

HY824

Technology Edition
Entering The
Everything-Data Decade



The Hotel Yearbook
Foresight and innovation in the global hotel industry



Near-Term Machine Learning Use Cases for Hospitality

Viewpoint by



Adam Mogelonsky
Partner, Hotel Mogel Consulting Ltd.

With views by



Frédéric Brayer
Vice President Accor Tech Sofitel,
MGallery and Emblems



Tomeu Fiol
Global Hotel Technologies Director
en Meliá Hotels International



Uli Pillau
Founder and CEO of Apaleo



Dave Berkus
Managing Partner
Wayfare Ventures LLC



Fergus Boyd
Hospitality Consultant



Darko Vukovic
CEO and Founder at PolyAPI



Adam Mogelonsky
Partner at Hotel Mogel Consulting Ltd.



Juanjo Rodriguez
Founder, The Hotels Network

Using interfaces to access the multitudes of information housed within a hotel's property management system (PMS), technology vendors have on their hands a literal treasure trove of first-party training data for machine learning applications. Any primary data extraction must nevertheless be focused around specific use cases that must be tested and verified before deploying in a live environment. Thus far, we've seen lots of discussion around what's possible in the abstract for machine learning, but outside of perhaps chatbots and algorithmic rate optimization recommendations, many of the purported use cases are not practical for the here and now.

So, if we look specifically at machine learning applications based upon PMS data extraction, what are the top three use cases or tools hoteliers should investigate in 2024, and what tangible value will be created?



Frédéric Brayer
Vice President Accor Tech Sofitel,
MGallery and Emblems

Using interfaces to access the multitudes of information housed within a hotel's property management system (PMS), technology vendors have on their hands a literal treasure trove of first-party training data for machine learning applications. Any primary data extraction must nevertheless be focused around specific use cases that must be tested and verified before deploying in a live environment. Thus far, we've seen lots of discussion around what's possible in the abstract for machine learning, but outside of perhaps chatbots and algorithmic rate optimization recommendations, many of the purported use cases are not practical for the here and now. So, if we look specifically at machine-learning applications based upon a PMS data extraction, what top three use-cases or tools should hoteliers investigate in 2024, and what tangible value will be created? There are some uses cases that would be very interesting to deep dive with machine learning applications to unlock valuable insights and improve efficiencies for hoteliers. A first use case should be targeting guest personalization. This use case will benefit mainly upscale and luxury hospitality. Machine learning algorithms could analyze Guest's data such as booking history, billing details, preferences. The outcome and tangible value would be the possibility to define patterns for next reservation for either a specific guests or a specific context. This use case would be more efficient and pertinent when it concerns a large volume of hotels with a unique guest profile management between them. Another use case would bring benefits in helping automatize administrative task like room's status reconciliation. By analyzing historical data and different context of room occupation (business traveler, family stay, etc.), room's status change could be predicted thus helping the housekeeping team define their priority list for cleaning. Last but not least, analyzing historical occupancy data and retrieving major events happening in the city or region from a Revenue Management system (for example), Machine Learning could help plan staff schedule in the hotel for mid and long visibility.



Tomeu Fiol
Global Hotel Technologies Director
en Meliá Hotels International

Artificial intelligence (AI) in general, and generative AI in particular, excel at identifying patterns. However, to achieve this, they require accurate and bias-free data, as well as a well-designed training process. In the context of hotel management, the PMS data model handles critical information about customers, reservations, stays, and billing. We are currently witnessing a potential decline in the exaggerated enthusiasm for generative AI. Although it is acknowledged that AI will shape the future of society and industries, finding use cases with tangible returns is not as straightforward as expected. An effective strategy involves identifying use cases that generate clear and quick benefits, thus driving the adoption of AI in our companies. Specific examples could include upselling strategies, using purchase propensity algorithms, and detecting errors in financial audits and billing processes. These use cases would leverage PMS data and could be implemented swiftly and efficiently, promoting business growth and effectiveness.





Uli Pillau
Founder and CEO of Apaleo

The future of machine learning (ML) in hospitality applications is set for a transformative shift through readily trained large language models (LLMs) and prompting. This democratization of technology enables even those with minimal technical skills to enhance hotel services, from personalized guest interactions to efficient back-end operations. Prompting offers a “no-code” approach for creating AI applications, allowing hoteliers to develop solutions in natural language, bypassing the complexities of traditional programming languages. OpenAI provides capabilities similar to workflow automation tools like Make.com and Zapier, enabling hoteliers to act as developers. AI needs extensive access to hotel data to make informed decisions and the ability to implement these decisions seamlessly into daily operations. API-first architecture facilitates both effortlessly, driving unprecedented innovation and competitiveness in hospitality. The most common applications, currently centered around inventory optimization, revenue management, upselling, guest communication, and concierge applications, are set to expand. The simplicity of no-code solutions means that these tools are scalable, adapting to the needs of both small inns and large hotel chains. The future will likely see a spread of “top hospitality prompts” curated by major players in the industry, shared publicly to standardise and enhance AI application across the sector.



Dave Berkus
Managing Partner
Wayfare Ventures LLC

How will we roll out AI tomorrow morning and this next year? There are two answers here: 1. For training and customer support of complex systems, the operator’s guides for each are now able to be fed to any of several existing limited (not large) language models (micro-LLM’s) that are restricted to the user property’s account. Within minutes or less from creation, any user on the local system is now able to ask natural language questions that might concentrate on a single task or combination of tasks. 2. For complex questions by staff or management, there are now and will be more vendors linking micro-LLM’s to accounting systems, reservations and front office databases, CRM, sales department contracts, emails sent and received through the system, messaging from guests and within the property and more. At the speed we are seeing vendors use new tools from major vendors such as Google and Microsoft to create their LLM’s, this will mature quickly - perhaps by the time you read this.



Juanjo Rodriguez
Founder, The Hotels Network

PMS data is only one source of first-party data, and it’s actually quite limited because it focuses only on past guests. A richer set of data is built when combining PMS with CRM data and direct website behavior data. Once powered by that dataset, some key practical applications are:

- Benchmarking: create automated competitive sets for each hotel and find opportunities for improvement.
- Predictive Personalization: understand user behavior and respond to it in real-time.
- Audience creation: find the ideal audience for your hotel, both by segmenting users that come to your website property and by finding similar, high-value guests.



Darko Vukovic
CEO and Founder at PolyAPI

Behaviors of guests & sorting of all offerings (room, packages, meals, drinks, activities) based on previous behaviors. Much of this if done on a per person can be done using general purpose AI along with a just in time prompt injection model. Does not even need machine learning. However, it can use machine learning in aggregate to provide suggestions to new users who have no history with the particular hotelier.



Adam Mogelonsky
Partner at Hotel Mogel Consulting Ltd.

The best data that a PMS stores is its guest history - travel purchase, rooms stayed in, ancillary purchases, number of occupants, special requests and so on. While we can discover some patterns to help grow the business, a machine can sift through this multitude far more efficiently to find patterns and do so in an unbiased manner. Once you have some pattern recognition in hand, the best use cases are all about personalization: 1). Anticipating special requests: A hallmark of hospitality service, ML can help you to scale instances where incoming guests are identified as wanting particular setups (extra towels, extra pillows, two bottles of a particular mineral water in the room etc.), prompting you to ask them if they indeed would like this to show that you care. 2). Ancillary upselling: This one has been described at length with platforms that are helping augment guests’ stays. It works, and it works better when machines can build an initial model off guest history data. 3). Rooms upgrades: Hospitality is also a business of ‘surprise and delight’, and there’s nothing that can make a guest happier than a upgrade, with ML cluing you into which guests deserve or will appreciate this.



Luis Weir
Senior Director, Integrations and API
Strategy, Oracle Hospitality

Machine learning is particularly well-suited for tasks that involve analyzing large volumes of guest data to identify patterns, trends, and non-obvious relationships. This can extend from enhanced guest experiences through streamlined check-in processes, to more personalized experiences that empower employees to allocate more time to value-driven tasks. Oracle has exposed the largest set of API on the market through the Oracle Hospitality Integration Platform (OHIP). Combining access to guest and transactional data with these API’s, customers and partners can create AI and machine learning innovations that elevate guest experiences, simplify operational tasks, and refine staffing efficiency. Hotels and technology partners can create and test these new AI technologies faster and cheaper than ever before. Where it previously may have taken months for new technology adoption to fail or succeed, results can now be seen in just a few weeks. Hotels are then able to quickly decide whether to fully adopt that new solution or quickly pivot to another technology. Collectively this will make a significant impact throughout the business, especially in areas like customer service, where technology will be able to make real-time, personalized suggestions for everything from room upgrades to acting like a virtual concierge with dining suggestions.





Mark Fancourt
Co-Founder at TRAVHOTTECH

Over time the value of this type of technical capability will increase for the industry. However, in the immediate state, one of the consistent challenges the industry has faced is to better understand the customer, initially at a macro level and eventually at a micro level. Core hospitality systems do track a significant volume of behavioral information, whether that be spend-related or preference-related. Although generally, these systems do not provide a depth of analysis. Aggregation exists but in specific subsets based upon the pre-programmed reports or queries. This is where the opportunity for immediate advantage can be gained with the broader, more unique, or specific review of sets of information. The combination of available data with flexibility of the type of information output, based upon the ask goes well beyond the standard outputs from operational systems. The power of analysis and prioritization of information at speed is remarkable. The back of house presents additional opportunities across maintenance, supply chain, and even manpower utilization. Used frequently, this type of information can be applied back into the business in a shorter timeframe with targeted results than has been the case using the core metrics, KPIs, processes, or tools that the industry has traditionally leveraged.



Simone Puorto
Founder | CEO | Futurist

Given the huge amount of data inherent in hotel operations, such as check-in/out dates, guest names, booking sources, pacing, preferences, and market trends, it is imperative to reconsider the strategic use of these resources. Drawing parallels with industry giants like Reddit, Twitter, and Tesla, which have capitalized extensively on utilizing (selling?) their data to train AI models, the hospitality sector should recognize this information as a critical asset—perhaps its most critical. The pivotal question then arises: how can these data be valued and effectively utilized? The answer involves navigating the complexities of property management systems, which serve as the primary repositories of this data, often constrained by technical or commercial (if not political) limitations. Once these issues are addressed (and we're a loong way), I think the main application of machine learning reveals three promising areas: predictive guest personalization, dynamic pricing strategies, and operational automation. Fix the data silos problem, and we'll get there.



Fergus Boyd
Hospitality Consultant

Rather than PMS guest profile extraction, I'd focus on your CRM/CDP and social media listening tools and extract guest feedback data from these and use Gen AI tools to create segments around top topics. Your CRM/CDP should be the central place for guest information, not the PMS. Also, download data from third party tools like Tripadvisor and look for patterns, eg feedback on your website, F&B offerings, call centre agents, retail offerings etc. All feedback is useful, and a good use case for Gen AI is to summarise large volumes of data. Share the highlights with staff so they can implement operational improvements.



Adam Mogelonsky
Partner, Hotel Mogel

Viewpoint sponsored by



EHL Graduate School MBA in Hospitality

Apply here:



Hospitality Redefined: Shape the Industry, Shape Your Career

- Graduated Degree Program
- Blends online learning with weeks on campus
- Taught in English
- 24 months
- 6x online modules
- 3 x one-week courses on campus
- 1x Capstone Project
- March and August intakes



Blended Learning

Our MBA is delivered through six online modules along with three one-week courses on campus in Lausanne.



Virtual Online Classroom

Virtual Live Connect classes every two weeks to ask questions, present ideas and take part in round table discussions.



Regular Assessment

At the end of each course, we will assess your mastery of the topic and guide you towards the next stage of your learning.

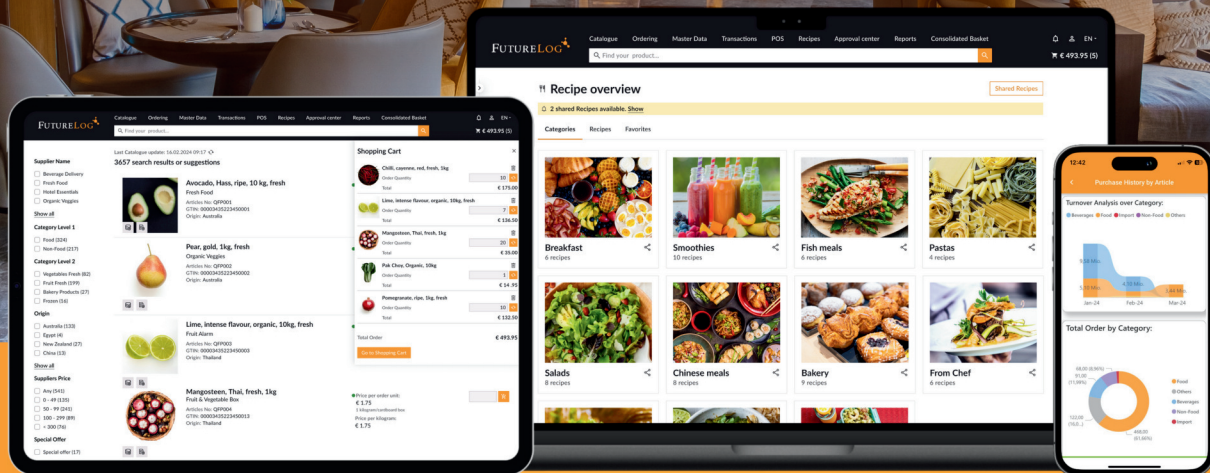


Capstone Project

The project is an opportunity to apply your learnings to address a real-world challenge. A professor will supervise you as you choose your own topic.

FUTURELOG

PROCURE-TO-PAY SOLUTIONS FOR THE HOSPITALITY INDUSTRY



About Us

Designed by hoteliers for hoteliers, our comprehensive suite of market-leading procure-to-pay solutions brings automation, efficiency and simplicity to the P2P process. We have 25 years of experience in supporting customers to digitise their P2P tasks, saving them time and resources while ensuring cloud-based accessibility and secure, seamless connectivity.

“

FutureLog has transformed the way we handle the ordering process across our entire group. Now we're fully automated, we have streamlined communication with our suppliers, it's so easy to use and it has saved our teams so much time and effort.

- Denis Karalić, ACHAT Hotels

”

- ✓ No capital expenditure required
- ✓ Multi-lingual expertise & follow-the-sun support
- ✓ Swift onboarding and implementation
- ✓ Easy integrations to POS and ERP platforms



ORDERING

Simple, streamlined ordering with all supplier product ranges in one place.



INVENTORY MANAGEMENT

Reliable, real-time stock overviews, master data handling and easy in-house transfers.



RECIPE MANAGEMENT

Easy recipe and menu creation, POS connectivity, robust costings & reporting.



CONTRACT MANAGEMENT

Secure, audit-compliant digital archive with automated notifications and easy retrieval.



BUSINESS INTELLIGENCE

In-depth analytics, trend identification, rich visualisations & actionable insights.



INVOICING

Centralised, AI-powered invoice processing with transparent approvals.



CAPEX MANAGEMENT

Intuitive, efficient financial planning, with clear status overviews and activity logs.

Contact us for a commitment-free demo:

✉ sales@futurelog.com 🌐 www.futurelog.com



Hospitality Tech
Industry Calendar
2024-2025

HITEC® 2024 Charlotte
Jun 24 – 27, 2024
Charlotte Convention Center

**HSMAI Americas - Commercial
Strategy Conference**
Nov 25 – 26, 2024
Charlotte Convention Center

**HITEC Technology Investment
Conference**
Jun 27 – 28, 2024
Charlotte Convention Center

2024 Hotel Data Conference
Aug 7 – 9, 2024
Grand Hyatt Nashville

Skift Global Forum 2024
Sep 17 – 19, 2024
The Glasshouse, New York

HEDNA Asia Distribution Conference
Sep 23 – 24, 2024
Siam Kempinski Hotel Bangkok

FHS World 2024
Sep 30 – Oct 2, 2024
Madinat Jumeirah Conference &
Events Centre

**HSMAI Asia - Digital Marketing
Conference**
Oct 10, 2024
Phuket

Hospitality Tech Expo
Oct 15 - Oct 16, 2024
Excel London

ITB Asia
Oct 23 – 25, 2024
Marina Bay Sands Singapore

The Hospitality Show 2024
Oct 28 – 30, 2024
San Antonio, TX, United States

Cvent CONNECT 2024 - Europe
Nov 5 – 7, 2024
Hilton London Metropole

**International Hotel Technology Forum
Asia 2024 (AHTF)**
Nov 12 – 13, 2024
Pan Pacific Singapore

Hotel Technology Forum (HTF) 2024
Nov 18 – 20, 2024
Rancho Palos Verdes

The Phocuswright Conference
Nov 19 – 21, 2024
JW Marriott Phoenix Desert Ridge
Resort & Spa

**HSMAI Middle East - Commercial
Strategy Conference**
Nov 26 – 27, 2024
Conrad Dubai

**HSMAI Europe Revenue Optimization
Conference**
16 Jan, 2025
London

**HEDNA Global Distribution
Conference: North America**
Jan 27 – 29, 2025
Catamaran Resort Hotel and Spa

ITB Berlin 2025
Mar 4 – 6, 2025
Messe Berlin

**International Hotel Technology Forum
2025 (IHTF)**
Mar 18 – 20, 2025
Lisbon

HITEC DUBAI
May 27 - May 29, 2025
Dubai World Trade Center

HITEC® 2025 Indiana
Jun 16 – 19, 2025
Indiana Convention Center

HY3824

Technology Edition
Entering The
Everything-Data Decade

