Institute of Hospitality ROUND TABLE

INSTITUTE OF HOSPITALITY

WHITE PAPER

HOSPITALITY 5.0: FUTURE PROOFING SKILLS, SPACES AND SERVICE THROUGH AI INNOVATION

October 2025 | University of Wales Trinity Saint David



by Katherine Price MIH

> AI is only as good as the information you put into it. Something I was always taught as a waiter was how to read guests and that's something that AI is never going to be able to do.
>
> **Damien Martin MIH IG IS, general manager, The Parkgate Hotel, Cardiff**

CPD

Institute of Hospitality
ROUND TABLE

CONTENT:

3	The background
4 - 5	The challenge
5 - 7	Hospitality 5.0: Future-proofing skills, spaces and service through AI innovation
8	Best Practice
9 - 10	Solutions
11	Next Steps
12	Methodology
13	Resources & References

The background

We are in a period being described as 'industry 5.0', the fifth industrial revolution, in which artificial intelligence (AI), robotics and big data are being hailed as the drivers set to boost efficiency and redefine customer experiences, with deeper human-machine collaboration making businesses more agile, innovative, and sustainable (1).

There are already a multitude of uses for AI in hospitality: pre-check-in chatbots, dynamic pricing, concierge services, predictive maintenance, personalising the guest experience, analysing data, in-room assistants, inventory management, forecasting, scheduling, and enhanced security are just a few. Hardly a thing of the future, it's already becoming part of many people's everyday lives.

Some of these uses are already well-established within the hospitality industry, and businesses are reaping the benefits – hotel giant Hilton has reported 41 use cases for AI across the business (2). Some initiatives, meanwhile, have made headlines for the wrong reasons (3).

According to Deloitte's 2024 European Hotel Industry and Investment Survey (4), 52% of customers believed generative AI would be used for customer interactions, while 44% said that generative AI would be employed for guest engagement. However, two-thirds of respondents reported that their organisation was either exploring or not yet considering AI solutions at the time. Only one in ten were implementing AI solutions, and one in five were at the piloting stage.

But it is an increasing focus for many businesses. While in 2022, only 4% of the largest public travel companies referenced AI in their annual reports, by 2024, that rose to 35% (5), according to McKinsey & Company. McKinsey's survey of 86 mainly US-based travel executives found that most reported that adopting AI in their organisations had resulted, over the space of three years, in more than 6% annual revenue growth and more than 6% annual cost savings.

The challenge

> The challenges themselves are going to evolve significantly
>
> **Professor Gareth Davies FIET, dean, Institute of Management & Health, University of Wales Trinity Saint David (UWTSD)**

Bringing AI into the hospitality workplace poses numerous challenges, not least around data, with the sector a prime target for those looking to exploit and steal customer data (6), while incompatible systems and siloed data are two major roadblocks to overcome for many companies looking to introduce AI into their operations.

One challenge is, of course, the cost of investment. In the current economic climate, customer wallets are being squeezed, as are hospitality business budgets, with an average of 11 licensed hospitality venues closing every week over the last year (7). In such a climate, business owners may be averse to investing in new technologies, particularly when the risk is that an innovation turns out to be a 'gimmick' without saving any money or time, makes tasks even more complicated or has other unintended consequences. The industry is seeing a plethora of different AI products and solutions coming to market, but businesses may struggle to identify the right product for their specific needs.

There are also moral and ethical questions to be considered, for example, when handing over decision-making to AI systems, as well as the sustainability of using it in the first place. Data centres for AI servers consume a lot of water, rely on minerals and rare elements, which are often mined unsustainably, and use massive amounts of electricity (8).

AI that doesn't work as intended has the potential to not only negatively impact the guest experience, loyalty and satisfaction, but also hospitality workers, at a time when the industry is already experiencing a worker and skills shortage (9). Many people say they love hospitality for the interaction it brings with other people, so reducing those interactions through the introduction of chatbots or online check-in may impact workers' job satisfaction. Meanwhile, requiring AI skills from employees may exclude those who haven't had access to appropriate training.

Human interaction remains really important for workers, no matter whether they work for high-end luxury brands or budget hotels.

Dr Agnieszka Rydzik, associate professor in tourism and work, University of Lincoln

Hospitality educational institutions are having to grapple with the challenges of their students' increasing use of Large Language Models (LLMs) such as ChatGPT, Claude and Gemini, while also making the most of the benefits AI can bring to the classroom, and ensuring students are equipped with the AI skills they will need when they join the workforce.

My concern about the embrace of technology within education is that it furthers the gap between the haves and the have nots... are we going to produce an even bigger gap that will be even harder for these children and young people to breach because they're not going to have the exposure to the technology which is going to become ubiquitous in the employment and recruitment process?

James Morgan, creative learning producer, Swansea Arena

Ultimately, the usefulness of AI is only as good as the information it's provided or has access to, as well as the ability of the people using it to understand, analyse, interpret and apply its output. For example, in 2017, if AI were to have recommended a restaurant in London to a guest based solely on online ratings, it may well have recommended the top TripAdvisor-rated 'restaurant' – which turned out to be a journalist's garden shed .

AI is only as good as the information you put into it. Something I was always taught as a waiter was how to read guests and that's something that AI is never going to be able to do.

Damien Martin MIH IG IS, general manager, The Parkgate Hotel, Cardiff

Hospitality 5.0: Future-proofing skills, spaces and service through AI innovation

> It's important that it takes those administrative tasks away so that we as hospitality professionals can spend as much time doing what we love to do and what we do best, which is face-to-face contact with our guests.

Matt Barnby, regional operations director, Celtic Collection

It's impossible to know what the future holds. However, it's becoming increasingly clear that AI will be a part of the hospitality workforce in some form, whether by analysing thousands of guest reviews, hundreds of dietary requirements for a banquet, responding to guest enquiries as a chatbot or as a tool to train hospitality workers.

Hospitality is generally in agreement about one thing: AI has its limitations in this industry. Guest service requires an emotional intelligence that AI currently cannot deliver in the same way an experienced hospitality professional can. Its best deployment right now is to free up those professionals to be able to focus on what they're good at, delivering quality face-to-face interactions with guests, or getting creative in the kitchen, rather than being weighed down by administrative tasks. AI can help enhance guest and staff interactions by streamlining back-of-house operations and analysing data but also breaking down language barriers through AI-powered translation and offering suggestions to personalise the guest experience.

> If we can reduce the administrative burden on people then it means our staff can be focused on guests.

Oliver de Koning, group people manager, Seren Collection and Routescape.com

The application of AI in a business for best results will depend on the specific needs and offering of that venue. For example, some luxury guests may wish to have service delivered to them by a human, whereas guests engaging with a budget hospitality venue may be quite happy checking in and out online and not encountering a single person – although there will be nuances and exceptions on both sides. High-end luxury guests may be more interested in having room conditions tailored to their preferences, for instance. But to deliver a great experience to all demographics will require hospitality, like all other industries, to keep up with modern technology, and for any technology deployed to work, and work well.

> It all depends on the type of hotel, and the type of clientele, the demographic...
>
> **Kieran James, general manager, The Drey, London**

When asked how the hospitality industry can future-proof skills, spaces and service through AI innovation, LLM Gemini suggested using AI to analyse employee performance data and create customised training paths, focusing on specific skill gaps, as well as using AI-driven virtual reality (VR) or augmented reality (AR) to simulate real-world scenarios (for example, handling a difficult guest complaint or emergency procedure) in a risk-free environment.

As for future-proofing spaces, as well as making physical spaces smarter, more efficient and personalised, for example personalised room settings such as temperature, light and music, or predictive maintenance of equipment, Gemini's response underlined how AI can optimise energy use to reduce consumption and environmental impact.

It also highlighted the benefits for service, such as being able to offer 24/7 services like chatbots or contactless check-in and check-out, as well as personalisation for guests by analysing things like dietary preferences or customising loyalty rewards.

Its response corroborated what many hospitality professionals already know: "The goal is often to enhance the human touch by automating the routine, enabling staff to focus on high-value guest interactions, and creating highly personalised and efficient experiences."

Best Practice

Sodexo is using AI to reduce food waste within its operations, using AI-powered cameras to track food waste and identify what's being thrown away. The AI system analyses patterns to determine why certain foods are wasted the most and suggests solutions like adjusting portion sizes, reusing ingredients, or changes to menu planning.

> AI is producing a model based on: next week we're expecting five million travellers throughout the airports that I'm responsible for, and we know the destinations, the class of travel – we can kind of get AI to predict (and I say predict, because it's not a science) the consumption trends, what those guests would like, and hopefully we end up putting a menu in place that will have much less wastage.
>
> **Craig Jarrett MIH, vice president of operations, Sodexo Live!**

Solutions

Be thoughtful in AI application

We've recently put a chatbot onto our website and we've seen a growth in our events enquiries. We've seen that people are staying on our website for longer. I do think the world's ready for AI. They're used to having that quicker response time.

Melissa Bourke, business development manager, Swansea.com Stadium & Cardiff City Stadium, Levy UK & Ireland

Consider where AI can be most helpfully applied in a business by understanding the guest demographic. What appeals to that group, what are their expectations, and how do you balance technology and people-facing interaction depending on what that group might be looking for in their hospitality experience? Focus on how AI technology can be used to reduce the number of mundane, administrative tasks team members deal with, and how it can be used to allow staff to personalise the guest experience, for example using facial recognition to recognise guests on arrival, which will help improve revenue, guest satisfaction and team member satisfaction.

My G&T can be ready on the bar as soon as I walk through the door. Things like that are going to improve the revenue, they're going to improve our yield figures. And those are the ways we should be using it. We should be using it to make people feel even more special, that when I arrive, they know what I like, where I want to go, and give me that authentic experience.

Jacqui Jones MIH, programme director, international travel, tourism, events, festivals & leisure resort management, UWTSD

Take people on the AI journey

Teams need to be able to use AI tools efficiently to be able to derive any benefits from them, but AI tools must also make their jobs easier to be worth the investment in the first place. The introduction of AI systems should be done in consultation with those who will be using them day-to-day to ensure their needs are met and their working lives improved. Team members also need adequate training to ensure they are comfortable using and interpreting the data and insights generated by AI.

> In the kitchens, we want to be on the stoves, we want to cook, so to have something to be able to pull out nutritional value or assist us with this is huge for us.

Simon Crockford MIH, cluster executive head chef, Dulse at Tŷ Milford Waterfront and St Brides Spa Hotel, Pembrokeshire

For widely used LLMs such as ChatGPT, there are already plenty of tools online that hospitality professionals can consult for free, such as YouTube videos and LinkedIn tutorials, to support their learning and development in this area, and ultimately their careers.

Plan for all eventualities

> We still need to make decisions. We can get best advice from artificial intelligence and make informed decisions based on that, but I don't think we should be letting it make decisions for us.

James Hayward MIH, cluster hotel manager, Celtic Collection

Even technology is not totally infallible, and at some point, a human will need to step in and make decisions to ensure situations don't escalate. Those guardrails need to be established before something goes wrong, not after. Businesses need to ensure the security of data being fed into AI systems, establish the limits of AI systems when it comes to decision-making, and that moral and ethical questions are being asked and properly discussed around the use of data and AI.

> It's only a tool and where the danger emerges is when the tool becomes something more than a tool, and that's surely when we have to enter the debate around ethics, morality, who makes the decisions? And that issue of governance is surely the most significant question?

Professor Terry Stevens, founder and managing director, Stevens & Associates

Next steps

1) Consider where AI deployment would best enhance service for guests and support staff to be more efficient, looking at both the opportunities and priorities within operations.

2) Take staff on the AI journey – include them in decision-making, invite their feedback and offer training so that they are comfortable using AI systems and interpreting insights.

3) Signpost team members to AI training opportunities and identify how any skill gaps in this area could be filled.

4) Ensure the security of any data fed into an AI system, that plans are in place for if systems should fail in some way, and that the limitations of AI decision-making are clearly set out.

Methodology

This white paper has been produced following a round table discussion at the University of Wales Trinity Saint David on 7 October 2025.

Panel



Chaired by
Aymen Fetouak MIH
head of professional development, Institute of Hospitality



Matt Barnby
regional operations director, Celtic Collection



Melissa Bourke
business development manager, Swansea.com Stadium and Cardiff City Stadium, Levy UK and Irelan



Simon Crockford MIH
cluster executive head chef, Dulse at Ty Milford Waterfront and St Brides Spa Hotel Pembrokeshire



Professor Gareth Davies FIET
dean, Institute of Management and Health, University of Wales Trinity Saint David



James Hayward MIH
cluster hotel manager, Celtic Collection



Kieran James
general manager, The Drey London



Craig Jarrett MIH
vice president of operations, Sodexo Live



Jacqui Jones MIH
programme director, international travel, tourism, events, festivals and leisure resort management, University of Wales Trinity Saint David



Oliver de Koning
group people manager, Seren Collection and Routescape.com



Damien Martin MIH IG IS
general manager, The Parkgate Hotel Cardiff



James Morgan
creative learning producer, Swansea Arena



Dr Agnieszka Rydzik
associate professor in tourism and work, University of Lincoln



Professor Terry Stevens
founder and managing director, Stevens and Associates

Resources

Alvarez and Marsal: Transforming the Hospitality Industry: AI's Evolving Impact on Customer Experience and Hotel Operations (26 June 2024)

Deloitte: AI's transformative role in the hospitality industry (13 February 2024)

EHL Insights: AI in the Hospitality Industry: Benefits, Challenges & What's Next (11 December 2024)

EY: How hospitality AI is steering hotels toward a smart future (5 December 2024)

Glion: Why Chatbots and AI are Essential for Modern Hospitality (25 March 2024)

McKinsey & Co: Remapping travel with agentic AI (16 September 2025)

Embracing the new era: Artificial intelligence and its multifaceted impact on the hospitality industry (2 October 2024)

References

(1) Rothschild & Co: The dawn of industry 5.0 (19 November 2024)
(2) The Caterer: Hilton CEO: We have 41 use cases of AI across the business (23 October 2025)
(3) Restaurant Business: McDonald's is ending its drive-thru AI test (14 June 2024)
(4) Deloitte: European hotel industry and investment survey 2024 (15 October 2024)
(5) McKinsey & Company: Remapping travel with agentic AI (16 September 2025)
(6) Trustwave: Hospitality under attack: New Trustwave report highlights cybersecurity concerns in 2025 (21 May 2025)
(7) The Caterer: Around 11 licensed hospitality venues closed per week over past year (21 October 2025)
(8) UN Environment Programme: AI has an environmental problem. Here's what the world can do about that (21 September 2024)
(9) Hotel Dive: Hospitality industry could face 8.6m workforce shortfall by 2035: WTTC (9 October 2025)
(10) The Caterer: Man's garden shed becomes London's best restaurant after tricking TripAdvisor (7 December 2017)