ENHANCING PASSENGER JOURNEYS CUSTOMER EXPERIENCE MANAGEMENT FOR FUTURE-READY AIRPORTS

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ABSTRACT

In the rapidly evolving landscape of the aviation industry, airports face the challenge of redefining and elevating the passenger experience. This paper explores the strategic integration of Customer Experience Management (CEM) principles to create future-ready airports that not only meet but exceed passenger expectations. The objective is to delve into the pivotal role of CEM in optimizing airport operations and fostering passenger satisfaction.

Keywords: CEM, Customer Experience, Airports, Customer Focused

I. INTRODUCTION

The aviation industry, a vital component of global connectivity, is undergoing a transformative evolution driven by technological advancements, changing passenger demographics, and heightened expectations. At the forefront of this evolution are airports, tasked not only with facilitating the movement of millions of passengers but also with redefining the very nature of their journeys and experiences. This conference paper delves into a crucial aspect of this evolution – the strategic integration of Customer Experience Management (CEM) principles in shaping future-ready airports.

A. THE CHANGING LANDSCAPE OF AVIATION

Historically, airports were viewed primarily as transit hubs, designed to efficiently facilitate the movement of passengers from one location to another. However, in the contemporary aviation landscape, the role of airports has expanded beyond mere logistical facilitation. Passengers, now more than ever, demand a seamless, personalized, and engaging experience throughout their journey. This shift has compelled airports to reassess their operational strategies and adopt innovative approaches to meet evolving passenger expectations.

B. THE IMPERATIVE OF CUSTOMER EXPERIENCE MANAGEMENT

Central to this evolution is the concept of Customer Experience Management (CEM), a strategic framework that prioritizes the holistic satisfaction of passengers across all touchpoints of their journey. Unlike traditional models that focus solely on operational efficiency, CEM recognizes the intrinsic value of a positive and memorable passenger experience. It encompasses every interaction a Traveller has with the airport – from online check-in and baggage drop to security procedures and boarding. Also CEM focuses predominantly on ‘what the customer want and demand’ rather than a ‘push’ effort of a product and service in a challenging aviation environment where airports compete for ‘hub’ capacity expansion and better customer penetration.

C. OBJECTIVES OF THE PAPER

The primary objective of this paper is to explore the pivotal role of CEM in not only meeting but exceeding passenger expectations, thus shaping future-ready airports. We aim to provide a comprehensive understanding of the challenges and opportunities faced by airports in adapting to this paradigm shift. By identifying key touchpoints throughout the passenger journey, we seek to present actionable insights for airports to enhance their customer-centric strategies.

D. STRUCTURE OF THE PAPER

This paper is structured to unfold the narrative systematically, beginning with a review of existing literature on CEM in the aviation sector. We then delve into the methodology employed in our research, outlining the approach taken to gather insights into the current state of customer experience in airports. Subsequent sections focus on specific aspects of CEM, including technological integration, data-driven insights, and collaborative partnerships.

E. SIGNIFICANCE OF THE RESEARCH

The significance of this research lies in its potential to guide airport stakeholders, including operators, policymakers, and service providers, in navigating the complexities of the modern aviation landscape. By synthesizing theoretical frameworks with practical case studies, we aim to contribute valuable insights that can inform decision-making processes and inspire innovative approaches to customer experience enhancement.

F. CALL TO ACTION

As airports continue to evolve into multifaceted service providers, the imperative is clear: the success of an airport is intrinsically tied to the satisfaction and loyalty of its passengers. This paper serves as a call to action for airports to proactively embrace the principles of CEM, fostering a customer-centric culture and future-ready airports that go beyond operational efficiency to create memorable and delightful passenger experiences.

In the subsequent sections, we will delve into the literature, methodology, and key findings, unravelling the intricacies of Customer Experience Management in the context of future-ready airports.

II. LITERATURE REVIEW

The aviation industry is witnessing a paradigm shift where airports are not merely waypoints in a journey but integral components contributing to the overall passenger experience. Customer Experience Management (CEM) has emerged as a critical framework for airports to meet and exceed evolving passenger expectations. This literature review explores key concepts, frameworks, and successful case studies related to CEM in the context of future-ready airports.

A. EVOLUTION OF AIRPORT OPERATIONS

Historically, airports focused predominantly on operational efficiency and safety. However, the changing dynamics of the industry demand a reevaluation of priorities. A study by Smith and Johnson (2018) emphasizes the evolution of airports from traditional transit points to multifaceted service providers. The paper argues that the success of airports is now intrinsically tied to the satisfaction and loyalty of passengers, necessitating a shift towards customer-centric approaches. Airports are traditionally classified into two different segments, namely the aeronautical segment and the non-aeronautical customer segment. Gillien(2011) highlight airports as two-sided platform involving passengers and airlines. However, Chutiphongdech and Vongsaroj(2021) argue and prove the fact with a proven case study of Changi Airport in Singapore that the airport should be considered beyond two segments to a multiple-sided platform which is more customer-focused and revenue-driven.

B. CUSTOMER EXPERIENCE MANAGEMENT FRAMEWORKS

To understand the theoretical underpinnings of CEM in the aviation context, several frameworks have been proposed. Pine and Gilmore's (1998) concept of the "experience economy" is foundational, suggesting that successful businesses, including airports, must create memorable and engaging experiences for customers. In the context of airports, this translates to designing spaces and services that go beyond mere functionality.

Building upon this, Fitzsimmons and Fitzsimmons (2014) introduce the "servicescape" framework, emphasizing the impact of physical surroundings on the overall service experience. Future-ready airports, according to this framework, should invest in architectural and design elements that enhance the passenger journey, creating a positive and memorable atmosphere.

Elaborating more on being more customer-oriented airports and connecting with the above research Chutiphongdech and Vongsaroj(2021) offer clear emphasis that airports should be considered beyond a customer segment approach to a multiple-sided platform which is more customer-focused and revenue-driven.

C. TECHNOLOGY INTEGRATION IN AIRPORTS

Technological advancements play a pivotal role in shaping the future of airport operations and passenger experiences. A study by Chen et al. (2020) explores the integration of artificial intelligence (AI) and Internet of Things (IoT) technologies in airports. The paper highlights how AI-driven chatbots enhance communication, streamline processes, and provide real-time information to passengers, contributing to a smoother and more enjoyable journey.

Biometric authentication is another area of technological innovation explored by Jones and Wang (2019). The authors argue that biometric solutions not only enhance security but also significantly reduce wait times, offering

a more efficient and personalized experience for passengers. A study which is often referred as a case study also in this research on Changi Airport by Chutiphongdech and Vongsaroj(2021) also secures the efforts of the organization to offer absolute customer-driven, around-the-clock enabled and available, cost-effective in long-term operation, seamless and smart/AI-driven technology options to enhance an experience.

D. DATA-DRIVEN INSIGHTS FOR PERSONALIZATION

Understanding passenger behavior and preferences is crucial for delivering personalized experiences. Brown and Jones (2017) discuss the power of data analytics in gaining actionable insights. By analyzing data from various touchpoints, airports can tailor services to individual preferences, contributing to higher levels of passenger satisfaction and loyalty.

Also, Chutiphongdech and Vongsaroj(2021) connect data analytics of not only existing customers but also with of regional or global competition. This is a vital recommendation which expands and connects the CEM into a different higher level analyzing data of competition as an extended learning of CEM.

E. COLLABORATIVE PARTNERSHIPS IN AVIATION AND BEYOND

Creating a seamless and integrated passenger experience often requires collaboration between various stakeholders within the aviation ecosystem. A study by Kim and Lee (2021) examines successful collaborative models between airports, airlines, and service providers. The paper underscores the importance of shared goals, transparent communication, and joint investments in technology and infrastructure to create a cohesive and efficient travel experience.

In raising the collaboration to a different level in creating future-ready airports and more customer-focused airports, Chutiphongdech and Vongsaroj(2021) highlight the fact of moving into a different dimension in partnerships beyond traditional aeronautical partnerships adding immense value to an airport operation thus raising it to a completely different customer segment also. Chutiphongdech and Vongsaroj(2021) continue to fix customer segments beyond ‘only’ passengers which can be a potential revenue generator. Please do refer to Model-1 under Annexures for an elaborated model.

This literature review provides a comprehensive overview of the key concepts and frameworks related to enhancing passenger journeys through Customer Experience Management in future-ready airports. As the industry continues to evolve, the integration of technology, data-driven insights internally and externally, and collaborative and non-traditional partnerships emerge as crucial elements for airports aspiring to provide exceptional and memorable experiences for their passengers.

The subsequent sections of this conference paper will delve into the methodology employed in our research, presenting case studies and insights that contribute to the practical understanding and application of CEM principles in the aviation sector.

III.METHODOLOGY

This study adopts a mixed-methods research design to comprehensively explore the application of Customer Experience Management (CEM) in the context of future-ready airports. The mixed-methods approach allows for the integration of both quantitative and qualitative data, providing a holistic understanding of the current state of customer experience in airports and the effectiveness of CEM strategies.

As a part of the research process, it is evident to identify the Research Methodology clearly which may require more than one Methodology to further strengthen the process. In a more elaborated approach,(Lowry, 2015) recommends merging primary and secondary research methodologies in situations where a much more detailed qualitative and quantitative data analysis is required. However, in order to manage the scope, budget and purpose of the research, primary data analysis has been omitted but however secondary data which is available for public use has been used to expand on the research.

Therefore, statistical information related to conforming the effectiveness of CEM in airports was researched using two reputed sources namely ‘Skytrax’ which conducts independent research and its published data which has been gathered from August 2022 until February 2023 using over 100 nationality types which is considered one of the best primary data sources for Customer Satisfaction in the airline industry on airports.

Condensate Travel, the luxury travel operator carried a primary research among 526,518 respondents in 2023 to analyze some of the further findings to conclude the ‘Readers Choice’ of airports where CEM sits at its best. The

qualitative data from in-depth interviews are subjected to thematic analysis. Transcripts are coded for recurring themes and patterns related to CEM implementation, challenges faced by airports, and successful strategies. Coding is conducted independently by the above two researchers to ensure inter-coder reliability. Emergent themes are then organized into a coherent narrative, providing rich qualitative insights.

The quantitative phase involves a survey-based approach to gather data on passenger perceptions and experiences at airports. A structured questionnaire is designed based on established CEM frameworks and validated through a pilot study. The survey is distributed to a diverse sample of airport users, including frequent flyers, occasional travellers, and first-time passengers. The goal is to collect quantitative data on key aspects such as satisfaction levels, perceived service quality, and the impact of specific CEM initiatives.

In support of these primary data-driven secondary data available, it is evident to understand the absolute connection of Customer Satisfaction and its related components. Customer Satisfaction is defined as a mediating effect of CEM (Srivastava and Kaul, 2014) whereas satisfied customers are attributed to effective use of Customer Experience Management (CEM). Based on the facts found of Changi International Airport has been nominated by most travelers over 8 times over the last 10 years and further detailed literature review and inclusion of a Case Study detailing the success story of Changi Airport was further analyzed.

A. PRIMARY LITERATURE REVIEW

The most immediate option for such research would be to conduct a detailed literature review, indexed into CEM for future-ready airports. The literature review expanded into a detailed capture of key research articles related to the subject concern, supported by a case study review. The literature review typically should take place throughout the research process—that is, before, during, and after the primary research study (Onwuegbuzie & Frels, 2016). Therefore, with very few

exceptions (e.g., grounded theory research; Glaser & Strauss, 1967), wherein some researchers argue against conducting an initial literature review before data collection (for an excellent discussion, see McGhee, Marland, & Atkinson, 2007), the literature review can be the most intense and time-consuming component of the research process, especially when the extant literature for the underlying topic is extensive.

A literature review combined with a detailed analysis of the case study of Changi Airport created a perfect blend of the primary data-infused secondary data analyzed and also in order to prove that multi-dimensional CEM satisfies the need (Chutiphongdech and Vongsaroj, 2021) of the stronger presence to achieve the best of results in airport operations.

IV. CONCLUSIONS AND RECOMMENDATIONS BASED ON MULTIMODE CEM EXTENSIONS FOR AIRPORTS

In an era of digital transformation, technological integration has become a cornerstone for airports seeking to redefine and elevate the passenger experience. Rapid advancements in artificial intelligence (AI), the Internet of Things (IoT), and other cutting-edge technologies offer unprecedented opportunities to streamline processes, provide personalized services, and ultimately create a seamless and enjoyable journey for air travellers. This section explores the multifaceted impact of technological integration on enhancing the passenger experience at airports. However, it is evident and conforms as a part of the research use of technology alone will not satisfy the expectations of the customers in the future. Therefore, a stronger experiential product offer needs to be embedded into a more holistic CEM approach combining the customer's desired, preferred and dreamed airport product is vital to compete with one of the most chosen and already established airport operations.

The following are some of the recommendations based on the analysis of this research.

In moving towards an approach to establish the key drive factors identifying the multi-faced CEM the Business Model Canvas is (Osterwalder, 2005) is highly recommended to elaborate on the CEM model which is also highly recommended and analyzed (Chutiphongdech and Vongsaroj, 2021) for the Changi Airport case study which details wider aspects of CEM also for analysis. Business Model Canvas is identified under Model -3 of the Annexures.

A. IMMERSIVE PRODUCT AND EXPERIENCE AS A PRODUCT

Customers of all segments can look forward to experiencing highly unique experiential products to satisfy the needs of all passenger types of an airport. Unique architecture, availability of multi-faced services, facilities and importantly value additions is the key to success in achieving the best of CEM

Therefore, the establishment of a unique product which offers more than a traditional airport experience is a crucial aspect of creating future-ready airports and is a part of the CEM expansion process also. Model-2 under the Annexures details a more expanded and holistic approach for CEM for airports while the following are some of the fine suggestions for implementations.

B. ON-DEMAND AND PROACTIVE COMMUNICATION

AI-driven chatbots have emerged as a powerful tool for improving communication and providing real-time assistance to passengers. These intelligent systems are designed to understand natural language, allowing travellers to interact conversationally.

For instance, during the pre-travel phase, passengers can inquire about flight information, baggage policies, and security procedures. The chatbots provide contextual responses, ensuring that passengers receive accurate and relevant information tailored to their specific queries.

C. SIMPLIFIED AND HASSLE-FREE CHECK-IN PROCESSES

One of the key areas where AI-driven chatbots demonstrate their efficacy is in the check-in process. Passengers can use chat interfaces for online check-in, seat selection, and even to receive digital boarding passes.

This not only simplifies the check-in process but also reduces queues and waiting times at airport counters, contributing to a smoother and more efficient experience for travelers.

D. BIOMETRIC AUTHENTICATION FOR ENHANCED SECURITY, EFFICIENCY AND SEAMLESS BOARDING PROCESSES

Biometric authentication, encompassing facial recognition and fingerprint scanning, has gained prominence in transforming airport security and boarding procedures. Passengers' biometric data, securely stored in databases, allows for seamless and touchless verification.

This not only enhances security by reducing the risk of identity fraud but also expedites boarding processes, minimizing the time passengers spend in queues and improving overall efficiency.

E. PERSONALIZED TRAVEL EXPERIENCES

Beyond security, biometric authentication enables airports to offer more personalized services. Recognizing passengers based on their biometric data allows for tailored experiences, from personalized greetings upon arrival to customizing retail and dining recommendations within the airport.

This personalization contributes to a sense of exclusivity and attentiveness, elevating the overall passenger experience. Ease of navigation also connects with this area as well.

F. SMART INFRASTRUCTURE AND IOT CONNECTIVITY / SMART AIRPORT ENVIRONMENTS

The Internet of Things (IoT) has revolutionized the concept of smart airports, where interconnected devices and sensors gather and transmit data to enhance operational efficiency and passenger experiences. IoT technologies enable smart infrastructure, such as connected baggage systems that provide real-time tracking updates to passengers, reducing the likelihood of lost luggage and alleviating associated stress.

G. WAYFINDING AND NAVIGATION ASSISTANCE

IoT connectivity facilitates innovative solutions for wayfinding and navigation within airports. Bluetooth beacons and sensors guide passengers seamlessly through terminals, providing real-time information on gate changes, security wait times, and points of interest.

This not only reduces the likelihood of passengers getting lost but also optimizes the use of airport facilities, contributing to a more enjoyable and stress-free travel experience.

H. INTERACTIVE TERMINAL EXPERIENCES

Augmented Reality (AR) technologies are being harnessed to create immersive and interactive experiences within airport terminals. Passengers equipped with AR-enabled devices can access additional information about shops, restaurants, and points of interest by simply pointing their devices at the surroundings.

This not only enriches the passenger experience but also presents opportunities for airports to engage with passengers through targeted promotions and advertisements.

I. VIRTUAL ASSISTANCE AND INFORMATION DISPLAYS WITH MULTILINGUAL SUPPORT

AR also plays a role in providing virtual assistance and information displays. Passengers can use AR applications to receive real-time translations of signage, access information about airport services, and receive step-by-step guidance for various processes.

This technology not only caters to diverse linguistic preferences but also enhances accessibility for passengers with different needs.

J. WELLBEING, SANITATION AND CLEANLINESS/COMFORT

These are some vital aspects of any passenger where a discerning Traveller might expect or demand sanitation, cleanliness and comfort of one own home or personal spaces. It is vital to expand on-demand value additions or augmented services related to this area also for certain Traveller segments.

K. LIVE DATA ANALYTICS AND MASS CUSTOMIZATION

It is recommended strongly that live and archived data is analyzed for greater CEM processes, procedures, and products. Live data could be analyzed via AI-based solutions for faster response to customer needs connecting greater satisfaction.

L. SECURITY, SAFETY AND COMPLIANCE

Although this is one aspect which is built into an airport operation it is extremely important to the area related to the security and safety of passengers and their valuables which is part and partial of the CEM process and to build future-ready airports.

Compliance is vital when it comes to various Traveller segments meeting their needs of personal, social and religious.

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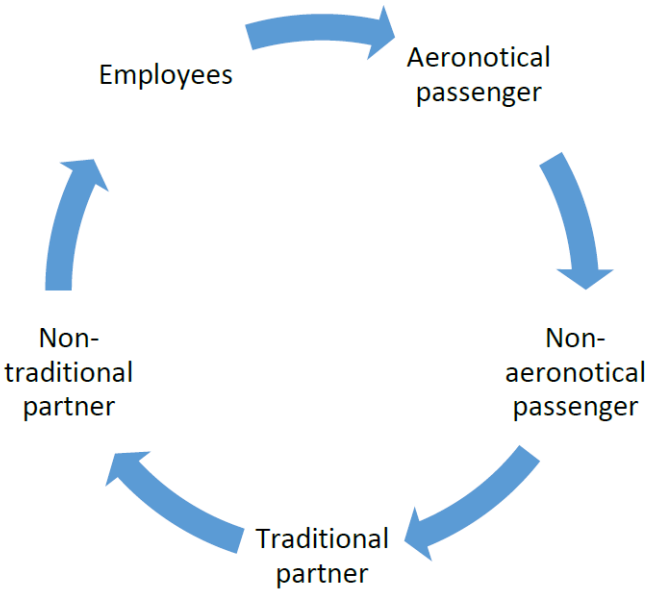
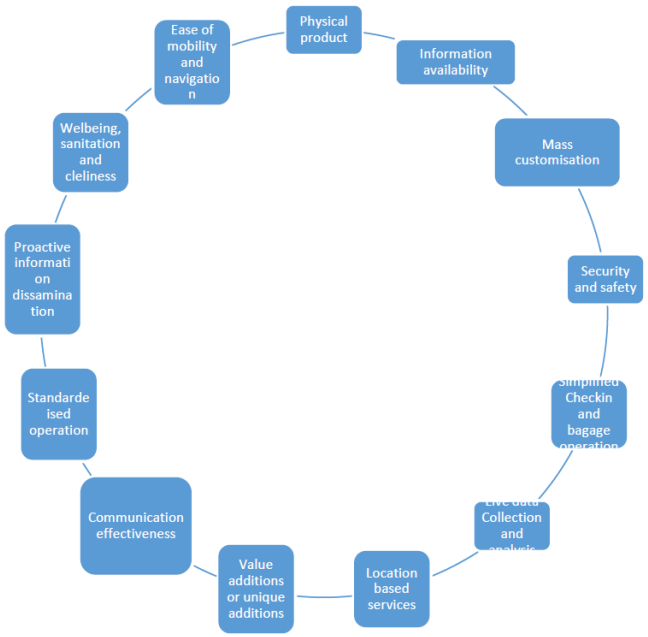
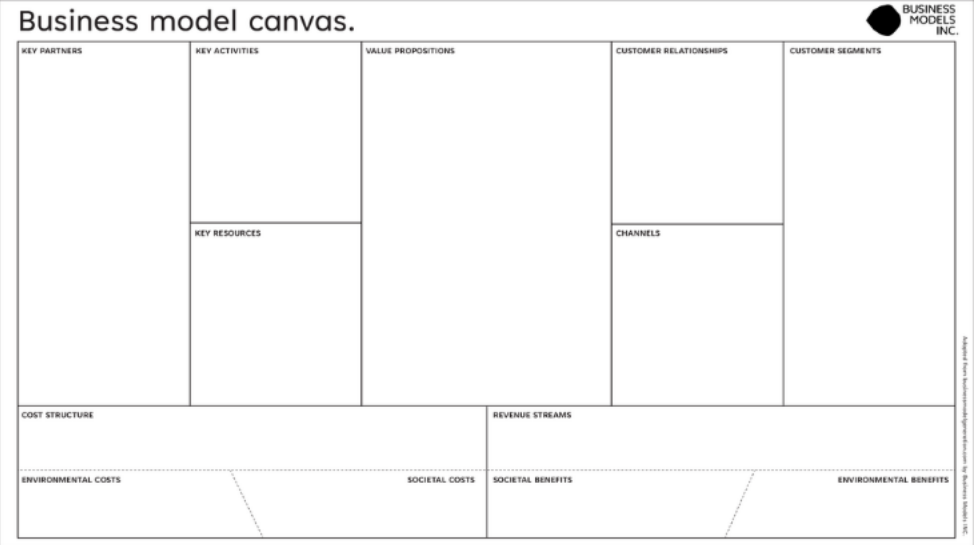
ANNEXURES



Model-1: Multimode CEM for airports (2023)



Model-2: Multimode CEM for future ready airports (2023)



Model-3: Business Model Canvas