


Chapter 7


Blockchain for Seamless and Transparent Smart Hospitality Operations

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ABSTRACT

This chapter explores how blockchain technology is transforming the hospitality industry by enhancing data transparency, operational efficiency, and security. It highlights blockchain's role in securing payments, bookings, supply chains, and guest authorization processes. Through smart contracts and tamper-proof records, blockchain combats fraud and ensures compliance with regulatory standards. The chapter examines real-world use cases such as loyalty platforms that boost customer retention and brand trust. Despite challenges in scalability, operations, and regulations, leading hospitality firms have achieved improved guest interactions through blockchain integration. This chapter provides insights into safely adopting blockchain for hotel management, emphasizing its potential to build trust, streamline

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operations, and align with smart infrastructure systems.

1. INTRODUCTION

Rapid changes operate within the hospitality industry because digital technology advances into all operational areas. The development of operations required blockchain technology mainly because it enables safe procedures with transparent and efficient functionality. Hospitality operations have always used ubiquitous systems to follow a logical process for guest recordkeeping and payments while tracking customer loyalty. The function of operational systems remains unaffected by security issues that arise from data modification and distributed information infrastructures which produce operational execution problems (Kizildag et al., 2019a).

The fixed-record system of Blockchain technology establishes transparent database services that protect financial transactions and database contents through decentralized records. Maximum reliability can be achieved by hospitality operations through the basic blockchain core features. The automatic execution of booking confirmation management processes along with payment procedures and guest authentication procedures through smart contracts results in decreased errors and enhanced speed together with precision (Felipe & Xu, 2023).

The volume of data in modern digital systems called for intelligent decision support mechanisms to extract relevant insights. The massive application of Artificial Intelligence (AI) into domain-specific applications such as healthcare, education, and cyber forensics have all shown great promise. This chapter focuses on the use of Federated Learning (FL) and Large Concept Models (LCMs) in disrupted environments, particularly where data privacy and computational decentralization are important.

1.1 Importance of Blockchain in Modern Hospitality

Powerful blockchain technology functions by means of new decentralized infrastructure which includes cryptographically secured impermeable mechanisms. People need to implement new human resources systems at the same time as operational changes occur. The adoption strategy demands staff training as a fundamental element because of critical factors. Basic blockchain education must be provided to the front desk staff as well as housekeeping personnel and the IT team and management team members and finance department team members according to their work duties.

The technology becomes understandable through video tutorials and face-to-face workshops and simulation exercises that are supplemented by team cross-section sessions thereby creating trusted user readiness.

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