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SCHOOL OF ECONOMICS AND MANAGEMENT

Frontline + The Machine

Comparing the Sociotechnical Realities of Centralized & Franchised Digital Strategies in International Hospitality

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Abstract

This thesis examines how contrasting corporate digital strategies shape frontline hotel employees' ability to balance chain-level systems with local service responsiveness. The study treats chain-level digital systems as contemporary fixed elements of hotel formats by applying and building up on the Integration-Responsiveness framework, Flexible Replication, and sociotechnical perspectives, in particular the TOP framework and the principle of joint optimization. Empirically, it compares two international hotel groups that differ in both digital systems used and ownership model. One is a corporately owned chain using a central configured, highly connected cloud ecosystem, while the other is a family-owned franchise that is operating a large-scale, compliance-oriented platform. The study adopts a qualitative and abductive research approach, combining semi-structured interviews with frontline and local managerial staff in both properties and secondary sources from corporate and vendor materials. For each group across the Technology, Organization, and People pillars, the Gioia method is used for identifying the aggregate dimensions to develop a comparative discussion. The findings show that while centralized deployment generates frictionless automation, it intensifies the visibility and psychological pressure on staff. Whereas the franchise standardization preserves analog hospitality by shifting operational and cognitive burdens onto the frontline. The thesis contributes to international business and hospitality research by demonstrating how digital infrastructure and organizational structure together shape the possibilities for local service adaptation.

Key Words: hospitality, international hotels, digitalisation strategy, flexible replication, digital systems, sociotechnical, sociotechnical systems, joint optimization, local responsiveness

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1. Introduction

1.1 Background

In recent years, the way international hotel chains organize and deliver service has been fundamentally reshaping with the rapid pace of globalization and digitalization. As these hotels open up and operate in new locations across the globe, they must continuously navigate adapting to specific local markets and exploiting global efficiencies (Bartlett & Ghoshal, 1989; Prahalad & Doz, 1987). *Local adaptation* is the act of tailoring services and operations to specific local cultures, regulations, laws, and guest expectations, while *global integration* is by centralizing decisions, standardizing processes, and leveraging economies of scale (Prahalad & Doz, 1987).

These tensions align with the broader idea of *Flexible Replication* which is characterized by standardizing core *fixed elements* while allowing adaptation in more peripheral elements (Jonsson & Foss, 2011). In recent years, however, the nature of these fixed elements has shifted from being primarily physical to now being embedded in centralized digital infrastructure, such as cloud-based property management systems (PMS) and customer relationship management (CRM) platforms (Sigala, 2005). These systems encode standardized workflows for reservations, check-in, payment, and guest data management, turning digital infrastructure into the modern modus operandi of replication for hotel chains.

Recent studies in data analytics and artificial intelligence (AI) have strengthened the idea that digital systems can deliver *mass customization*; which Pine (1993) describes as providing goods and services that are individually customized. This means that hotels can offer highly individualized guest experiences while still relying on standardized processes and infrastructure (Da Silveira et al., 2001; Dwivedi et al., 2021). In principle, centralized PMS and CRM platforms can both enforce global standards and enable local staff to deliver individualized, context-sensitive service by drawing on guest profiles and past interactions (Sigala, 2005). However, not all international hotel chains pursue the same digital strategy. Some emphasize highly centralized, corporate-controlled platforms deployed uniformly across properties, while others rely more on franchise-style standardization that sets templates and guidelines but leaves greater room for local interpretation. These contrasting strategies likely have significant implications for how frontline employees use technology to balance global consistency with *local responsiveness* in their daily work.

1.2 Problematization

Although the international business literature has extensively examined how multinational enterprises manage the Integration-Responsiveness (I-R) tension at the strategic level, the specific implications of digital infrastructure in this balance remains underexplored. Furthermore, much of the hospitality and operations literature acknowledges that digitalization does not remove the need for human judgment and sensitivity to local service conditions (Sigala, 2005). Rather, the discussion regards how these digital systems are

embedded within wider sociotechnical arrangements in the work environment. From this perspective, digital platforms are not neutral. Their design encodes assumptions about workflows, decision rights, and what counts as a good service (Kim et al., 2023). When corporate headquarters deploy centralized, chain-level platforms, they effectively build their integration priorities into the architecture of the system. Conversely, more franchise-style approaches may standardize templates and guidelines while leaving greater room for local configuration and improvisation.

However, we know little about how these strategies play out in practice for frontline employees. Existing studies often focus on high-level digital transformation or guest perceptions of technology-enabled service, but rarely on how staff in different organizational settings interpret and adapt chain-level systems in daily service work (Martínez-Ros & Orfila-Sintes, 2009; Sigala, 2005). This creates a theoretical and practical blind spot. Although centralized systems promise efficiency, control, and brand consistency, actual realization of localized, personalized service depends on how local employees and managers navigate these systems in response to guest needs. It is unclear under which digital strategies technology becomes an empowering affordance that supports *joint optimization* of global standards and local service, and under which it becomes a rigid constraint that generates *operational friction* on the hotel floor (Emery & Trist, 1960; Leonardi, 2011).

1.3 Research Purpose

The primary purpose of this study is to explore how different corporate digital systems in international hotel chains shape frontline employees' ability to work with these systems and adapt to it when needed by the specific culture. Building on the Integration-Responsiveness framework, Flexible Replication, and *Sociotechnical Systems* theory, this study examines how chain-level digital systems are experienced by staff working in contrasting organizational contexts. The empirical setting is the hotel industry, where different corporations, or groups, operate with varying degrees of centralization and franchise-style autonomy.

To address this purpose, the study investigates two international hotel groups that represent different approaches to corporate digital strategy and chain-level system deployment. Through qualitative interviews with frontline and local managerial staff at a local branch of each hotel group, the research seeks to understand how employees interpret corporate digital mandates, how they use or adapt PMS and CRM platforms in practice, and how these practices influence the balance between global consistency and local responsiveness in guest service. In doing so, the study aims to contribute to international business and hospitality literature by illuminating how digital infrastructure, replication strategies, and frontline agencies interact in everyday operations.

Our study is oriented around the following research question:

"How do centralized versus franchised digital standardization strategies influence frontline employees' capacity to jointly optimize corporate systems at the local level?"

1.4 Delimitations

To ensure analytical depth and feasibility, several delimitations have been established. First, the study is contextually confined to the hospitality industry. The empirical work centers on two specific hotel groups with the corporate digital strategies of *centralized deployment* and *franchise standardization*, rather than seeking broad statistical generalization across the industry.

Second, the analysis focuses specifically on chain-level digital systems, defined as centralized, corporate-mandated technological infrastructures such as PMS and CRM platforms.

Third, the study concerns internal organizational dynamics and the perspectives of staff. The empirical material is based on interviews with local property managers and staff, rather than corporate executives or customers. Therefore, the research cannot directly measure guest satisfaction, brand equity, or financial performance. Instead, it examines how employees perceive chain-level digital systems in their daily work.

Lastly, the study draws from the Integration-Responsiveness framework, Flexible Replication, and Sociotechnical Systems theory, including the *TOP framework* and the principle of joint optimization, to analyze how digital infrastructure interacts with global-local strategy and maintain focused exploration of how contrasting digital strategies shape the frontline's ability to optimize the systems and perform local adaptations.

2. Literature Review

2.1 The Strategic Context: Replicating the Hotel Service Model

2.1.1 Integration-Responsiveness Framework

International hotel chains operate under constant tension between exploiting global efficiencies and adapting to local markets. The Integration-Responsiveness (I-R) framework captures this tension as a balance between pressures for global integration and pressures for local responsiveness (Bartlett & Ghoshal, 1989; Prahalad & Doz, 1987).

Global integration pushes firms to centralize decisions and standardize processes to gain economies of scale and strengthen their competitive position, whereas local responsiveness requires tailoring services and operations to the specific cultural, regulatory, and market conditions of each host country (Prahalad & Doz, 1987). In hospitality, this integration logic is reflected in standardized brand concepts, centralized reservation systems, and global loyalty programs. At the same time, hotels often face heterogeneous local guest expectations that require adaptation to meet guest needs effectively (Sigala, 2005).

2.1.2 Flexible Replication

Flexible Replication offers one way to navigate this tension. Jonsson and Foss (2011) describe Flexible Replication as an international expansion approach in which firms replicate a core business format while allowing structured local adaptation and learning. Rather than reinventing the business model in every country, firms maintain a template with both fixed and *adaptable elements*. This allows them to respond to local conditions while still maintaining key features of the format (Jonsson & Foss, 2011). Empirical research on hotel innovation shows that hotels can improve performance and competitiveness when they standardize a core format but experiment with local adaptations (Martínez-Ros & Orfila-Sintes, 2009).

Within this template, the high-level features remaining stable across firm properties are referred to as fixed elements. In the hotel industry, these fixed elements include core brand identity, fundamental corporate values, non-negotiable service standards such as level of formality and speed, and the overall guest value proposition (Pullman et al., 2001). Replicating these fixed elements across many properties supports economies of scale and helps maintain brand consistency worldwide (Jonsson & Foss, 2011; Winter & Szulanski, 2001).

Adaptable elements are features that can be varied and customized to achieve a better fit with the local environment and local guest needs. Jonsson and Foss (2011) describe these as lower-level elements that include local pricing strategies, specific service and product offerings, marketing campaigns, and property design that reflects local culture and regulations. Martínez-Ros and Orfila-Sintes (2009) explain that innovation activity in hotels shows that such adaptations often take the form of incremental changes. For example,

adjusting menus to local tastes, tailoring room amenities to local expectations, or aligning front-desk interactions with local norms of politeness (Martínez-Ros & Orfila-Sintes, 2009). Through these adaptable elements, local managers can respond to their immediate environment while operating within boundaries set by the brand's fixed elements (Jonsson & Foss, 2011).

This interplay between fixed and adaptable elements leads to what Winter and Szulanski (2001) call the *replication dilemma*. When organizations introduce formats that worked well in the home market into new host markets, they must decide how much of the original template to copy and how much to adapt (Winter & Szulanski, 2001). Exact replication can protect efficiency and brand coherence, but as cultural and institutional distance increases, those original routines may become less applicable and perform poorly in the new context (Kostova & Roth, 2002; Williams, 2007). Studies on practice adoption in multinational subsidiaries show that greater differences between the original and receiving contexts make local adaptation increasingly necessary for successful implementation (Kostova & Roth, 2002; Williams, 2007). The previously mentioned examples of hotel innovation activity often reflect this tension between standardized routines and context-specific (Martínez-Ros & Orfila-Sintes, 2009), highlighting the need to balance replication with experimentation while entering or operating in diverse markets.

Flexible Replication is also closely tied to organizational learning and knowledge transfer. Traditional replication emphasizes one-way, forward knowledge flows from headquarters to subsidiaries through codified routines and standard operating procedures (Winter & Szulanski, 2001). Flexible Replication extends this view by recognizing the value of lateral and reverse knowledge flows, in which experiential learning from local units feeds back into the corporate template (Jonsson & Foss, 2011). Mechanisms such as cultural workshops, shared digital platforms, and best-practice databases allow chains to identify local innovations and gradually incorporate them into the global format. Evidence suggests that these processes help firms diffuse successful service and process innovations across properties, supporting performance improvements and the ongoing evolution of the standard format (Martínez-Ros & Orfila-Sintes, 2009).

2.2 Digital Systems as a Driver of Flexible Replication in Hospitality

Many of hospitality's fixed elements today are embedded in centralized digital infrastructure, seen in cloud-based property management systems (PMS), customer relationship management (CRM) platforms, and global reservation and loyalty systems, making them central mechanisms through which headquarters replicates its business model (Sigala, 2005). These systems formalize core routines such as booking workflows and reporting structures, enforcing brand-wide rules and performance expectations even in geographically distant hotels (Kim et al., 2023; Sigala, 2005).

At the same time, these digital systems are presented as enablers of local responsiveness and individualized service. The growing use of data analytics, CRM, and AI-driven

personalization tools points toward a form of mass customization in services (Da Silveira et al., 2001) such as the ability to offer individualized experiences with near mass-production efficiency (Pine, 1993). The core idea in the mass-customization literature is that standardized back-end processes and shared databases can coexist with highly customized front-end interactions (Da Silveira et al., 2001; Pine, 1993). In hotels, this means that while PMS and CRM platforms impose common data fields, standardized workflows, and centralized reporting, staff can still use guest profiles, stay histories, and preference data to adapt specific interactions such as room preferences, communication style, or amenity offerings to each guest (Sigala, 2005).

Broader information-systems research on AI suggests that such technologies can support personalization at scale (Dwivedi et al., 2021), allowing organizations to tailor offers and interactions to guests without abandoning standardized digital infrastructures. This implies that guests can feel individually recognized and cared for even when their experience is delivered through highly standardized systems (Pitakaso et al., 2025). AI-based analytics can further enable proactive recommendations, dynamic pricing, and targeted service gestures (Pitakaso et al., 2025).

In the hospitality context, empirical work on CRM implementation in hotels shows that the effectiveness of these systems depends on aligning information technologies with relationship-management and knowledge-management processes, rather than treating CRM primarily as a software project (Sigala, 2005). When digital tools are integrated with staff training, organizational culture, and local service practices, hotels are better able to translate standardized data structures into genuinely differentiated guest experiences (Sigala, 2005).

However, the corporate narrative around these systems often differs from local operational realities. Vendor case studies and franchise guidelines typically present centralized digital solutions as universally applicable, seamless, and largely context-neutral. Research on replication and knowledge transfer (Jonsson & Foss, 2011; Winter & Szulanski, 2001), and innovation in hotel chains (Martínez-Ros & Orfila-Sintes, 2009) suggests that such systems embed assumptions about workflows, roles, and guest behavior that may not fit every local context. Templates for reporting, guest data fields, or automated service prompts frequently reflect home-market norms regarding which information is important, how quickly staff should respond, and what counts as ‘good’ service (Sigala, 2005). When these assumptions clash with local labor regulations, cultural expectations around privacy, or typical guest interaction styles (Sun et al., 2019), local units face the same replication dilemma observed in organizational routines more broadly. That is, whether to comply with standardized system use or to work around it in order to better match their environment (Winter & Szulanski, 2001).

Therefore digital infrastructure is not simply a neutral tool, but a central mechanism through which Flexible Replication is enacted and contested. PMS and CRM platforms represent fixed elements of the hotel chain’s format by specifying required data, process steps, and performance indicators, while at the same time creating both possibilities and constraints for

local adaptation (Kim et al., 2023; Sigala, 2005). Local managers and staff engage in ongoing interpretation and modification deciding how to use system outputs, which data to prioritize, and how to combine standardized procedures with informal, situational judgment in guest interactions (Martínez-Ros & Orfila-Sintes, 2009; Sigala, 2005). This interaction between top-down digital templates and bottom-up local practices becomes a key arena where hotel chains either succeed in achieving Flexible Replication or drift into overly rigid standardization that undermines local responsiveness (Jonsson & Foss, 2011; Winter & Szulanski, 2001).

2.3 Sociotechnical Systems (STS) and the TOP Framework

2.3.1 Digital Transformation and Technological Determinism

While the I-R framework maps the strategic pressures of internationalization, executing those strategies through digital systems requires a broader understanding of organizational change. Digital transformation is frequently misunderstood as a straightforward process of adopting new software or hardware to increase efficiency. This is a perspective rooted in *technological determinism*, the theoretical belief that technology operates as an autonomous, external force unilaterally dictating organizational behavior, structure, and social outcomes, regardless of the human context in which it is placed (Markus & Robey, 1988). Wyatt (2008) explains that a major problem with this perspective is that it equates technological change with inevitable progress, leaving no space for human choice, intervention, or responsibility regarding how technologies are developed and utilized. This flawed assumption, suggesting that the implementation of a highly advanced technological system will automatically yield organizational improvements, is therefore widely criticized by sociotechnical scholars (Bostrom & Heinen, 1977).

In reality, contemporary operations management literature defines digital transformation not simply as a software upgrade, but as a highly complex organizational change that fundamentally alters a firm's operational structures and value creation pathways (Vial, 2019). To fully conceptualize this interaction-driven phenomenon, researchers often turn to Sociotechnical Systems (STS) theory. Originally pioneered in the 1950s and 60s, STS theory explains that an organization consists of two deeply intertwined components: a *technical subsystem* comprising the tools, equipment, and analytical algorithms, and a *social subsystem* comprising the employees, corporate culture, and local workflows (Emery & Trist, 1960; Trist & Bamforth, 1951). These systems do not operate in isolation, constantly interacting to produce organizational outcomes (Van Veldhoven & Vanthienen, 2022).

2.3.2 Lineage From TOE to TOP Framework

A foundational framework for evaluating technological integration is the Technology-Organization-Environment (TOE) model, originally developed by Tornatzky and Fleischer (1990). The TOE framework proposes that a firm's adoption of new technology is shaped by three distinct contexts. These include its available technological resources, its

internal organisational structure, and external environmental pressures including competitive dynamics, market conditions, and regulatory requirements (Tornatzky & Fleischer, 1990). Although the framework remains widely influential for analysing adoption at a strategic level, its emphasis on external environmental factors makes it less suited to examining the day-to-day operational realities of technology implementation as experienced by employees within an organisation.

To address this limitation, researchers such as Bondarouk, Parry & Furtmueller (2017) have developed an adapted version known as the Technology, Organization, and People (TOP) framework, substituting the Environment dimension focused on external factors such as industry characteristics and market structure (Tornatzky & Fleischer, 1990), with a people dimension focused on internal workforce dynamics. Drawing on human resource management (HRM) scholarship, Bondarouk et al. (2017) established this shift of focus on the basis that the operational success of digital integration ultimately depends not on external market forces, but primarily on employee competencies, individual attitudes, and organisational digital culture. This adaptation has demonstrated considerable analytical value in contemporary research contexts. Tursunbayeva and Chalutz-Ben Gal (2024) employ the TOP framework to examine the deployment of artificial intelligence and digital technologies, illustrating its capacity to capture the interaction between structural technological decisions and the human actors responsible for implementing them in practice.

Successful digital transformation depends on the continuous alignment of these three distinct but interdependent pillars. The *Technology* dimension represents the digital tools, IT infrastructure, and advanced software platforms deployed by a firm (Tornatzky & Fleischer, 1990). Meanwhile, the *Organization* dimension comprises the overarching business strategies, structural models, and operational processes that govern the firm (Tornatzky & Fleischer, 1990). Lastly, the *People* dimension encompasses the skills, leadership, behaviors, and cultural readiness of the employees (Bondarouk et al., 2017).

2.3.3 The Technology, Organization, and People (TOP) Framework in the Context of the Hospitality Industry

Applying the TOP framework to the context of international hotel chains, the Technology dimension encompasses the centralized, cloud-based property management systems (PMS), customer relationship management (CRM) databases, automated algorithms, and data structures (Sigala, 2018) designed to capture global information (Grover et al., 2022). The Organization dimension refers to the franchise guidelines, standard operating procedures (SOPs), and strict corporate mandates governing exactly how that technology must be used to enforce brand consistency and payroll efficiencies (Yolcu et al., 2025). Finally, the People dimension represents the frontline staff and regional managers who must actually operate the system in real-time with real guests (Anuzis et al., 2025), relying on human empathy and judgment that technology cannot replicate (Tan et al., 2025). Viewing digital transformation through this lens suggests that the overall value generated by sophisticated technological

systems may remain limited if organizational processes remain overly rigid or if employees lack the flexibility to adapt the technology to their operational realities.

2.3.4 Joint Optimization

The concept of joint optimization, formalized by STS originators Emery and Trist (1960) is therefore essential for evaluating the success or failure of digital platforms in hospitality. Joint optimization is defined as the principle that an organization's technical and social subsystems must be designed and developed simultaneously to operate in harmony, rather than forcing the social system to blindly adapt to the constraints of the technical system (Emery & Trist, 1960). According to STS research, attempting to maximize the efficiency of the technology in isolation without simultaneously considering the behaviors, needs, and limitations of the social systems will inevitably lead to sub-optimization of the overall organization (Appelbaum, 1997). Furthermore, foundational information systems literature highlights the duality of technology, noting that while systems are created to direct human action, they are also continually shaped, interpreted, and occasionally resisted by human action in practice (Orlikowski, 1992).Therefore, a system is only truly successful if the technical elements and the social elements are jointly optimized. To provide an example within the hospitality industry itself, should a hotel chain's corporate headquarters design a system that perfectly captures global accounting data but makes the local check-in process cumbersome for the receptionist, the guest experience will suffer nonetheless.

Conversely, when joint optimization is successfully achieved, the relationship between the technical and social systems becomes mutually beneficial and highly empowering. Instead of acting as a rigid constraint, a well-aligned digital system serves as an overall empowering affordance (Leonardi, 2011) that actively augments frontline capabilities. The technology assumes the burden of high-volume, repetitive tasks, such as automated payments, data synchronization, and inventory management. Operations and service management scholars emphasize that this strategic deployment of technology is designed to augment, rather than replace, human labor (Larivière et al., 2017).

By delegating administrative burdens to the technical subsystem, the menial cognitive load on the frontline employee is significantly reduced. Liberated from tedious tasks, the People within the framework are empowered to redirect their energy toward complex, value-creating activities that technology cannot replicate. These activities can include empathetic problem-solving, reading emotional cues, and delivering highly personalized, localized hospitality (Larivière et al., 2017). In this ideal collaborative situation, the digital infrastructure operates in the background as a support mechanism, enabling the People to achieve the highest standards of the service (Iden & Bygstad, 2024).

2.3.5 Operational Friction and the Path to Empowerment

Despite this potential for empowerment, when corporate headquarters impose chain-level digital systems to achieve global integration, they often prioritize the Technology and Organization pillars at the expense of the People pillar (Sarker et al., 2019). Applying the

concept of Flexible Replication to information systems, Leonardi (2011) highlights that technologies inherently possess both *affordances*, actions the technology allows, and *constraints,* actions the technology prevents. Should joint optimization fail in a hotel setting due to a corporate headquarters mandating a rigid technical system, it can result in severe operational friction on the hotel floor. Consequently, frontline employees are forced to act as *shock absorbers* (Korczynski, 2002) for the organization, absorbing the friction created between global corporate rules and local guest expectations.

To survive this friction and maintain high-quality service, staff must invent *workarounds* or utilize their own informal knowledge to bypass the system's limitations. Alter (2014) defines a workaround as a goal-driven adaptation, improvisation, or intentional bypass of standard operating procedures designed to overcome systemic constraints. In the hospitality context, workarounds can include intentionally overriding length-of-stay algorithms or managing parallel communication platforms. These are not instances of employees maliciously breaking rules, but rather they are acts of *human agency* required to bridge the gap between a rigid, globally standardized technological system and the individualized, intuitive reality of daily service delivery (Alter, 2014).

However, as previously established, this outcome is not predetermined. Examining digital transformation through the TOP framework reveals that digital systems do not resolve I-R tensions independently. Instead, they are a live, dynamic aspect of the sociotechnical environment, presenting both risks of operational friction and extensive opportunities for positive reinforcement and improved working conditions. When joint optimization is prioritized, technology can act as an empowering affordance that supports staff in ensuring global consistency while enhancing their capacity for local adaptation (Leonardi, 2011). This balanced perspective aligns with modern advancements in STS theory, which argue that in the digital age, organizations must adopt an ecosystem approach. In such an approach, the social and technical systems are not just aligned once, but continuously co-evolve to handle shifting environmental complexities, elevate the frontline employee experience, and effectively support localized demands (Shaba et al., 2023).

2.4. Summary

The progression of operations and hospitality management literature reveals a shift in how international expansion is understood. Historically, the challenge of operating a global hotel chain was seen as a macro-strategic dilemma: navigating the Integration-Responsiveness (I-R) framework to balance global economies of scale with the need for localized adaptation (Bartlett & Ghoshal, 1989; Prahalad & Doz, 1987). Then Flexible Replication emerged, suggesting that firms could standardize core fixed elements while allowing adaptable elements to fit local contexts (Jonsson & Foss, 2011). However, the fundamental nature of these fixed elements evolved. Early research focused on physical replication, but contemporary research recognizes that the modern engine of replication is digital infrastructure. In hospitality today, centralized PMS and CRM platforms serve as the primary mechanisms through which corporate headquarters enforce brand consistency and operational workflows globally (Sigala, 2005).

This introduces a major theoretical debate regarding the role and impact of technology in service organizations. At one end lies a technology-first narrative (Markus & Robey, 1988), often rooted in technological determinism (Wyatt, 2008). This perspective assumes that advanced digital systems will resolve I-R tensions through mass customization (Pine, 1993) and standardized back-end algorithms automatically personalize front-facing service (Dwivedi et al., 2021). However, Sociotechnical Systems (STS) theory strongly challenges this assumption, arguing that viewing technology as an automatic solution ignores the complex, localized human realities of service delivery (Bostrom & Heinen, 1977). When digital replication is viewed purely as a top-down IT deployment, corporate templates frequently embed home-market assumptions that clash with host-market cultural norms, labor regulations, and individualized guest needs (Kostova & Roth, 2002).

Combining strategic Flexible Replication and STS theory yields a new interpretation of digital transformation in the hospitality industry. Digital systems are not deterministic tools that automatically execute corporate strategy, instead representing fluid affordances and constraints that reshape the service encounter (Leonardi, 2011). The replication dilemma, how much to copy versus how much to adapt, is not only a strategic decision made at corporate headquarters, but continuous choices made by hotel floor employees (Boudreau & Robey, 2005).

Ultimately, the literature reveals that the success of Flexible Replication in the digital age relies heavily on the principle of joint optimization (Emery & Trist, 1960). When headquarters prioritize the Technology and Organization pillars without aligning them with the People pillar, severe operational friction can occur (Sarker et al., 2019). In these poorly optimized environments, frontline staff are forced to act as shock absorbers (Korczynski, 2002), relying on informal workarounds to bridge the gap between rigid digital workflows and nuanced local demands (Alter, 2014). Alternatively, when the technical and social systems are jointly optimized, technology assumes the burden of menial tasks and empowers the frontline to engage in the empathetic, complex problem-solving that defines true hospitality (Larivière et al., 2017). Therefore, understanding digital transformation in international hotel chains requires moving beyond merely analysis of the software itself and adopting an ecosystem approach to investigate how corporate digital mandates and local human agency co-evolve (Iden & Bygstad, 2024; Shaba et al., 2023).

3. Methodology

3.1 Terminology Definitions

While this study is grounded in the macro-level strategic concepts of Integration-Responsiveness (I-R) framework and Flexible Replication, they are operationalized through the lens of Sociotechnical Systems (STS) theory and the Technology, Organization, and People (TOP) framework. To answer the central research question of how centralized deployment versus franchise standardization shape frontline capabilities, the methodology employs a comparative qualitative design. However, during data collection, abstract academic concepts such as joint optimization and sociotechnical friction are translated into tangible, industry-specific terminology. This methodological translation is essential to accurately capture the lived, daily realities of frontline staff and ensure the overall effectiveness of the research.

When interviewing property-level managers and frontline staff, using terminology familiar to subjects is critical for encouraging relevant and precise responses. For example, macro-strategic concepts like “global integration” and the “Organization” pillar of the TOP framework are operationalized through standard corporate language such as “brand standards”, “standard operating procedures (SOPs)”, or “mandatory workflows”. Conversely, “local responsiveness” and the “People” dimension are discussed in terms of “guest personalization”, “service flexibility”, or “staff empowerment”. The “Technology” dimension, referred to academically as “chain-level digital systems”, is grounded by explicitly discussing the overarching digital infrastructures they interact with daily, specifically their property management systems (PMS) as well as centralized customer relationship management (CRM) platforms.

To address the comparative nature of this study, the distinct corporate digital strategies being investigated must also be operationalized. “Centralized deployment” represents a top-down, strictly managed corporate model and is discussed with participants using terms such as “corporate rollout”, “head office mandate”, or “global system updates”. Conversely, “franchise standardization” represents an owner-operated model with brand oversight and is translated into terms like “brand compliance”, “franchise requirements”, or “owner guidelines”. By clearly defining these structural boundaries in familiar language, the interviews can accurately capture how different organizational governance models impact the daily use of technology.

Furthermore, the more abstract components of Sociotechnical Systems (STS) theory must be translated into operational realities. Hotel employees may be unfamiliar with theoretical terms such as “sociotechnical friction”, “joint optimization”, or “technological affordances”, yet they have direct, practical experience with these phenomena. “Sociotechnical friction” and “systemic constraints” are discussed in the interviews as “strict system structures”, “rigid workflows”, or “inflexible requirements”. Similarly, “human agency” and “workarounds” are explored by asking staff about “overriding the system”, “finding a hack”, or “bending the

rules to accommodate a guest". By aligning the interview language with the daily realities of hospitality operations, this study bridges the gap between abstract sociotechnical theory and practical service delivery, ensuring that the insights gathered meaningfully and accurately reflect the employees' lived experiences.

3.2 Research Approach

This study adopts a qualitative research approach to address the research question of:

"How do centralized versus franchised digital standardization strategies influence frontline employees' capacity to jointly optimize corporate systems at the local level?"

Qualitative research is fundamentally suited for exploring the subjective meanings, interpretations, and social processes that shape organizational behavior (Bell et al., 2019). Because this study seeks to understand how property-level managers and frontline staff interact and contend with corporate digital systems, a quantitative approach relying on standardized metrics would be insufficient to capture the nuanced realities of local service delivery. A qualitative approach allows the researchers to uncover how employees navigate the tension between rigid chain logic and the need for personalized guest interactions.

The study further employs an abductive reasoning approach to theory development. Unlike a purely deductive approach, which tests predefined hypotheses, or a purely inductive approach, which builds theory entirely from empirical observation, abductive reasoning allows researchers to move iteratively between existing theory and empirical data (Bell et al., 2019). The research begins with established theoretical frameworks, namely the TOP Framework, the concepts of affordances and constraints within joint optimization, and digital infrastructure as a fixed element of Flexible Replication. This ability to weave between theory and findings is particularly relevant when investigating the evolving role of digital systems in hospitality, where frontline adaptations may surface surprising facts that international business literature has not yet fully conceptualized.

3.3 Research Design

This study employs a qualitative multiple-case study design. According to Yin (2018), a case study is the most appropriate strategy when researchers ask how or why questions about a contemporary phenomenon over which they have little or no control, particularly when the boundaries between the phenomenon and its real-world context are difficult to distinguish. Here, the phenomenon under investigation (how contrasting corporate digital strategies shape frontline operations) is deeply embedded within its context (the specific operational environment of each hotel property) making a case study design an ideal methodological fit.

A multiple-case design was selected over a single-case design to enable comparative analysis. Yin (2018) argues that evidence drawn from multiple cases is generally more compelling and robust, as it guards against the biases and vulnerabilities of relying on a single organizational context. By examining two distinct international hotel chains, representing centralized

deployment versus franchise standardization, this study can analyze how differing corporate philosophies and digital infrastructures shape the frontline's ability to jointly optimize technology and local service responsiveness. To construct these cases, the primary data gathered from three in-depth interviews at each hotel property is supported and triangulated by secondary corporate documents. This structure follows a replication logic rather than a sampling logic (Yin, 2018), allowing the researchers to assess whether theoretical patterns related to standardization, customization, and sociotechnical friction hold across different organizational environments or diverge based on each chain's operational strategy.

Given the time constraints inherent in the thesis process, the study adopts a cross-sectional time horizon (Bell et al., 2019). Rather than tracking longitudinal changes in digital system adoption, the research captures a detailed snapshot of current operational realities and employee perspectives across the two properties at a single point in time.

3.4. Data Collection

3.4.1 Selection of Case Firm

Given the nature of the research question and the need for in-depth comparative qualitative analysis, the authors proceeded with semi-structured interviews of two distinct hotel groups. Hotel Group A was selected as an example of a centralized deployment strategy, and Hotel Group B as an example of franchise standardization strategy. Both hotel groups maintain their own individual systems, which the authors have labeled Digital System A and Digital System B. For the respective hotel groups, a single local branch was chosen for interviews to be conducted within.

The local branch of Hotel Group A interviewed for this investigation is located in Copenhagen, Denmark and will herein be referred to as Branch A. The headquarters for Hotel Group A are based in the UK, and Branch A is one of their newest ventures, having only opened earlier in 2026. Hotel Group A utilizes Digital System A, a highly integrated, cloud-based Property Management System (PMS) characterized by an open application programming interface (API) ecosystem. An open API system allows for different software programs to link, communicate, and share data instantly. Digital System A is designed to consolidate front-desk operations, maintenance, and housekeeping, while seamlessly integrating with online travel agencies (OTAs). The organizational structure of Hotel Group A relies on this centralized digital infrastructure to distribute SOPs and maintain corporate oversight from the UK headquarters.

Conversely, Hotel Group B is a massive international chain representing a franchise standardization model. However, Branch B, located in Malmö, Sweden, operates under a Swedish family-owned hotel group consisting of six properties. While two of these properties operate independently, four (including Branch B) are franchised with Hotel Group B. This provides Branch B with a high degree of local autonomy within the broader boundaries of corporate guidelines. Hotel Group B utilizes Digital System B, a globally deployed,

cloud-based PMS. Digital System B functions as an enterprise-class system. In this context, an enterprise-class system refers to a large-scale, robust software architecture designed to manage the complex, centralized operations of a multinational corporation, typically prioritizing unilateral security measures, financial compliance, and top-down data integration. The contrasting realities of how these intended system designs actually manifest on the hotel floor are explored in detail in the findings chapter.

The authors transcribed the interviews using the transcription service SunScribe, and whatever was unclear was rewritten by listening to the audio files again to ensure accuracy. Moreover, the authors collected and grouped all the respondents' quotes relevant to the central research question into an Excel file, separating the data into Group A (centralized deployment) and Group B (franchise standardization) to facilitate a comparative analysis.

3.4.2 Primary Data Collection

The primary data of the research was gathered through semi-structured interviews with managers and front-facing employees of both hotel branches. Front-facing employees, such as front desk receptionists, have the largest level of engagement with both the corporate digital systems and guests themselves, therefore their perspective was the most relevant in discovering the nature of relationship between local employees and centralized systems. The purpose of further including managers as subjects was necessary to provide insight on the process of bridging corporate expectations and local exercise.

Although both points of first contact at the branches were achieved through an acquaintance or direct contact, these branches were chosen specifically for their relevance to the research aims. Therefore, the authors employed purposive sampling technique for both the selection of the hotel groups and branches, as well as for the gathering of the interviewees at each branch. Both initial contacts were informed of the position characteristics required for interview subjects and provided alternatives for the authors to select. The study comprises six interviews which averaged one hour each. The interviews were audio recorded to guarantee transparency and transferability for subsequent analysis. These recordings were transcribed verbatim, ensuring an accurate account for examination and analysis.

Each initial contact was interviewed and subsequently facilitated two additional interviews. At Branch A, the three interviews were therefore Interim Hotel General Manager, Front Office Manager, and Front Desk Receptionist. At Branch B, the interviews involved the Director of Sales, Hotel General Manager, and Front Office Manager. Furthermore, to protect the anonymity of participants, all names of the interviewees have been obscured and replaced with speaker labels as such:

Table 1: Interviewee Labels

Hotel Group - Branch	Job Title	Speaker Label
Hotel Group A - Branch A	Interim Hotel General Manager	Speaker 1A
	Front Office Manager	Speaker 2A
	Front Desk Receptionist	Speaker 3A
Hotel Group B - Branch B	Director of Sales	Speaker 1B
	Hotel General Manager	Speaker 2B
	Front Office Manager	Speaker 3B

The authors found semi-structured interviews to be the most appropriate data collection method for this comparative study. The flexibility of using a predetermined set of open-ended questions while retaining the opportunity to steer the conversation and tackle emerging themes during the interaction was highly valued (DiCicco-Bloom & Crabtree, 2006). This method is particularly effective for qualitative sociotechnical research, as it enables the authors to explore participants' thoughts, feelings, and beliefs regarding their daily interactions with chain-level digital systems, while simultaneously delving deeply into specific operational frictions and personal workplace experiences.

The interviews were governed by a question guide (available in Appendix C), which enabled the authors to effectively manage the interview time and control the direction of the inquiry in a systematic and comprehensive manner (DiCicco-Bloom & Crabtree, 2006). Practically, the guide included core questions structured around the Technology, Organization, and People (TOP) framework, such as inquiries into daily digital workflows, brand standard enforcement, and guest personalization. As established in the terminology definitions, the guide translated abstract academic constructs into language familiar for the interviewees. Alongside these core inquiries, the guide included several optional follow-up questions and prompts designed to naturally arise during the interview process, allowing the researchers to capture the unscripted nuances of human agency in the service encounter. Rather than merely asking respondents to list software features, the open-ended format enabled the researchers to probe into, for example, how employees at Branch A navigated strict corporate compliance within Digital System A, and why staff at Branch B relied on informal knowledge and workarounds to bypass the rigid interfaces of Digital System B.

3.4.3 Secondary Data Collection

To thoroughly address the research question and triangulate the findings from the primary interviews, this study also incorporates secondary data in the form of public corporate documents, digital system vendor case studies, and official press releases. In qualitative case study research, triangulating primary interview data with secondary documentation allows

researchers to corroborate, contextualize, or critically contrast the perspectives of the interviewees with official organizational narratives (Yin, 2018). For this study, the secondary data serves a highly specific theoretical purpose in establishing the overarching *corporate intent* of the digital transformation, representing the Technology and Organization pillars of the TOP framework.

The collected documents were purposefully selected to reflect the strategic perspectives of the corporate headquarters and the software vendors supplying the chain-level digital systems. For Hotel Group A, the centralized deployment model, the researchers collected an official case study of the partnership and from the provider of Digital System A, alongside corporate press releases detailing the group's European expansion strategy. These documents heavily emphasize narratives of "accelerated chain onboarding", "open API" connectivity, and the ability to implement fully remote "shell configurations" designed to instantly scale the hotel's brand standards. Furthermore, the corporate materials promote a "hybrid home-meets-hotel" concept, claiming the technology facilitates a seamless, autonomous digital guest journey.

For Hotel Group B, the franchise standardization model, the researchers collected corporate partnership announcements between the global franchise network and the provider of Digital System B, as well as official franchise development guidelines. These documents focus heavily on "enterprise-class reliability", robust global standardization, and the enforcement of "fiscal compliance" across hundreds of countries. The franchise marketing materials explicitly emphasize the strategic balance of providing local properties with global digital "muscle" while allegedly allowing them to retain their independent, localized character.

Methodologically, collecting these specific secondary sources allows the researchers to map the fixed elements of the Flexible Replication strategy exactly as headquarters intended them to function. By establishing this idealized corporate baseline, containing messaging that often echoes the assumptions of technological determinism, the researchers can directly contrast it against the primary interview data. This comparative document analysis enables the study to systematically investigate whether the corporate promises of streamlined workflows and effortless integration genuinely result in joint optimization on the hotel floor, or if they instead generate sociotechnical friction that the frontline staff must absorb and work around in their daily routines. An itemized list describing all secondary data documents analyzed are available in Appendix B, though direct access to said documents has been excluded to protect organizational anonymity.

3.5 Data Analysis

For primary data analysis, the study engages in the three coding steps described in the Gioia method, allowing for the development of codes and themes arranged by 1st-order informant-centered codes and 2nd-order theory-centered themes (Gioia et al., 2012). The coding process began with the open and objective coding approach focusing only on 1st-order concepts. These were the objective descriptions of the interviewees' quotes,

grouped together so that all the quotes belonging to the same 1st-order concept discuss the same phenomenon. Secondly, the authors continued the data analysis by identifying 2nd-order themes through searching for relationships between the 1st-order concepts, resulting in more abstract concepts. To maintain the comparative integrity of the research design, this step was executed with a dual focus: identifying themes unique to the centralized environment of Group A, and themes unique to the franchise environment of Group B.

These 2nd-order themes were then the basis for conceptualizing the more abstract aggregated dimensions. Through this final coding phase, the themes were mapped directly against the Technology, Organization, and People (TOP) framework. This process led to distinct aggregate dimensions for the two respective hotel groups, establishing a structured foundation for comparing how differing IT architectures and organizational models influence frontline behavior and joint optimization. The authors will make use of these 2nd-order themes and aggregated dimensions, alongside consistent reference to the interviewees' 1st-order quotations, to present the comparative analysis in a detailed and data-based narrative within the following findings chapter.

The application of the Gioia method provides a highly rigorous framework for this study by systematically transitioning from raw data to a comprehensive grounded theory model (Gioia et al., 2012). First, the method preserves the participants' own language during the initial 1st-order stage of analysis (Gioia et al., 2012). This is vital in this study as the interviews were built around the practical, everyday vocabulary used by hotel property staff, rather than abstract academic definitions. By giving frontline employees and local managers a strong voice as knowledgeable actors, the study ensures that their own interpretations of digital workflows and daily operational realities are captured accurately (Gioia et al., 2012). This also prevents analysis from being overtly shaped by pre-existing corporate assumptions or theoretical frameworks too early in the process (Gioia et al., 2012).

The three-level coding structure also creates a transparent and auditable analytical process, which strengthens the confirmability of the research (Gioia et al., 2012). The analysis moves step by step from raw qualitative data to 1st-order codes, which are then grouped into researcher-centric 2nd-order themes, and finally developed into broader aggregate dimensions (Gioia et al., 2012). Presenting these levels in a formal data structure gives the reader a clear visual overview of how the empirical material supports the final theoretical insights. In this way, the method helps demonstrate that the conclusions are grounded in the interview data, rather than mainly shaped by researcher bias (Gioia et al., 2012).

Finally, the Gioia method balances closeness to the participants' lived experiences with the need to connect the findings to existing theory (Gioia et al., 2012). By requiring the researcher to work at different levels of abstraction simultaneously, the analysis remains closely connected to the practical reality of the hotel floor throughout the development of a broader theoretical interpretation. This makes the method suitable for an abductive analysis, where the researcher moves back and forth between emerging frontline insights and established frameworks, such as the TOP framework. As a result, researchers can identify

new, context-specific insights about the constraints of digital replication, while still producing a clear and theoretically relevant contribution to hospitality management research (Gioia et al., 2012).

The visual representations of the coding structures can be viewed below:

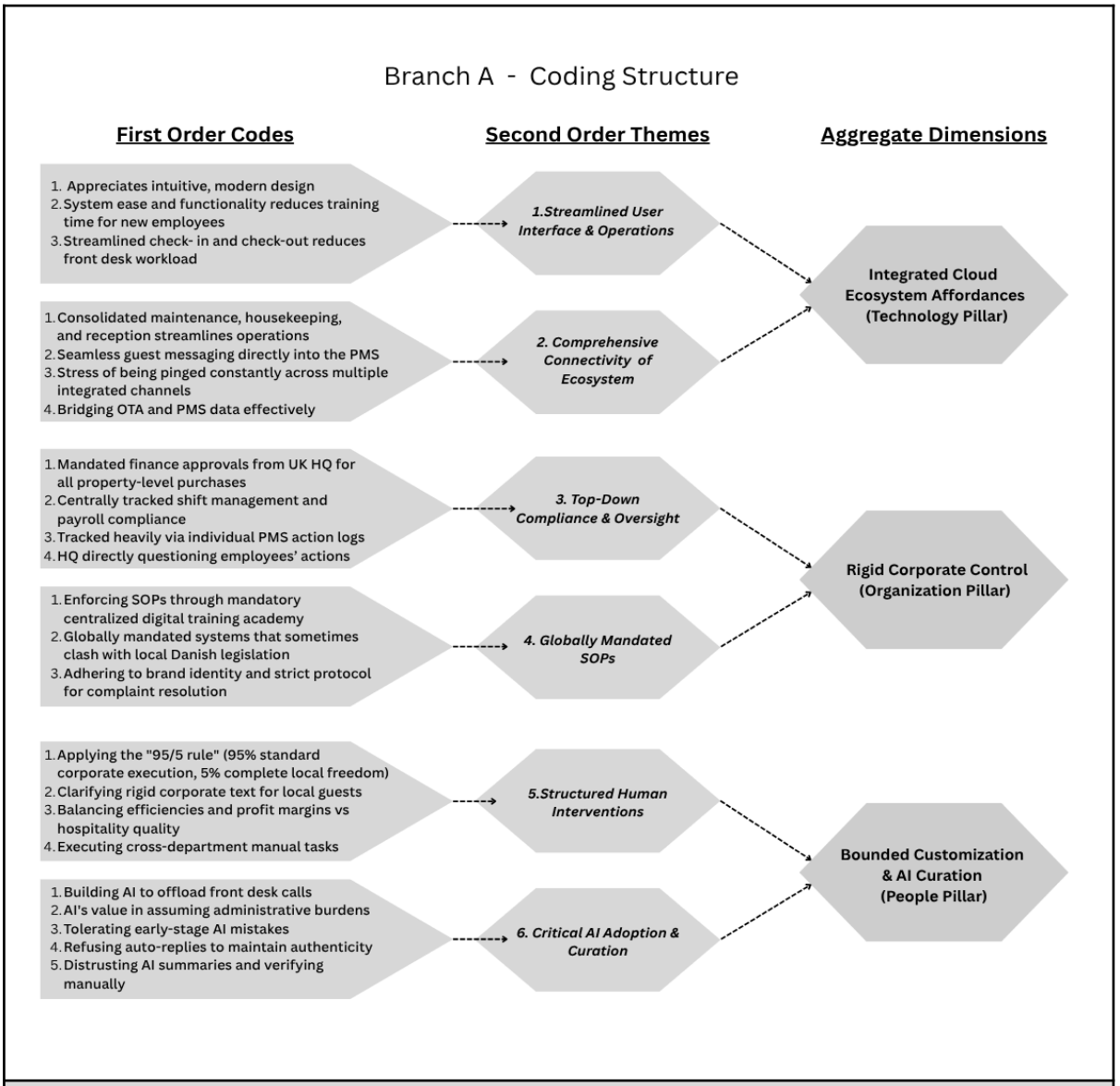

Figure 1: Coding Structure of Findings from Branch A Interviews

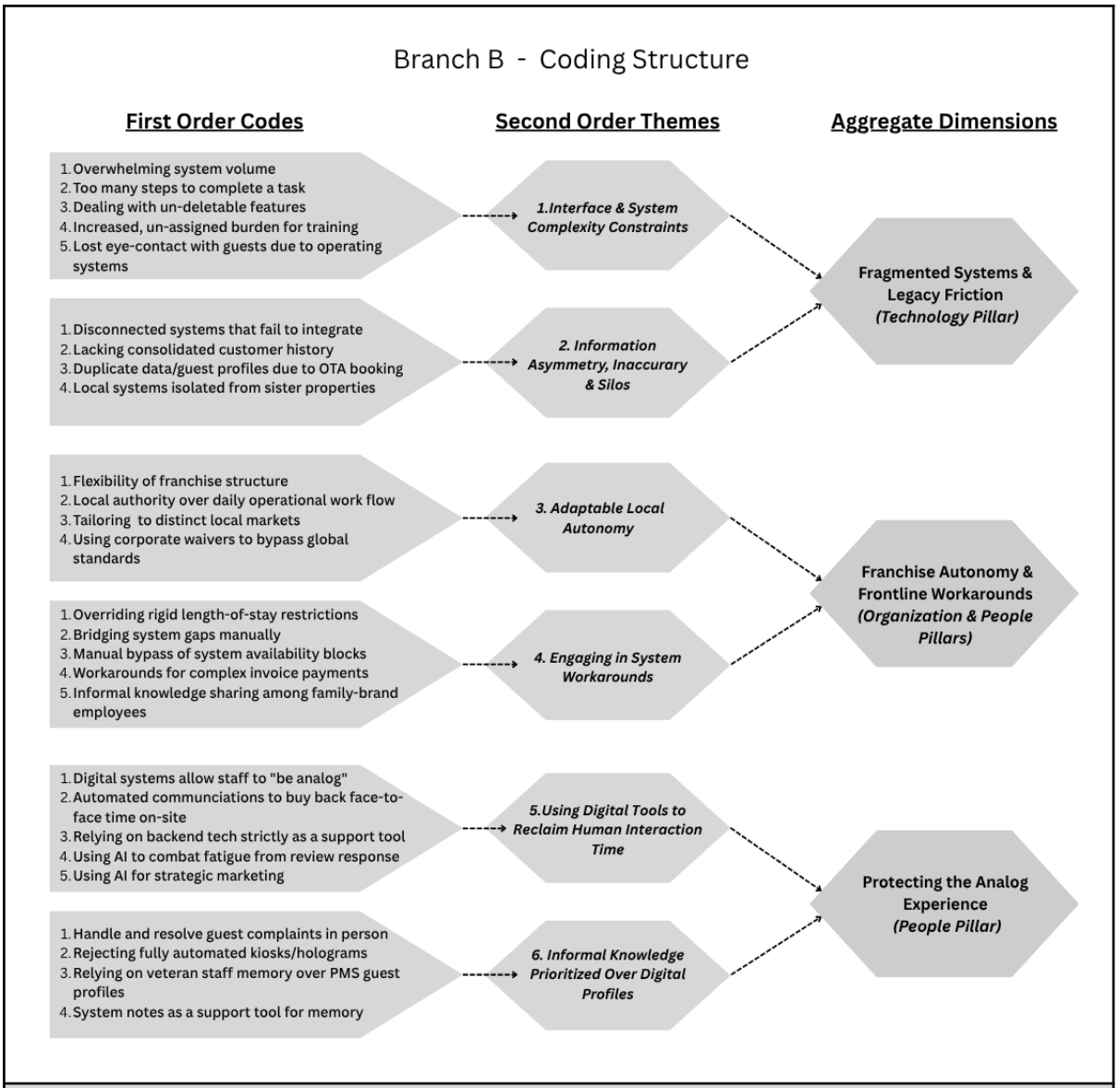

Figure 2: Coding Structure of Findings from Branch B Interviews

While the Gioia methodology was applied exclusively to the primary interview data to capture the lived experiences of the frontline staff, the secondary data required a different analytical approach. The collected corporate press releases, vendor case studies, and franchise guidelines underwent a targeted document analysis (Bowen, 2009). Bowen (2009) advocates for this method as an efficient and intentionally observational qualitative technique, particularly valuable for triangulating interview data and exposing embedded organizational narratives without active researcher interference. Rather than coding these documents for new emergent themes, the authors analyzed them to extract the official standard of intent. That is, how the hotel group management and digital system vendors idealized the Technology and Organization pillars. This allowed the researchers to establish a formal corporate baseline for both the centralized deployment model and the franchise standardization model. Once both

analytical tracks were completed, the findings were triangulated. The corporate narratives from the documents were contrasted against the findings of the interviews, enabling a critical examination of the gap between idealized digital strategies and actual sociotechnical frictions on the hotel floor.

3.6 Trustworthiness

To ensure the quality and robustness of this qualitative multiple-case study, the research prioritizes trustworthiness over conventional quantitative metrics of validity and reliability. Trustworthiness can be assessed through four key criteria: credibility, transferability, dependability, and confirmability (Bell et al., 2019).

Credibility, defined as confidence in the truth of the findings, is established through data triangulation (Yin, 2018): interviewing individuals across different organizational hierarchies, specifically property managers and frontline staff. Gathering multiple perspectives prevents relying solely on a single person's perspective or corporate narratives, producing a more accurate representation of how digital systems are negotiated in practice.

Transferability refers to the degree to which findings can be applied to other contexts. While statistical generalization is not the goal of qualitative case study research, Flyvbjerg (2006) argues that case studies hold significant value for theoretical and practical generalization through the "force of example". By providing rich descriptions of the two hotel chains, including their digital infrastructures and regional contexts, this study allows future researchers to assess how findings might transfer to other hotel chains or service industries (Bell et al., 2019).

Dependability concerns the consistency and transparency of the research process. Kirk and Miller (1986) emphasize that qualitative reliability depends on explicitly documenting each step of the research process. This is implemented through a detailed methodology that outlines the data collection and systematic coding procedures, supplemented by the semi-structured interview guides (Appendix C) and a descriptive list of secondary sources (Appendix B) to ensure full transparency.

Confirmability ensures that findings emerge from the empirical data rather than the researchers' preconceptions. This is managed through reflexive coding practices and objective cross-case synthesis (Bell et al., 2019).

3.7 Methodological Limitations

A primary limitation of this study is its geographic scope. By deliberately selecting two hotel properties within the same country and region, the research design controls for external local market variables and cultural expectations (Saunders et al., 2007). This isolates the corporate digital system and chain philosophy as the primary variables influencing the global-local balance. As a consequence, the findings regarding local responsiveness are bound to this specific regional context and may manifest differently in other international markets.

A further limitation concerns sample size. The study consists of six interviews across two properties, a sample too small to support statistically generalizable conclusions for the global hospitality industry. However, qualitative case studies are not designed for statistical representation (Yin, 2018). The depth of these interviews instead enables an intensive, nuanced exploration of the phenomenon that broader quantitative surveys would fail to capture, supporting theoretical rather than population-based generalization (Flyvbjerg, 2006).

Finally, the study is delimited to the internal organizational perspective, focusing exclusively on managers and frontline staff and excluding the direct perspectives of hotel guests. While guest satisfaction is an ultimate aim of both standardization and customization strategies, centering the analysis on employees is necessary to directly address the research question concerning the internal organizational mechanisms of the Integration-Responsiveness framework.

4. Findings

4.1 Digital Systems Overview (Technology Pillar)

4.1.1 Digital System A

In Hotel Group A, the technological pillar is built around a chain-level Digital System A, configured centrally and then replicated across properties through a pre-defined template. Before a new branch opens, headquarters prepares a complete digital configuration that already contains the chain's room categories, accounting codes, housekeeping rules, and standard pricing structures. This shell configuration can then be duplicated remotely for each new hotel chain, with only limited local adjustments required. This allows the system to be deployed within a short time frame sans the need for on-site installation. The technology functions as a ready-made shell copied from one hotel to another, embedding core operational structures into the system before local staff even begin working.

A key characteristic of Digital System A is it operates as a cloud-based hub with a high degree of connectivity to other applications. The system has an open-API, designed to link with multiple external tools, such as housekeeping management, guest feedback platforms, OTAs, and scheduling software. This architecture enables several different applications to exchange data with the central system, allowing reservations, room status, and guest information to be synchronized automatically across the hotel's digital environment. It also connects the hotel to a wide range of OTAs through a dedicated platform so the property can be visible on many booking sites at once. Overall, the system in Hotel Group A reflects an emphasis on a centrally configured, highly connected environment that can be rolled out quickly and used as the backbone for daily operations.

4.1.2 Digital System B

In Hotel Group B, the technological pillar is organized around a large-scale property management environment designed to serve an international franchise network. Digital System B is a cloud-based platform that integrates the chain's central reservation functions with property-level operations, made to create a unified environment for managing bookings, check-ins, billing, and reporting. It is configured to support a global portfolio and is set up so that properties across different countries can operate on the same core architecture. This allows the chain to maintain a single technological standard for its hotels, regardless of where they are located.

Digital System B is also structured to incorporate diverse financial and regulatory requirements. The system includes embedded rule-sets for tax, accounting, and audit trails, so properties in different jurisdictions follow the appropriate financial procedures within the same platform. The emphasis on reliability and central hosting means that infrastructure and security are managed at the chain level, reducing the need for local technical resources. In addition, the system interface brings core hotel functions together in one place, with

standardized workflows intended to guide staff through operational sequences in a consistent way. Overall, Digital System B reflects a design that prioritizes global standardization, compliance, and centralized control over the digital environment used by local properties.

4.2 Organizational Overview (Organizational Pillar)

4.2.1 Hotel Group A (Centralized Deployment)

Hotel Group A manages its properties through centrally defined standards and a strong reliance on shared digital infrastructure. Strategic documents emphasize goals of expansion and a unified brand concept, translated into practice in how the chain configures and deploys its digital system. As previously mentioned, headquarters prepares a complete shell configuration in advance that is copied to the local branch and activated with minimal on-site configuration, meaning many important elements of the hotel's operations are determined at chain level rather than designed locally.

Local managers must therefore work within this predefined framework, allowing headquarters to maintain a firm grip on operating procedures. The chain additionally describes its properties as having specific concepts and positioning, and the centrally prepared digital environment is a tool to enforce those concepts in each location. In summary, Hotel Group A follows an organizational approach in which headquarters retains control over the main technological and procedural template, while local teams must operate within the boundaries of that template in their day-to-day work.

4.2.2 Hotel Group B (Franchise Standardization)

Hotel Group B operates through a franchise model, in which properties are independently owned and managed but are integrated into a global network through formal agreements and shared systems. Public corporate documents elaborate on how properties can gain access to the franchise's central reservation platform, global distribution arrangements, loyalty programme, and vendor relationships through membership. To benefit from these resources, franchise properties are required to adopt the chain's core digital system and comply with specified standards and performance criteria. Nevertheless, they emphasize that hotels retain their own identity and are run by local owners.

Consequently, organizational control is exercised through a dual mechanism of contractual obligations and centrally mandated infrastructure. Local management retains autonomy over daily operations and property-level branding, but access to the corporate network and its resources is contingent upon strict compliance with the chain's centralized digital ecosystem and adhere to standardized reporting protocols. In summary, Hotel Group B employs a franchise model that couples independently operated properties with a standardized digital core. The corporate chain mandates essential technological and procedural requirements while permitting local owners operational autonomy.

4.3 Interview Findings: Branch A (Centralized Deployment)

This section presents the primary data findings derived from the semi-structured interviews conducted with the staff and management at Branch A. By analyzing the lived experiences of the interim general manager, front office manager, and front desk receptionist, the following three aggregate dimensions emerged. These dimensions map directly to the TOP framework and illustrate how a centralized corporate digital strategy shapes the frontline's ability to balance technological efficiency with local service responsiveness.

4.3.1 Integrated Cloud Ecosystem Affordances (Technology)

The first aggregate dimension observed in Hotel Group A revolves around the technological infrastructure mandated by corporate headquarters. The findings indicate that the implementation of a modern, open API digital environment creates a frictionless and hyper-connected reality for the staff. This dimension is underpinned by two second-order themes: *Streamlined User Interface & Operations* and *Comprehensive Connectivity of Ecosystem*

The frontline staff expressed high satisfaction with the user interface and the operational affordances of their primary software, Digital System A. The intuitive design of the system reduces the learning curve for new employees and relieves significant administrative burdens, allowing staff to streamline the physical check-in process using pre-arrival data. The front desk receptionist (Speaker 3A), highlighted this ease of use:

> *"[Digital System A] is super easy and, I think it's not rocket science so it's also really easy for [employees] to learn, who haven't worked with hospitality before." (Speaker 3A)*

> *"[Guests] can do an online check-in so they don't have to do it when they arrive. So, it makes the check-in process more seamless for them." (Speaker 3A)*

The Front Office Manager (Speaker 2A) further illustrated the ease of use within the system. He emphasized that solutions to issues with the system were very easily accessible, to such an extent that training with the system was often unnecessary:

> *"It's very easy. You can literally google every problem and then there are a lot of resources online that you have immediately. You don't need to have training by your colleague, to be honest. If you face something, you just type it, 'how to correct this invoice' and then there is an answer. But, a lot of PMS might not have these types of facilities." (Speaker 2A)*

Furthermore, the operational flow is heavily augmented by consolidating various departmental tasks into a single platform. The Front Office Manager noted how bridging property management with other functions creates operational coherence:

> *"Now we also use our PMS directly with housekeeping. So it's all in the same place. Same like the maintenance... We also use the same PMS for the maintenance as well. Same like the payment system... everything is so integrated that it's very easy to track." (Speaker 2A)*

However, this pervasive connectivity also introduces intense data merging and continuous digital communication, which can overwhelm the frontline. The integration of messaging apps directly into the PMS and the constant bridging of OTA data via channel managers creates an environment where staff are perpetually connected to multiple digital channels. The Interim General Manager (Speaker 1A), described the resultant "ping fatigue" caused by this ecosystem:

> *"I mean right now, when I sit in the office it pings on Teams and then I get an email and then I get an SMS. They're like how did I, how did I communicate with the other guests now?... I think technology has made mankind much more impatient... And I think it can cause stress." (Speaker 1A)*

4.3.2 Rigid Corporate Control (Organization)

While the integrated cloud ecosystem empowers the frontline with streamlined operations, the second aggregate dimension highlights the organizational trade-off: the technology acts as a rigid fixed element that enforces strict compliance. The themes of *Top-Down Compliance & Oversight* and *Globally Mandated SOPs* reveal how the centralized strategy restricts local autonomy.

The seamless connectivity of Digital System A allows the UK-based headquarters to maintain comprehensive oversight over Branch A's daily operations. This top-down supervision is felt at all levels of the hotel. The Interim General Manager detailed how financial and operational approvals are tethered to the central office, slowing down local procurement:

> *"We have centralized finance in the UK... I upload a vendor and wait for the approval of that vendor to be brought in, I then make the purchase order... then it goes to various persons for secondary approvals." (Speaker 1A)*

Additionally, the Interim General Manager noted the friction that occurs when globally mandated systems clash with local Danish legislation, such as in a payroll system scenario:

> *"Normally when you work in a chain, they consolidate so everybody uses the same [systems]… The challenge when we are in so many countries in Europe is that one legal supplement to a salary in Portugal is different to Denmark... there are systems that I would have preferred, that work [better] under Danish legislation, but we are not allowed to use them." (Speaker 1A)*

Similarly, frontline staff feel the weight of this visibility through individual system action logs. While acknowledging its necessity for security, the Front Desk Receptionist expressed frustration at the lack of local context when head office questions their actions:

> *"I like that it's visible... There's also an action log where you can see who did what... But in other scenarios, there's also times when I've experienced someone from a head office reaching out and asking 'Why did you do this?' and it's like, they don't even know the whole story behind it... I have my reasons." (Speaker 3A)*

Furthermore, according to the Front Office Manager, the centralized deployment strategy enforces globally mandated standard operating procedures (SOPs) from the very beginning. Completing a centralized digital training academy is mandatory for all staff during onboarding, though it seemed not to be a point of contention. It is important to note, that this was described as not necessarily unique to this hotel chain:

> *"[Name of Centralized Training Academy], every hotel does have some. It's a sort of academy where they put a lot of mandatory courses that the staff needs to go through. It's compulsory courses about health, safety, any SOP communications… Even a particular hotel specifically, if there are any rules for that hotel of that specific country or across the chain. If there is any protocol that we need to maintain that needs to be across all the chains, equally implemented… I think HR puts the document here that we need to go through." (Speaker 2A)*

4.3.3 Bounded Customization & AI Curation (People)

The final aggregate dimension captures the human response to the intersection of highly capable technology and rigid organizational control. Forced to operate within strict digital boundaries, the staff rely on *Structured Human Interventions* and *Critical AI Adoption & Curation* to carve out spaces for authentic, localized hospitality.

Because the system manages the bulk of the standardized guest journey, the staff focus heavily on executing the final nuances of the service encounter. The Interim General Manager described this as the "95/5 rule", a structured approach to intervention where the technology handles the standard execution, allowing humans to orchestrate the final customized touches:

> *"Those 5% are to surprise the guests. Do whatever you want to make that guest have a magical experience... I hope I can give them the tools to surprise." (Speaker 1A)*

Furthermore, the Interim General Manager described situations at other hotel chains where efficiencies and profit margins were prioritized over hospitality quality. The Manager continued to emphasize knowing where to draw the line between minimizing cost and providing a great guest experience.

> *"I think as cost rises, everybody's looking at how you can actually make the match between a great guest experience but still make some money. Because in the end of the day if you don't [provide a great guest experience], then you don't have a business… Especially [other hotel chain named] has been very very focused on efficiencies. And are they always for the better? For example [other hotel chains named], three or four years ago they stopped with daily housekeeping… and they say that it's based on sustainability. Fine, but where do you draw the line? So to an extent the profitability hunt is causing some harm to what hospitality is all about." (Speaker 1A)*

Occasionally, automatic communications through the digital systems also create a need for staff to clarify rigid corporate texts for local guests. The Front Office Manager provided an example of mitigating misunderstandings caused by the default corporate settings:

> *"...we mentioned that we do daily housekeeping, but on request. So, I just asked the head office to clarify it. You know, so that guests understand that it's not by default." (Speaker 2A)*

Crucially, as Hotel Group A heavily integrates artificial intelligence into its ecosystem, the staff actively police and curate the human-AI boundary to protect the authenticity of the service. Employees refuse to let automation fully replace the human touch. The Front Desk Receptionist explicitly rejected the use of auto-replies generated by external booking channels, preferring manual personalization:

> *"That function on [OTA website] where it will make an auto reply. Yeah I don't like that because I'm very like, when it comes to answering emails or requests I'm very against using [AI]. I like to personalize the message and actually take consideration of what the guest is telling me." (Speaker 3A)*

However, this curation is not entirely driven by distrust. The interviewees also recognized AI's value in assuming administrative burdens and they are pragmatically accepting its developmental learning curve. For instance, the Front Office Manager highlighted the efficiency gained when utilizing AI to clean up complex data silos, such as merging duplicate guest profiles. These benefits allow them to remain tolerant of its early-stage imperfections:

> *"Whenever a new technology comes there is always a lot of challenge in the beginning until the technology gets mature... like when a guest repeatedly makes a reservation and the system creates multiple profiles... AI makes it better to find it out to merge them together. As AI is getting better the mistakes in merging will be less and less... Now they can see many factors to merge them quickly and efficiently so it reduced the mistakes of the system as well and also it increased the efficiency." (Speaker 2A)*

4.4 Interview Findings: Branch B (Franchise Standardization)

This section presents the primary data findings derived from the semi-structured interviews conducted with the staff and management at Branch B. By analyzing the lived experiences of the Director of Sales, General Hotel Manager, and Front Office Manager, three aggregate dimensions emerged. These dimensions map directly to the TOP framework and illustrate how a franchise standardization strategy, paired with a conventionally structured architecture, creates unique sociotechnical frictions that are primarily resolved through frontline autonomy and human agency.

4.4.1 Fragmented Systems & Legacy Friction (Technology)

The first aggregate dimension captures the daily struggles of operating within an older, decentralized, or disconnected technological infrastructure. Unlike the seamless ecosystem observed in Branch A, the digital environment at Branch B is characterized by *User-Interface & Navigation Barriers* and *Information Silos & Data Disconnects*.

Staff frequently experience navigational friction within their primary platform, Digital System B. Because the software is designed as a heavy, enterprise-class system built for global compliance rather than local agility, it imposes rigid, un-deletable features on the staff. The Front Office Manager (Speaker 3B), highlighted how these global system standards clash with local Swedish operational realities, creating administrative hurdles:

> *"It's originally from the USA, I think, so there are some payment methods that we don't use at all, like cash payments, that we can't simply delete from our system. So that sometimes gets a bit confusing because sometimes the front desk accidentally presses cash and then I need to... yeah it's a big hassle." (Speaker 3B)*

Furthermore, the complexity of navigating this system directly impacts the service encounter. The Front Office Manager further noted that because it requires a lengthy process to complete tasks, the focus it requires to complete a task ultimately becomes a major friction point. It can require taking focus away from the guest, which is the main goal of hospitality:

> *"If you're not fully comfortable with the system, you're losing eye contact with the person a lot. Because you're so focused on what to press and everything. So yeah, it takes away the personal connection in that way." (Speaker 3B)*

This navigational complexity also creates a notable sociotechnical disconnect between management and the frontline regarding system onboarding. From a manager perspective, the software is viewed as a standard, functional tool. The Hotel General Manager (Speaker 2B), indicated that there is no additional training necessary for staff to use the basic processes, assuming the baseline corporate setup is sufficient:

> *"We don't really have any extra training for the system itself... they just get the standard introduction when they start, and the rest they learn by doing." (Speaker 2B)*

However, the operational reality on the floor contrasts directly with this view. Because the interface lacks intuitive design and is burdened with rigid features, the actual learning curve is steep. To absorb this technological friction, the Front Office Manager is forced to take on unassigned administrative labor. She explained that she has to take on additional work to create custom instructional videos for her reception team, just to teach them how to navigate the system's daily hurdles and complex workflows:

> *"I actually have to record my screen and make instructional videos for the staff to show them how to do certain things... because there are just so many steps and clicks to remember, it gets too confusing otherwise." (Speaker 3B)*

Beyond the interface, the technology pillar is heavily fragmented by information silos. The Director of Sales (Speaker 1B) expressed significant frustration over operating disconnected systems, specifically noting that her local customer relationship management (CRM) software does not integrate with the central PMS. This disconnect prevents the creation of accurate, consolidated reporting and obscures the full picture of guest history:

> *"My customer system, it's not included, and that's not very good... I can't be the only person in the world that would want to have a nice report every day… You can't really rely on the figures because of [the disconnected systems]." (Speaker 1B)*

4.4.2 Franchise Autonomy & Frontline Workarounds (Organization & People)

The second aggregate dimension reveals how the organizational structure of a franchise acts as counterbalance to the technological frictions outlined above. This dimension is defined by *Local Autonomy & Strategic Exceptions* and *Manual Agency & Rule Bending*, demonstrating how the franchise model grants the freedom necessary for staff to create manual bridges across system gaps.

As Branch B is part of a family-owned franchise rather than a strictly corporate-owned chain, local managers possess the organizational authority to bypass certain strict chain hierarchies. The Hotel General Manager, emphasized that this structural independence provides crucial flexibility:

> *"Since we're not [a strict corporate-owned chain] we can probably do whatever we want… [strict corporate-owned chains] have all the same systems they work in. In [Hotel Group B] we're individually owned hotels. So we can use one PMS. Our hotel in Örebro, they use another PMS. So we're not stuck in one way of working because we work in different locations." (Speaker 2B)*

This autonomy trickles down to the frontline, manifesting as goal-driven workarounds where employees intentionally bend or bypass rigid system rules to satisfy local guest needs. While a centralized algorithm may dictate strict parameters for room availability or length of stay, the staff at Branch B feel empowered to workaround the technology. The Front Office Manager provided a clear example of exercising this manual agency against corporate revenue management algorithms:

> *"Every day since we work with revenue management as well and they have a lot of restrictions, like length of stay, but that's part of their strategy and we're not supposed to override that. But I feel like since I have been working with revenue management before, I have the confidence to work around it and override it, and still have the confidence that I'm not doing anything bad for the business." (Speaker 3B)*

Additionally, the franchise framework itself allows for strategic exceptions. The Director of Sales noted that while global brand standards are audited yearly, the hotel can utilize waivers to legally bypass specific corporate mandates that do not translate well to the local market, structurally permitting the People to prioritize local responsiveness over global integration.

4.4.3 Protecting the Analog Experience (People)

The final aggregate dimension highlights a profound cultural stance within Hotel Group B. That is that technology is viewed strictly as a backend support tool designed to preserve traditional, face-to-face hospitality. This dimension is driven by the themes of *Tech as a Time Saver* and *Relying on Human Touch*.

Rather than seeking to digitize the entire guest journey, the staff use digital systems explicitly to reclaim time for analog interactions.The Front Office Manager describes using AI behind the scenes to prevent becoming burnt out from menial tasks. For example, they use it to generate responses to online reviews on various different channels, or to improve marketing messaging, in the pursuit of having more time to focus on the guest in front of them:

> *"Yeah, sometimes if we get a lot of feedback through different channels… and it's getting too much to formulate an answer… I want to be available to my staff and to provide a good service to the guest. The system is there, of course, as a support function to me. But I rely mostly on the people." (Speaker 3B)*

The Hotel General Manager summarized this ethos, viewing the digital system as a mechanism for efficiency and affordance meant to alleviate tasks taking away from human connection:

> *"I think the system gives us more time to be analog, so to say... a hotel is, it's a hotel. You have the beds, you have the shower, but it's the people inside that work that makes the guests come back. So I think being more digital helps us, gives us more time to press on those things." (Speaker 2B)*

To further support this ethos, the manager emphasized that while digital tools are helpful, they must never overshadow the human element, explicitly stating his preferred ratio for service delivery:

> *"We will never put the hotel in complete digital mode because it will always be like 70/30; 70 people and 30 [technology]... we're service givers, that's what we love to do." (Speaker 2B)*

Similarly, the Director of Sales reinforced that technology should function strictly as an invisible backbone that handles data processing, such as pricing and segmenting, to enable the creation of even better personalized service, rather than becoming the face of the hotel:

> *"We have to follow the world, follow what's happening, but we have to think all the time... that the system should not take over." (Speaker 1B)*

Consequently, Branch B places a higher premium on informal human knowledge than on digital profiles. True personalization often stems from veteran staff memory rather than the central software. The Hotel General Manager proudly noted that his long-term employees form genuine bonds with repeat visitors:

> *"We have a [staff member] who has been here for soon 30 years and she basically knows exactly every regular guest we have here, so she doesn't need the information we have there [in the system]." (Speaker 2B)*

When such informal knowledge is unavailable, the technology is merely used to simulate this intimate human connection. As the General Manager went on to explain, staff use the system to "fake it" by quickly checking a profile to confirm the guest identity and history before greeting them with familiarity, purposefully maintaining the analog memory illusion.

This dedication to the human element also drives how the staff handle complex interpersonal situations, such as service recoveries. The Front Office Manager highlighted that she relies purely on analog intuition rather than digital records to handle guest complaints:

> *"It's much easier to defuse a situation in person than via email… [via digital systems] you don't get the body language, tone and everything." (Speaker 3B)*

Ultimately, this persistent reliance on human presence results in an active rejection of fully automated, low-touch service models. The Director of Sales fiercely advocated for this analog focus, explicitly rejecting the technological determinism seen in some modern hospitality trends:

> *"There is one [hotel] that has a hologram. So there is no real person when you check in... I don't really like it... the core business in this industry [is] to meet people, to see people, to give service and of course when it's too much attention drawn from this to the system... you shouldn't forget that." (Speaker 1B)*

4.5 Summary of Findings

Table 2: Matrix Representing Summary of Findings

	Technology Pillar	**Organization Pillar**	**People Pillar**
Hotel Group A	Modern, cloud-based PMS built on an open-API ecosystem to allow software integrations. Rapidly deployed pre-configured digital shells. Highly connected hub that seamlessly consolidates operations into a single, intuitive interface.	Highly centralized deployment model. Headquarters tightly controls operational templates and standards. Active HQ surveillance via PMS system action logs ensure uniform brand consistency across newly opened branches.	Frontline staff appreciate the highly user-friendly system and how it absorbs administrative burdens, streamlining workflows. However, experience ping fatigue and psychological strain from intense oversight. Actively skirt system boundaries to protect authentic human interactions.
Hotel Group B	Robust, enterprise-class PMS designed primarily for global financial compliance and central reporting. Cloud-based platform unifying bookings, check-ins, billing, and reporting. Legacy infrastructure prioritizes standardization over the digital environment used by local properties.	Franchise standardization model, balancing global network integration with independent property ownership. Retains global standards properties must meet, but allows local managers to bypass certain corporate mandates. Prioritizes local responsiveness and operational flexibility.	Staff experience the system as a support tool to be more analog. Rely heavily on veteran analog memory and human intuition, intentionally keeping the technology strictly in the background. System complexities require added training labor and manual workarounds to navigate. Certain features create friction.

5. Discussion

5.1 Internal Case Analysis: Corporate Intent vs. Lived Reality

This section conducts a within-case analysis for each hotel group, contrasting the formalized standard of intent, as established by corporate press releases and vendor marketing, with the sociotechnical reality experienced by frontline staff. By applying Sociotechnical Systems (STS) theory, this analysis evaluates the degree to which these digital strategies achieve joint optimization (Appelbaum, 1997).

5.1.1 Hotel Group A: The Trade-Offs of Frictionless Automation

The corporate narrative surrounding Hotel Group A's digital transformation relies heavily on the promise of frictionless automation. Vendor case studies emphasize accelerated chain onboarding and the utilization of open API shell configurations to deploy a fully integrated, cloud-based ecosystem remotely. This narrative asserts that standardizing the backend technology will inherently free up the frontline staff to focus entirely on delivering a "perfect digital guest journey". The corporate intent assumes that seamless digital integration automatically equates to a seamless human experience, a statement that veers near to technological determinism (Wyatt, 2008).

From a purely Technological and Organizational standpoint, the findings confirm that this strategy is highly successful. In line with Leonardi's (2011) theory of technology having the possibility to act as empowering affordances, the system assumes heavy administrative burdens, such as pre-arrival check-ins and digital check-outs. The modern user interface of the PMS significantly reduces the learning curve for new hires (as noted by Speaker 3A), and the consolidation of housekeeping, maintenance, and payments into a single ecosystem greatly improves operational coherence (as highlighted by Speaker 2A). This allows the organization as a whole to achieve hyper-efficiency and scale rapidly.

Yet, based on the complex trade-offs between technological affordances and constraints (Leonardi, 2011), the degree of joint optimization (Appelbaum, 1997) within Hotel Group A is nuanced. The corporate intent succeeds in providing the frontline, representing the People pillar, with empowering tools that enhance their working experience, allowing the front-line staff to benefit from a streamlined workflow. For instance, the AI-assisted guest profile merging acts as a genuine affordance that reduces administrative errors and a trade-off that local management embraces despite early-stage imperfections. In that sense, the organizational structure is able to leverage this high degree of automation to support localized hospitality, illustrated by the General Manager's (Speaker 1A) "95/5 rule". Rather than an outright limit on local responsiveness, this rule is a strategic mechanism designed to utilize the 95% standardized execution to give staff the time, funds, and tools to personalize the final 5% of the guest experience.

However, sociotechnical friction still emerges where centralized corporate oversight infringes upon frontline autonomy. Since the technology acts as an unchangeable fixed element in the chain's Flexible Replication strategy, the frontline is disallowed traditional operational autonomy. The People pillar is put in a position where it must absorb the frictions, as shown in the additional workload for front desk staff. This includes the added tasks of justifying their in-system actions to HQ scrutinization (as described by Speaker 3A), or when staff must manually clarify inflexible corporate policies to avoid misunderstandings with local guests (as suggested by Speaker 2A). Furthermore, the constant connectivity intended to empower the staff simultaneously subjects them to certain psychological tolls, such as intense ping fatigue (as admitted by Speaker 1A).

Therefore, the frictionless automation promised by the corporate narrative is to some extent materialized, but remains flawed. While the system successfully provides powerful affordances that elevate frontline capabilities, it also introduces rigid oversight boundaries that staff must actively manage and push back against to protect the authenticity of the service encounter.

5.1.2 Hotel Group B: Legacy Compliance Against Local Culture

For Hotel Group B, the official corporate narrative presents the franchise model and Digital System B as a combination of global support and technological robustness. Chain-level communication, such as press releases, emphasize that the integration of the chain's reservation platform with a cloud-based property management environment is intended to connect all hotel operations on a single platform. This is to promote configurable workflows that increase efficiency, reduce operating expenses, and optimize staffing. The system is promoted as intuitive and mobile-enabled, designed to simplify work for associates while ensuring financial and regulatory compliance.

The empirical picture at Branch B reveals that this intent is only partially realized. On one hand, frontline staff report that Digital System B functions as a necessary backbone for core tasks. The Hotel General Manager (Speaker 2B) repeatedly refers to the system as a support function that "gives us more time to be analog", highlighting that automated handling of routine administrative work enables staff to focus on the interpersonal aspects of hospitality. From this perspective, the technology is viewed as a tool rather than an end in itself, an invisible infrastructure that should free employees to invest their time in guest interaction. This aligns with the franchise ethos that technology should underpin, rather than replace, traditional service.

However, floor staff also describe significant friction in their interactions with the system. The Front Office Manager (Speaker 3B) notes that the platform retains undeletable payment options, such as cash, that are not relevant in the Swedish context. This design choice occasionally leads to mistaken selections and additional corrective work. Additionally, Speaker 3B explains that the number of steps required to complete routine tasks is complex enough that they must individually produce screen-recorded training materials for new

colleagues, acting as a shock absorber (Korczynski, 2002) in the organization to aid colleagues. While the Hotel General Manager (Speaker 2B) describes training as a straightforward introduction followed by “learning by doing”, the need for these informal instructional videos indicates a steeper learning curve and transfers unofficial, hidden training labor onto employees further down in the local hierarchy. It also is indicative of local, hierarchical knowledge asymmetries that add to the overall operational frictions caused by the digital systems.

Therefore, the franchise structure simultaneously mitigates and amplifies these tensions. Organizationally, the property enjoys a degree of autonomy that allows it to deviate from central guidelines when necessary. Speaker 2B emphasizes that, as an independently owned hotel within a larger brand, they can select certain local tools and work around restrictive system settings when this is judged to be in the best interest of guests and the business. This autonomy permits staff to override revenue-management rules or interpret system outputs flexibly, using their experience to balance corporate strategy with local market knowledge. In this sense, the organizational model provides room for human agency to correct or soften rigid technological prescriptions.

Viewed through Sociotechnical Systems theory, the resulting configuration is somewhat contradicting. Digital System B embeds a technical design oriented toward global standardization and compliance, which does not always align with local operational realities. This mismatch produces sociotechnical friction and gives rise to the workarounds described by Alter (2014), where employees introduce goal-oriented adaptations, such as creating their own training resources or selectively bypassing algorithmic restrictions, to bridge the gap between formal procedures and practical service delivery. Nevertheless, Hotel Group B grants sufficient organizational discretion for staff to use the system as a supportive tool rather than a rigid constraint, as the local property actively reclaims space for analog hospitality and human judgment.

5.2 Cross Case Analysis: Centralizing vs. Franchising

5.2.1 Navigating the Integration-Responsiveness Tension

A cross-case comparison reveals that the contrasting organizational structures of Hotel Group A and Hotel Group B fundamentally dictate how digital transformation is utilized to navigate the Integration-Responsiveness (I-R) tension (Bartlett & Ghoshal, 1989). Rather than viewing technology as a strictly limiting force, this analysis demonstrates that both chains use their respective digital architectures as a method to enable service delivery. However, there are distinctions in how each sociotechnical strategy aims to balance by balancing the I-R trade-offs.

When evaluating how the two groups achieve global integration, the role of technology as a fixed element in the Flexible Replication model diverges sharply. For Branch A, a newly opened location this year, a highly centralized, modern cloud ecosystem serves as an effective

replication tool. Digital System A's capability for shell configurations unique to Hotel Group A enables headquarters to rapidly deploy a fully integrated IT infrastructure. As described within the frontline interviews, the system paired with fortified SOPs drastically accelerated the property's start-up phase and succeeded in establishing a unified global baseline for Branch A. However, this intense level of integration introduces specific institutional constraints. Given the shell configuration of the system is mainly optimized for UK operations, certain functions clash with local host-market realities, such as financial and scheduling systems that fail to seamlessly accommodate Danish labor legislation.

Conversely, Hotel Group B structurally prioritizes franchise autonomy over seamless global integration. As noted by Wang et al. (2010), high customization allowed by franchise standardization often trades off with standardization. To that end, it is clear that Hotel Group B's outlook towards promoting their member hotels' localized freedom comes at the direct expense of systemic cohesion, resulting in fragmented legacy IT and disconnected data silos. However, a caveat must be noted that Branch B's management actively chooses operational freedom over digital efficiency. Branch B is a long-established, family-owned hotel with a history of varying franchise memberships. For them, local flexibility is deeply ingrained in their organizational culture. The technological fragmentation they experience is not merely a top-down franchisor limitation, but partly a result of their own strong ideals regarding the operational freedom necessary to serve their specific guests. Rather than submitting to total integration, Branch B accepts the trade-off of a flexible franchise that allows for deep customization, even though it forces them to utilize Digital System B, a system shown to be flawed and difficult to navigate.

Thus, the two strategies present a clear trade-off: Hotel Group A leverages highly integrated technology to achieve rapid global replication at the cost of local institutional friction, whereas Hotel Group B accepts technological fragmentation as the necessary cost of preserving their members' structural local autonomy.

5.2.2 The Shifting Nature of Frontline Labor

The two hotel cases reveal contrasting patterns of sociotechnical misalignment and compensation work on the hotel floor. In both settings, frontline employees engage in joint optimization by translating chain-level systems into locally meaningful service, yet the nature of that work diverges.

In Branch A, the integrated Digital System A functions as a powerful digital affordance (Leonardi, 2011), widely experienced as user-friendly and individually empowering. The system is straightforward enough to learn, even for colleagues lacking a hospitality background, enabling core workflows to be completed with minimal clicks. Branch A's highly integrated system also heavily simplifies workflow, consolidating guest communication and reservation data inside a single platform. In line with the TOP framework, technology successfully shifts frontline effort away from routine administration work, reducing the cognitive load spent on basic tasks.

This directly contrasts Branch B's experience, where employees experience Digital System B not as a frictionless backbone, but as a complex infrastructure. Its navigational difficulty is to the extent that staff are forced into positions of compensatory labor, dedicating extended time to develop unofficial local manuals and conduct intensive onboarding to facilitate use. Furthermore, rigid system limitations create unavoidable errors that require constant corrective work. These operational frictions are severely compounded by data fragmentation and the lack of integration between the PMS and local CRM tools. In response, the hotel leans heavily on analog memory and relational continuity. Long-tenure staff bypass the fragmented system entirely by recognizing regular guests from memory, utilizing the PMS primarily as a fallback support mechanism to help newer colleagues simulate this analog familiarity.

However, Branch A's positive experience is not without its caveats either. The same integrated infrastructure that eases select labors also introduces new forms of added labor for the frontline. As the central system automates the bulk of the guest journey, the staff at Branch A must actively institute local boundaries to protect the authenticity of the service encounter. Additionally, the rigid nature of automated corporate communications requires staff to perform clarification labor for local guests to prevent misunderstandings. Thus, the People pillar in Branch A experiences significant trade-offs. While the system successfully lowers basic administrative cognitive load, it generates a new workload centered around curating and manually softening rigid corporate interfaces to deliver customized hospitality.

As a result, the cases illustrate that joint optimization is fragile in both models, resulting in compensatory labor in different ways. Digital System A produces highly efficient digital workflows, but at the cost of psychological strain and constrained local discretion on staff at Branch A. Branch B preserves a strong, autonomous analog hospitality ethos, but only by forcing the frontline to absorb significant operational and cognitive burdens to bridge the gaps in the digital architecture of Digital System B.

6. Conclusion

6.1 Synthesis and Key Findings

This study set out to explore the sociotechnical realities of digital transformation within the hospitality industry. The central findings reveal that regardless of whether a hotel focuses on the centralized deployment of a highly integrated ecosystem (Hotel Group A) or operates within a conventional franchise infrastructure (Hotel Group B), should corporate headquarters prioritize a digital strategy of top-down integration and employee compliance over frontline usability, joint optimization is bound to remain fragile. Furthermore, the contrasting digital strategies shape in distinct ways how frontline employees manage local service responsiveness.

In interviews with local branch employees of Hotel Group A (the centralized deployment model) the highly integrated PMS and open API ecosystems successfully absorb immense administrative burdens. However, the resulting extensive oversight and rigid corporate interfaces force the frontline to perform continuous mediating labor to soften digital boundaries and protect authentic guest interactions. In the branch of Hotel Group B (the franchise-style standardization model) local autonomy is prioritized, but at the cost of a mandated fragmented legacy system. To deliver localized service, employees must invent manual workarounds to overcome technological constraints, thereby absorbing significant operational friction to maintain analog hospitality. Ultimately, both models require complex, continuous forms of human agency to compensate for digital architectures that are not fully optimized for the frontline user.

6.2 Research Aim and Objectives

The primary aim of this research was to answer the question:

"How do centralized versus franchised digital standardization strategies influence frontline employees' capacity to jointly optimize corporate systems at the local level?"

By answering this question, the study successfully advances the theory of Flexible Replication (Jonsson & Foss, 2011) by fundamentally reconceptualizing its fixed elements for the digital age. Historically, international hotel chains replicated their core service formats through physical architecture and printed operational manuals. Today, this research demonstrates that cloud-based PMS platforms, API ecosystems, and algorithmic workflows have become the primary basis for corporate replication. This greatly alters the frontline experience of local adaptation. A traditional, printed SOP manual can be temporarily set aside by an employee to accommodate a unique, localized guest request, whereas a digital system ingrained into workflow cannot. As these modern fixed elements are required in nearly every daily task, localized adaptation cannot be perceived as merely a behavioral choice. Instead, it requires active sociotechnical negotiation.

6.3 Practical Implications

Despite the sociotechnical friction observed, this study cautions against a wholly pessimistic or deterministic view of digital transformation. As digital systems become an inevitable and necessary foundation of the hospitality industry's future, their benefits must be assessed holistically. The ultimate takeaway for industry practitioners is that the future of international hospitality should not require a binary choice between standardized digital efficiency and localized human warmth. For successful digital transformation, corporate headquarters must allow technology to grow past merely being a tool for global oversight and financial compliance. Future digital architectures would benefit from adaptable elements built directly into the software that empower the frontline to personalize their digital workflow.

Additionally, while this study exists within the specific context of international hotel chains, the theoretical implications may extend beyond the hospitality industry. The sociotechnical friction observed is applicable to other multinational service sectors characterized by high customer contact and centralized digital infrastructure. Environments such as global retail, transnational banking, and international healthcare services similarly rely on standardized digital templates that must interface with localized, host-market realities.

6.4 Limitations and Future Research

While this study provides in-depth sociotechnical insights, several limitations must be acknowledged. First, the geographic scope is confined to properties within the Nordic region, Sweden and Denmark. Local responsiveness is heavily influenced by regional culture, labor laws, and guest expectations. Therefore, the specific workarounds and mediating labor observed here may manifest differently in other international markets. Second, the qualitative multiple-case study design relies on a small sample size of six in-depth interviews. While suitable for theoretical exploration, the findings are not statistically generalizable across the global hospitality industry. Finally, the research scope was strictly limited to the internal organizational perspective, focusing exclusively on frontline staff and local managers.

These limitations present clear avenues for future research. Following studies could explore how these sociotechnical dynamics operate across vastly different cultural contexts to test the transferability of the findings. Additionally, future research should incorporate the external guest perspective, investigating how the frontline's invisible mediating labor and manual workarounds directly influence guest satisfaction and brand consistency in highly digitized hotels.

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Appendix A - Glossary

AI curation: The use of AI to select, organize, and present relevant content or information. It helps filter large amounts of data and provide more personalized, useful, or efficient recommendations.

Application programming interface (API): A digital resource that helps different systems work together. APIs connect old and new systems, allowing different digital services and resources to function smoothly within platforms and ecosystems.

Back-end: Refers to the internal systems and processes that help an organization run smoothly, such as supply-chain management, enterprise resource planning, and centralized databases. It includes administrative tasks like recording data and handling invoices, which are increasingly automated to improve efficiency.

Chain-level digital systems: Technologies used across an entire corporate group. These platforms connect multiple locations within one digital ecosystem, making operations smoother, supporting knowledge sharing, and helping create a consistent customer experience across all properties.

Chain logic: The way decisions, processes, or systems are structured across a corporate chain. It helps ensure that different locations follow shared standards, routines, and priorities while operating as part of the same organization.

Cloud-based: Systems that use the internet to provide flexible digital resources when needed, without requiring the organization to manage its own IT infrastructure. They offer affordable computing power, flexibility, security, and real-time access to data.

Customer relationship management (CRM): A technological tool used to manage customer interactions and automate business tasks. It tracks customer profiles and buying behavior to identify sales opportunities, support personalized service, and improve efficiency.

Corporate interfaces: Shared systems, tools, or points of contact that connect local units with the wider corporate organization. They help transfer information, coordinate activities, and ensure that local operations follow broader corporate standards.

Digital infrastructure: Foundational technologies that connect the physical and digital world. They support decentralized operations, smooth information sharing, and advanced services, often by improving or replacing traditional centralized systems.

Enterprise-class system: A large-scale digital system designed for use across an entire organization. It supports complex operations, connects different departments or locations, and helps manage business processes reliably and efficiently.

Franchise-style: A strategy where companies create many similar locations that offer the same products or services. The support from the parent company can vary, from fully helping each location operate to only giving basic materials and collecting fees. Standardization in this model limits differences between locations to reduce costs, keep service quality consistent, and strengthen the brand.

Interface: An interface is a point of interaction between two systems or components, allowing them to communicate and exchange information. It can also mean to interact with another system, person, etc.

Open application programming interface (open API): A public digital connection that lets different software systems work together. It makes it easier for other developers or platforms to connect, share data, and add new functions.

Payment routing: The process of directing a customer's payment through the right digital system or provider. It helps make transactions faster, more reliable, and easier to manage across different platforms or locations.

Ping fatigue: The stress or tiredness employees feel from receiving too many digital notifications or alerts. It can make it harder to focus, prioritize tasks, and respond effectively.

Property management system (PMS): A digital tool used in hotels to make daily operations easier and more automatic. It helps manage tasks such as reservations, guest check-ins, and service coordination, improving overall efficiency.

Service recovery: Involves dealing with service problems and customer requests. Technologies help service providers respond faster, solve issues more quickly, and improve the overall customer experience.

Shell configurations: Flexible system setups that provide a basic structure while allowing local adaptations. They help organizations keep shared standards while giving individual locations some freedom to adjust processes to their specific needs.

Sociotechnical: A perspective that looks at how social systems, such as people and culture, interact with technical systems, such as tools and technology. It emphasizes that organizational outcomes are shaped by how these parts work together, rather than by either one alone.

Standard operating procedures (SOPs): Documented routines and manuals that guide employees, control quality, and reduce mistakes. Organizations also use SOPs to collect, structure, and share practical knowledge across different units.

Technological infrastructure: Combines hardware, software, and network technologies to track information in real time and improve processes. It supports digital transformation, smart environments, and decentralized operations across different industries.

Triangulate: Combining several data sources or research methods to study the same topic. This helps confirm the findings, reduce bias, and make the research results more credible, reliable, and valid.

Appendix B - Description of Secondary Sources

Technology-related documents

- Supplier product overview for cloud-based property management system used in the franchise-standardization case (Hotel B) describing the system capabilities, modules, and intended benefits.
- Corporate press release announcing the partnership between the hotel brand and the cloud-based PMS provider, outlining the motives for the adoption and expected operational improvements. (Hotel B)
- Summary of the core features, integrations, and market positioning for the cloud-based PMS platform deployed in Hotel A.
- Supplier case describing the collaboration between the hotel group and the PMS provider

Organization-related documents

- Corporate reports, descriptions and announcements on the centralized-deployment (Hotel A) describing the brand concept, geographic expansion strategy, and overall digital transformation agenda.
- Web-page documentation for the franchise-standardization group (Hotel B), covering discussions such as membership guidelines, quality-assurance programme descriptions, and chain-wide technology and standards information.

Appendix C - Semi-Structured Interview Guide

Director of Sales/Hotel General Manager

1. Role & history, normal workday
    a. Could you start by describing your role and history working at this hotel?
    b. What are your main responsibilities and what does a typical day or shift look like for you?
2. What systems are used
    a. Can you walk us through the main digital systems and technologies used in this hotel in relation to service delivery and customer relations?
    b. What parts of daily hotel operations are most clearly shaped by these digital systems or procedures?
        i. *Probe (If they list many systems):* Among those, which system would you say is the primary driver of your daily operations, and why?
3. What systems are forced by hq/comes from above, what systems are local
    a. Which of these systems and technologies are required by the hotel chain?
    b. How much local discretion did you have in selecting what systems are used?
4. How do you use these systems
    a. To what extent do you think these systems help create a consistent guest experience across different hotels in the chain?
    b. How do you use these systems to adapt your service to individual guest needs or local preferences?
5. Thoughts on them
    a. How much freedom do the standardized digital systems offer to alter or adapt your services to fulfill the needs of guests specific to this region?
    b. Overall, how well do you think the system balances efficiency and flexibility?
    c. Can you describe a time when a chain-level system made operations more efficient or consistent?
    d. Can you describe a time when a chain-level system made it harder to respond to local needs?
    e. Having been at the hotel prior to it joining the “CHAIN”, what has your personal experience been in adjusting towards new corporate digital standards?
        i. Within your managerial/sales director role, have you observed any changes in service fulfillment/quality? Do you think any of these are a result of new digital systems/technologies?
    f. Are there any new capabilities or limitations in providing service stemming from being part of a larger organization with its own overarching standards?
    g. When onboarding new team members, how do you train them to balance system compliance with independent problem-solving?
        i. Probe: Where do new hires typically struggle the most when trying to find that balance?
6. Thoughts on improvement
    a. If you could improve one thing about the systems you use, what would it be and why?
7. Ask if something is missed
    a. Before we wrap up, is there a situation or challenge related to these systems that you feel we haven't quite covered?

Front Office Manager

1. Role & history, normal workday
    a. Could you start by describing your role and history working at this hotel?
    b. What are your main responsibilities and what does a typical day or shift look like for you?
2. What systems are used
    a. Can you walk us through the main digital systems and technologies used in this hotel in relation to service delivery and customer relations?
    b. What parts of daily hotel operations are most clearly shaped by these digital systems or procedures?
        i. *Probe (If they list many systems):* Among those, which system would you say is the primary driver of your daily operations, and why?
3. What systems are forced by hq/comes from above, what systems are local
    a. Which of these systems and technologies are required by the hotel chain?
    b. How much local discretion did you have in selecting what systems are used?
4. How do you use these systems
    a. How do you use these systems to adapt your service to individual guest needs or local preferences?
    b. Please tell me about a typical guest interaction (for example, check in/check out) and how you use these systems during those interactions.
    c. To what extent do you think these systems help create a consistent guest experience in this hotel?
    d. What happens when a guest situation falls outside what the system is designed for? Walk me through what you do.
        i. What happens when the system strictly prevents an action that you, as a manager, feel is necessary for a guest?
        ii. Can you elaborate on what the system actually prevents you from doing, versus what it simply recommends?
5. Thoughts on them
    a. What would you say is the biggest advantage and biggest challenge of using the standardized chain-level digital systems in your department?
    b. Overall, how well do you think the system balances efficiency and flexibility?
6. Example of good and bad experience
    a. Options for question approach:
        i. Can you describe a time when the system helped your team solve a guest situation better?
        ii. Can you describe a time when the system helped the team deliver more personalized service?
        iii. Can you describe a time when the system limited what your team could do?
        iv. Can you describe a time when the system made it harder to respond to a guest’s needs?
    b. Are there things your team does to personalize a guest's experience that the system simply doesn't track or support at all?
7. Thoughts on improvement
    a. If you could improve one thing about the systems you use, what would it be and why?
8. Ask if something is missed

   a. Before we wrap up, is there a situation or challenge related to these systems that you feel we haven't quite covered?

Frontline Staff / Reception / Guest Service

1. Role & history, normal workday
   a. Could you start by describing your role and history working at this hotel?
   b. What are your main responsibilities and what does a typical day or shift look like for you?
2. What systems are used
   a. Can you walk us through the main digital systems you use during a normal shift while assisting guests?
3. What systems are forced by hq/comes from above, what systems are local
   a. Which of these systems and technologies are required by the hotel?
   b. How much personal discretion do you have in selecting what systems are used? Do you have the flexibility to work without them?
4. How do you use these systems
   a. How do you use these systems to adapt your service to individual guest needs or local preferences?
   b. How do the tools you use day-to-day help you learn about your guests and tailor their stay to give them a better experience?
   c. What parts of providing high-quality customer service become smoother and more consistent across different guests through the use of digital systems?
   d. In which ways do you feel limited by the systems and the operating procedures entwined with them?
   e. Are there things the system does not allow you to do, even when you think it would help the guest?
      i. Can you describe a time when the system limited what you could do and made it harder to respond to a guest's needs?
      ii. What did you do in that moment, did you find a way around it, escalate it, or just explain to the guest that you couldn't help?
      iii. Is that the kind of thing that happens often, or was it unusual?
   f. Have you noticed any recurring trends or needs from guests in this specific region that doesn't align with the way the system operates?
5. Thoughts on improvement
   a. What features or changes within these platforms would make your day-to-day work smoother and enhance the overall guest experience?
6. Ask if something is missed
   a. Before we wrap up, is there a situation or challenge related to these systems that you feel we haven't quite covered?

Appendix D - Authorship Statement

The authors, Hamzah El Dimassi, Sarah Owensby, and Carl Walter Molina, hereby declare that this Bachelor's thesis titled *Frontline + The Machine: Comparing the Sociotechnical Realities of Centralized & Franchised Digital Strategies in International Hospitality*, is our original work conducted under the supervision of Magnus Johansson. All sources used and referenced have been properly acknowledged and cited. All data, findings, and conclusions detailed in this thesis are genuine and based on the empirical evidence thereby gathered. All three authors were equitably involved in the idea generation, the data collection, the writing process, and the refinement of the entirety of this thesis work.

Appendix E - AI Usage Statement

This thesis has made use of artificial intelligence to help with brainstorming and coming up with ideas. It helped the authors' explore alternative ways of framing concepts and to consider different angles on our chosen topic. AI was also used to explain theoretical concepts in a simpler manner solely to aid the authors' in grasping the concept. All interpretations, arguments, and final formulations in the text remain the authors' own.

At certain stages, sections of the draft were pasted into an AI grammar tool to identify and correct grammar, spelling, and linguistic errors. It is also important to note that the guidance provided by the AI tools were not adopted directly. They were constantly cross-checked and refined through the authors' independent research before coming up with any conclusions.