covid-19. *International Journal of Digital Culture and Electronic Tourism*, 1(1), 1. <https://doi.org/10.1504/ijdcet.2021.10035987>
- [4]. Chudnovskiy, A. D., Tsabolova, O. R., & Zhukova, M. A. (2021). Using the Voronova, O. V., & Khareva, V. A. (2020). Trends in development of technologies at hospitality business in the conditions of economy digitalization. *Scientific Bulletin of the Southern Institute of Management*, (4), 98–102. <https://doi.org/10.31775/2305-3100-2019-4-98-102>
- [5]. Sheresheva, M. Y., Savelyev, I. I., Nadzharyan, N. N., & Kudryavtsev, A. V. (2020). Digital Platforms in Hospitality Business. In *Lecture Notes in Networks and Systems* (Vol. 115, pp. 83–90). Springer. [https://doi.org/10.1007/978-3-030-40749-0\\_10](https://doi.org/10.1007/978-3-030-40749-0_10)

- [6]. Damnjanović, V., Lončarić, D., & Dlačić, J. (2020). Teaching case study: Digital marketing strategy of accor hotels: Shaping the future of hospitality. *Tourism and Hospitality Management*, 26(1), 233–244.
- [7]. Passah, D. R. S., & Kumar, A. (2019). Cashless Economy and Digitalization of Tourism & Hospitality Practices in India. *SSRN Electronic Journal*. <https://doi.org/10.2139/ssrn.3308586>
- [8]. Ristova, C., & Dimitrov, N. (2019). Digitalisation in the hospitality industry - trends that might shape the next stay of guests. *International Journal of Information, Business and Management*, 11(3), 144–154.
- [9]. Ristova, C., & Dimitrov, N. (2019). Digitalisation in the hospitality industry-trends that might shape the next stay of guests. *International Journal of Information, Business and Management*, 11(3), 144-154.
- [10]. Parviainen, P., Tihinen, M., Kääriäinen, J., & Teppola, S. (2017). Tackling the digitalization challenge: how to benefit from digitalization in practice. *International journal of information systems and project management*, 5(1), 63-77.
- [11]. Montargot. (2016). Digitalisation Advances and Hospitality Service Encounters. *Symphonya. Emerging Issues in Management*, (1), 64. <https://doi.org/10.4468/2016.1.07montargot>
- [12]. Yang, M. H., Lo, M. M., Chou, T., Lin, J. H., & Tang, S. T. (2015). Inpatient meal booking system. In *IFMBE Proceedings* (Vol. 47, pp. 206–208). Springer Verlag. [https://doi.org/10.1007/978-3-319-12262-5\\_57](https://doi.org/10.1007/978-3-319-12262-5_57)

## Web Sources:

1. <https://hoteltechreport.com/news/digital-transformation>
2. <https://energyinformatics.springeropen.com/articles/10.1186/s42162-021-00156-6>
3. <https://journals.sagepub.com/doi/full/10.1177/0971890720914111>
4. <https://hoteltechreport.com/news/summit-hotel-smart-ordering>
5. <https://www.freeprojectz.com/project-report/1778>
6. [https://www.oracle.com/webfolder/s/delivery\\_production/docs/FY16h1/doc35/Guest-Experience-Report-2016-V7.pdf](https://www.oracle.com/webfolder/s/delivery_production/docs/FY16h1/doc35/Guest-Experience-Report-2016-V7.pdf)
7. <https://www.accenture.com/acnmedia/PDF-85/Accenture-Digital-Platforms-Pov.pdf>