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# Humans-as-Luxury: The Future of Hospitality in an AI-Driven Age

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**Abstract**
This viewpoint explores the growing scarcity of human labor in hospitality and how automation, robotics, and AI (especially agentic) may redefine the nature of service. The paper argues that human workers could evolve into a luxury feature in an increasingly automated environment by drawing on examples from art, spirituality, and emerging workplace trends. Three potential hospitality models—technocentric, anthropocentric, and hybrid—are identified, each defined by the proportion of human labor versus agents, digital workers, synthetic or automated solutions. The findings highlight how, far from becoming obsolete, human labor may assume a premium status as personalization, authenticity, and empathy become highly sought-after commodities.

**Keywords:** Hospitality automation, Humans-as-luxury, Robotics, Agentic AI, Human touch, AI in tourism, human-in-the-loop, human-on-the-loop, human-out-of-the-loop.

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**1. Scarcity as Value: The Rising Rarity of Human Labor in Hospitality**

The principle of scarcity profoundly impacts perceived value, as exemplified by a record-breaking Sotheby's auction in Hong Kong in 2017. During the event, a pink diamond sold for an extraordinary $71.2 million (Kennedy, 2017), illustrating how rarity amplifies market appeal. Pink diamonds constitute only a tiny fraction of all diamonds mined, with large specimens exceeding five carats being exceptionally rare and thus commanding premium prices. This scarcity dynamic similarly applies to the hospitality industry, where frontline staff represent a remarkably small segment of the global population. Despite an estimated 700,000 hotels worldwide (World Global Hotels & Resorts, 2024), the hospitality workforce totals just 270 million people (Sodergren, 2014) —equivalent to a mere 3.3% of the world's population. In comparison, as of 2025, the agriculture sector employed approximately 914 million people (Dyvik, 2025). The shortage of hospitality workers has progressively worsened, particularly in the wake of COVID-19. During prolonged lockdowns and economic turmoil, many employees moved to more robust industries, creating a sizeable and sustained workforce deficit (Kirk, 2024). This deficit is further magnified by declining interest in traditional hotel roles among new graduates from elite programs. One in two EHL graduates work in roles outside hospitality. These include marketing, real estate, banking, finance, consulting, retail, luxury goods, IT, multimedia, entertainment, and more (Study International, 2022), reflecting a striking shift in how these emerging professionals imagine their future paths. In response, many employers have tried boosting wages to counteract labor shortages. For instance, in the United States, wages rose by 29% from mid-2019 to mid-2023—overtaking the 20% average increase seen in higher-paying sectors (Henderson, 2024). Despite these wage increases, the hospitality industry continues to face recruitment and retention challenges, further aggravated by notably high turnover rates, between 31-34% (Malyarov, 2020). Hoteliers must thus contend with diminished labor pools while maintaining the personalized service that guests expect. Digital workers and AI agents are already streamlining operations. Nevertheless, luxury hospitality remains a unique sector, as personal interaction stays central to guest satisfaction. As scarcity drives up the perceived value of human-delivered service—akin to the rarity of pink diamonds—the hospitality sector may find that human labor itself becomes a premium asset. In this landscape, the simple presence of human staff could be viewed as a hallmark of exclusivity in an era increasingly dominated by synthetic and automated processes.

**2. From Android Bodhisattvas to Automated Hotels**

Academic discussions of labor and automation often prioritize economic and technological considerations. However, early philosophical explorations by Italian philosopher Mario Perniola (2004, 2017) reveal an underexplored cultural and aesthetic dimension too. Perniola examined how shifts from an organic understanding of human experience to one increasingly mediated by neutral, artificial, and inorganic elements reshape societal norms, extending beyond artistic contexts. These reflections resonate strongly in contemporary discussions about labor and automation, particularly within the intersection of spirituality and technology. A striking example emerges in the provocative question raised by scholar Kopf (2020) in *Does AI Have Buddha-Nature?*—challenging readers to consider whether artificial intelligence could embody the metaphysical principles of Mahāyāna Buddhism. This inquiry is no mere cultural curiosity but instead taps into broader ethical and existential dilemmas. Japan offers an interesting case study where technology and tradition converge in response to acute demographic challenges. As Japan grapples with a birth rate of only 1.26 children per woman and an aging population (Yamaguchi, 2023), figures like the former Prime Minister of Japan, Tarō Asō, have expressed urgent concerns about the nation's shrinking workforce (McCurry, 2019). These demographic pressures extend to religious institutions, prompting the adoption of digital workers in cultural and spiritual practices. For instance, the Kodaiji Temple in Kyoto recently introduced Kannon Mindar (Tominaga, 2023), an android bodhisattva developed by Professor Hiroshi Ishiguro. Similarly, SoftBank Robotics' Pepper has been employed in Japan to chant sutras at funerals, offering a practical and cost-effective alternative to human priests (Lim & Peh, 2017). Ivanov and Webster (2019) propose three pathways to address labor deficits: increasing birth rates ("*create*" workers), liberalizing immigration policies ("*import*" workers), or embracing automation ("*replace*" workers), highlighting that while increasing birth rates is a long-term endeavor

and immigration often requires significant cultural adjustments, automation offers immediate relief. However, "*creating*" artificial staff also raises concerns about displacing human workers and redefining roles traditionally linked to human interaction. And, if Kannon Mindar and Pepper are perfect examples of how these concerns can be navigated with careful integration, blending technological efficiency with cultural and spiritual continuity has proven to be a difficult task. The hospitality industry faces similar tensions as demographic changes and evolving consumer demands challenge its labor-intensive model. In Japan, cultural acceptance of robots has already fostered significant advances in automation, suggesting that delegating specific responsibilities to machines is feasible and pragmatic—provided service quality and operational efficiency are maintained. However, these adaptations prompt deeper questions about the essence of hospitality. Can a fully automated hotel still embody the spirit of hospitality, or does it become something fundamentally different? This dilemma echoes the Zen kōan in which a monk asks Joshu whether a dog has a Buddha nature (Yamada, 2004). Joshu's enigmatic response, "*Mu,*" transcends a binary "*yes*" or "*no,*" inviting reflection on subtler realities beyond established categories. Similarly, Robert Pirsig (1974) highlights the existence of a "third state" in computer circuits—neither "*1*" nor "*0,*" but something else entirely. Applying this perspective to hospitality reframes the debate about automation. Rather than asking whether machines "replace" humans, it may be more productive to view this transformation as a continuum where automation complements human labor. The true challenge lies in finding an equilibrium that preserves human interaction as a premium feature while leveraging automation to streamline repetitive tasks. In this sense, the hospitality industry parallels the example of Kannon Mindar – blending tradition and innovation does not erode core values but can enrich them when approached thoughtfully. The industry can reimagine its future without losing its essence by navigating this balance with nuance and foresight.

## 3. The Future of Hospitality: Technocentric, Anthropocentric, and Hybrid Models in a Fluid Industry

This new hospitality landscape indicates three potential categories of hotels, distinguished not by traditional star ratings but by the proportion of "*biological/human staff*" relative to automated solutions. This shift arises from the demographic and economic pressures that increasingly shape how organizations deliver service at scale.

### *3.1. Technocentric Hotels*

By preferring digital workers (AI agents, RPA, robots) over human staff, these establishments will significantly reduce (human) staffing costs while delivering competitive rates to a growing population of budget-conscious global travelers. This large-scale automation is particularly well-suited to managing surges in demand from new traveler demographics, many of whom embrace digitally driven services and prioritize affordability over traditional, human-driven hospitality experiences. While some low-cost, human-operated accommodations may persist through models like volunteer labor or worker exchange programs, the broader trajectory leans toward automation for its efficiency and scalability. However, the economics of automation remain nuanced. High-cost roles are usually automated due to clear benefits in precision and long-term savings. On the other hand, automating lower-paid roles, such as housekeeping or janitorial work, currently offers limited financial benefits, and the investments needed still outweigh the wages saved in these positions. Yet, recent demonstrations of robotic dexterity—like Sony's surgical robot capable of suturing a grain of corn (Phelan, 2024)—show that precision technologies are rapidly evolving. As these capabilities mature and technology expenses decline, automating even lower-wage, dexterity-based tasks may become increasingly practical. Until then, humans will likely remain indispensable in many such roles, primarily due to existing cost structures.

### *3.2. Anthropocentric Hotels*

At the opposite end of the spectrum, anthropocentric hotels appeal to clientele seeking a deeply personalized experience. These luxury establishments, staffed almost entirely by humans, differentiate themselves through attentive service and highly customized interactions. As in the market for artisanal products, guests may be willing to pay a premium for the exclusive assurance of human engagement in every aspect of their stay. This "*human touch*" becomes the hallmark of luxury, transforming human labor into a unique selling proposition for

those willing to pay a premium fee for a completely human experience. Such an approach also serves as an effective branding/marketing strategy, positioning human-centric operations as the industry's pinnacle of service quality.

### *3.3. Hybrid Hotels*

Most properties will likely adopt a hybrid model, integrating human and artificial labor to balance service quality with operational efficiency. AI agents may handle routine tasks—such as billing, check-ins, and information requests—while human staff focus on roles that significantly influence guest satisfaction. This model responds to a persistent labor shortage in hospitality by reducing reliance on an entire human workforce without entirely discarding the appeal of interpersonal interaction. It's a sort of new "*technological humanism,*" whereby technology supports but does not supplant human labor in areas of critical engagement. From a strategic perspective, however, flexibility remains essential. Hybrid hotels will have to continuously reevaluate and adjust the ratio of human-to-digital/robotic workers in response to changing guest preferences, as well as broader market and socio-economic conditions. Insights from art and spirituality demonstrate that integrating non-human agents into activities once seen as exclusively human does not necessarily constitute a radical departure from tradition. Andy Warhol relied on assistants and delegated several aspects of his artistic production, illustrating that creative conception often holds greater conceptual weight than physical execution. In hospitality, similar dynamics might emerge. While automation can manage operational tasks, the essential spirit of hosting may reside in human intuition and empathy. As technology costs decline and public familiarity increases, some travelers will continue to desire wholly human-crafted experiences— reflective of those who prefer handmade goods. This willingness to pay for fully human interactions highlights the concept of "*Humans-as-Luxury,*" even when automation can deliver comparable or, in some cases, superior outcomes. This idea, introduced by the author, ties directly to the decision-making models theorized by Ivanov and Webster (2024): "*human-in-the-loop,*" "*human-on-the-loop,*" and "*human-out-of-the-loop.*" The *human-in-the-loop* framework introduces a collaborative dynamic in which AI systems handle much of the operational workload while humans maintain oversight and retain ultimate decision-making authority. For example, an AI platform might analyze occupancy patterns and suggest optimal pricing strategies, but a human revenue manager would approve or refine these recommendations. The *human-on-the-loop* model takes this one step further, granting AI systems the ability to implement decisions autonomously. For instance, an AI tool could dynamically adjust room rates based on real-time fluctuations in demand, but a revenue manager could override these adjustments if they conflict with broader brand objectives. At the furthest end of the spectrum is the *human-out-of-the-loop* model, where AI systems operate with little or no human involvement. Once parameters and goals are defined, the AI executes tasks autonomously without requiring managerial input or approval. The *"Humans-as-Luxury"* model stands in stark contrast to the human-out-of-the-loop approach, offering an alternative that could also be described as an *"AI/robots-out-of-the-loop"* model. It underscores the premium value of human interaction and the willingness of guests to pay extra for it. Collectively, these four models highlight the hospitality sector's ongoing shift toward more flexible, data-driven operations. In the long run, the industry seems to be moving toward greater fluidity, where establishments that seamlessly integrate technology with meaningful human engagement are poised to thrive. However, success will depend on finding the right balance between automation and human services—one that aligns with each hotel's identity and value proposition.

## 4. Balancing Automation, Human Touch, and the Redefinition of Luxury

Masahiro Mori's (1970) seminal "*uncanny valley*" concept highlights a critical factor in human interactions with digital workers: as AI agents and digital workers begin to closely resemble humans, initial public fascination can give way to discomfort or even aversion. However, while many travelers might still find digital workers unsettling, this unease is unlikely to hinder their adoption in the workplace. Amazon's workforce already includes over 500,000 robots working alongside 1.5 million human employees (Coppola, 2023), demonstrating how seamlessly automated systems are being integrated into corporate operations. Despite one-third of their "*colleagues*" being machines, human employees generally adapt to this dynamic. Interestingly, the hospitality

industry might face a different kind of "*uncanny valley,*" not because of digital workers but due to impersonal or disengaged human staff. Unmotivated employees can often come across as mechanical and detached, sometimes feeling less authentic than well-designed, hyper-personalized AI agents. This flips the narrative, suggesting that the real challenge in hospitality may not only be in adopting digital workers but in ensuring that human staff deliver genuine, empathetic service that doesn't feel robotic. In contrast, genuine human warmth might, paradoxically, depend on intuitive understanding and subtle imperfections that standardization cannot replicate. When automated solutions exhibit greater empathy or attentiveness than their human counterparts, the hospitality sector must ask where luxury truly resides. A possible answer lies in reconceiving luxury as the scarcity of sincere interpersonal engagement. Organically flawed but deeply resonant human relationships become an exclusive commodity, valued for their authenticity rather than for operational efficiency. Despite the media's focus on robotics in hotels, however, automation is unlikely to manifest through humanoid digital workers. Instead, invisible systems—such as AI-driven applications, autonomous agents, augmented reality tools, and robotic process automation (RPA)—will quietly manage operational tasks in the background. Efforts to replace humans in roles that require uniquely human skills or emotional intelligence often lead to failure. However, substituting humans in positions where they add little value—or worse, become liabilities—makes perfect sense. For example, one growing concern with human staff is the risk of high turnover and limited oversight, particularly in low-paid roles that still involve handling sensitive data (Burke, cited in Puorto, 2024a). Automating these positions can reduce the likelihood of security breaches (for example, in guest credit card management), minimize human error, and address the challenges posed by an unengaged workforce. While the shift toward AI-driven solutions is often perceived as a threat to jobs, automation can deliver net benefits in cases where disengaged workers negatively impact service quality and operational efficiency. In refining his "*Golden Rule for Automation,*" the author emphasizes that substituting humans with machines is advisable only when it neither diminishes guest satisfaction nor undermines employee well-being (Puorto, 2022, 2024b). As AI, robotics, and process automation advance, the notion of "*Human-as-Luxury*" gains traction: human creativity and empathy become premium attributes. However, in contexts where staff show little motivation or capacity to enrich the customer experience, the feasibility of purely human-centered service might be unattainable.

## 5. Conclusion: For Whom the Bell Tolls

In conclusion, the ongoing talent shortage in the hospitality sector underscores the urgency of a structural transformation. Effectively navigating this shift calls for confronting entrenched cultural resistance, as well as outdated fears and biases toward technological innovation. A strategic roadmap can be envisioned through three distinct industry models—*technocentric, hybrid, and anthropocentric*—each reflecting a different balance between automation and human-centric experiences. Within this context, a profound rethinking of workforce strategies is essential. One approach frequently discussed is the "*head up vs. head down*" framework. Workers operating in a "*head down*" mode focus on repetitive, screen-oriented tasks—functions that machines excel at performing. By contrast, "*head up*" roles emphasize creativity, empathy, and innovation—capabilities uniquely suited to humans. Hiring strategies, therefore, should pivot toward soft skills such as emotional intelligence, adaptability, and interpersonal abilities. As the industry transitions toward digital workers and automated processes, the technical requirements of many positions will diminish, placing a premium on roles that harness distinctive human qualities. Redefining these roles, however, remains one of the most complex challenges for future hoteliers. This urgency highlights the importance of developing innovation managers and digital leaders who can meld technological advancements with the value of the human touch. Without such leadership, the entire endeavor risks devolving into a disjointed and poorly executed disruption. Moreover, this transformation is fundamentally cultural. Businesses have often pressed individuals into a self-automation mindset, prioritizing mechanical efficiency at the expense of emotional engagement. Yet, the "*Humans-as-Luxury*" framework underscores the opposite: it emphasizes those uniquely human capabilities that machines cannot (yet) replicate, allowing technology to handle the purely transactional aspects. Over time, robots, AI, autonomous agents, and digital workers in general are expected to advance beyond simple imitation, moving closer to embodying human-like qualities. This raises critical questions about the future of work and relationships: Are essential

human traits being sacrificed for the sake of efficiency? As machines increasingly take on characteristics once reserved for humans, and as human roles evolve to integrate technical proficiencies, the boundaries between the two become fluid. The real issue is not whether digital workers will replace their human counterparts—they inevitably will in certain tasks—but rather how these redefined positions can elevate the hospitality experience. Whether through highly customized services or deeply empathetic guest interactions, the human element is poised to become the defining hallmark of the next era of luxury, not only in hospitality but across various sectors. Ultimately, this is not merely a question about the future of hospitality; it speaks to the very future of humanity itself. Because, to paraphrase John Donne, we all are "*involved in mankind.*" And the bell, whether it rings jubilantly or solemnly, tolls for every one of us.

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