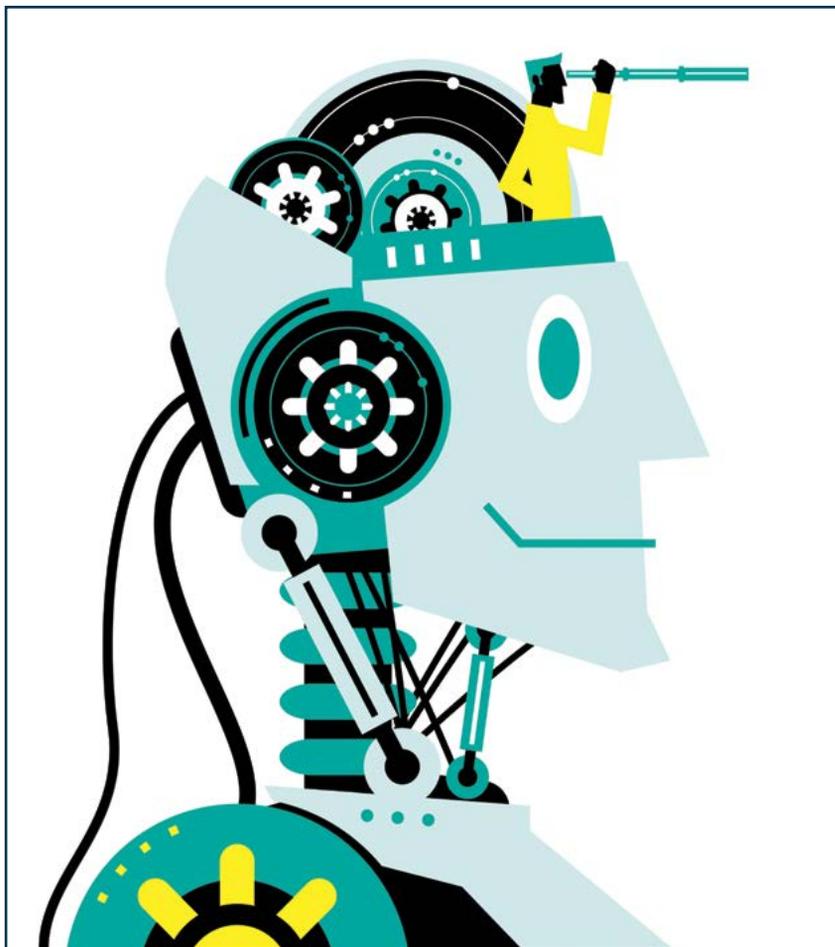


Hotels, Get Ready for Robots

By Katerina Berezina, Ph.D., CHTP, CRME, CHIA

On the verge of entering the world where we will actively and effectively coexist with robots; hotels may have to rethink their design, operating procedures and offered service to make room.



Robots are here, and they are here to stay. Gone are the days when robots were only a part of science fiction movies. I am not talking about manufacturing robots that have been employed in production (e.g., automobile manufacturing) for decades, but about service robots that are assisting humans in various sectors, including hospitality and tourism.

A robotic butler Relay (developed by Savioke) has been attending HITEC since 2015 (*Vivion, 2015*). This robot was showcased on the exhibit floor and joined one of the educational sessions delivered by Steve Cousins, the CEO of Savioke. I was one of the attendees at that session and happened to observe Cousins and Relay walking down the hallway together. What I thought was interesting was that a robot in a crowd of people rushing to their sessions did not cause any unusual reaction from the conference attendees. Everyone just continued walking in the same direction they were going, people gave the way to the robot just like they would to another human being, but did not stop, did not ask questions and did not take pictures. This was the moment when I realized that the future is here: robots are becoming a part of our lives.

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Robots in the Hospitality Industry

Robots actually have been a part of our lives for quite some time. They have been employed in manufacturing, medicine, space and deep sea exploration, agriculture and other industries (*Collins, Cobanoglu, Bilgihan, & Berezina, 2017*), where robots are usually seen only by those individuals who were specifically trained to work with robots. The hospitality industry, however, is one of the pioneering industries that facilitates human-robot interaction ("*Robots in Hospitality*," 2017). Different types of robots are now employed in our industry, for example, robotic front desk agents, porters, concierges, housekeepers, delivery robots, in-room assistants, chatbots and robotic bartenders (*Collins et al., 2017; Ivanov, Webster, & Berezina, 2017; Venegas & Belarmino, 2018*). All these robots present an opportunity to familiarize traveling public with robotic technologies. For many hotel guests it may be a unique chance to see a robot in action and to interact with it. Through these human/robot contacts, our industry may assist developers in understanding consumer preferences (e.g., appearance, speech, etc.), further improving service robots. For example, hotel Henn-Na in Japan uses humanoid and dinosaur front desk robots (*Rajesh, 2015*), which may allow operators to determine whether customers prefer human-looking robots, or not.

Robots For Personal Use

As robotic technologies develop, we also see an increase in robot adoption for personal use. The International Federation of Robotics (IFR) (2017) reported that in 2016 the number of robot units sold for household tasks increased by 25 percent compared to 2015. In 2017, this number rose up to 30 percent, and is forecasted to stay between 30 and 35 percent per year in 2018–2020. The adoption of personal robots for entertainment purposes is also growing at a lower, but comparable speed (2016: 22 percent; 2017: 22 percent, 2018–2020: forecasted 20 to 25 percent). Given these adoption rates and forecasts, it is not unreasonable to suggest that at some point guests may start bringing robots along on trips. If (and when) this happens, the hotel industry should be ready not only to integrate their own robots into the operations, but also to accommodate all those robots brought in by customers. So, how should hotels prepare themselves?

Get Ready For Robots: Education

Education is an essential part of integrating robots into hotel operations. This process should be two-fold: education for employees and education for guests. Employees will need to learn how to operate the robot, and also how to work alongside robots. As with any new technology, a learning curve and resistance may be

expected from some employees. This may be especially relevant if staff members become threatened by robots thinking that technology will replace them. In order to avoid such perceptions, robots should be presented and used as "extensions" of human staff. Hotel managers should explain why robots are there, and highlight how robots will assist employees in performing their duties and delivering a higher quality service.

Guests may also need to be educated about the robotic technologies available at a hotel, so that they become knowledgeable about operating them and start taking advantage of the services delivered by robots. Such information may be conveyed to the guests at check-in by the front desk agents. Also, depending on the type of robot, it may be present at the front desk to "meet" the guests. For example, if a hotel uses a robotic butler, a robotic vacuum cleaner or a voice-activated in-room assistant, these technologies may be demonstrated to guests at the front desk. Such an early introduction may help guests not to be surprised when they receive a delivery from a robot, run into a robotic vacuum cleaner in the hallway, or hear an in-room assistant talking to them as they walk in. In addition to that, if a hotel offers a happy hour for guests, the robotic technologies may be introduced there as well, so that guests may learn and play (if applicable) with them in a relaxed atmosphere.

Get Ready For Robots: Design

Hotels will need to rethink their layout and design to make sure that their facilities are robot-friendly. This means designing (and redesigning) hotels with robots in mind. In order to benefit

from the use of robotic technologies, hotels should provide an environment conducive to a robot performing its core tasks (Ivanov & Webster, 2017). Depending on the type of robot, the necessary environments will also differ. For example, a stationary robot (e.g., a robotic arm) will require a dedicated space, which would ensure that the robot may reach the entire area and not have any interruptions or hurt a human. On the other hand, a mobile robot (e.g., robot butler) may require accessible entrances, clear and wide hallways, access to the elevators, etc.

Get Ready For Robots: BYOR

Following the logic of bringing your own device (BYOD) and your own content (BYOC), a hotel may also allow guests to bring your own robot (BYOR) to the hotel. As the adoption of personal robots grows, we may see guests traveling with their robots. For example, on our most recent family trip we brought a voice-ac-

tivated Google Home assistant with us. The industry has already seen examples of integrating such assistants into hotel rooms (e.g., at Wynn Las Vegas) (Cook, 2016). However, when such an option is not available, guests may choose to bring their own. Similarly, hotels may see customers coming with other types of robots, such as a family robot (e.g., Jibo), a robot pet, a robot companion or a medical assistant robot.

Hotels should also prepare themselves, or at least have a plan for such occasion should it happen any time soon. First of all, employees should be educated about the possibility of having other robots. Also, a certain infrastructure needs to be in place in order to accommodate additional robots on the property. Some items to consider may include power sources/charging stations/power outlets for robots brought by guests. The demand for power outlets increased significantly when guests started bringing

more personal devices to hotel rooms. The same is likely to happen when guests bring their own robots with them. The Internet bandwidth may become an issue as well with additional devices on the network. Another aspect of having guests' robots on property is the navigation issue for mobile robots. If this takes off, hotels may need to introduce additional services, such as a downloadable hotel navigation map that could be uploaded onto a robot.

Currently, we are on the verge of entering the world where we will actively and effectively coexist with robots: communicate with them, employ them for personal and professional tasks, travel with them and maybe even make friends. This is a significant shift for humankind that will require a substantial adjustment from people and businesses as well. Hotels, for example, may have to rethink their design, operating procedures and offered services. So, hotels, get ready for robots! ✨

References

- Collins, G. R., Cobanoglu, C., Bilgihan, A., & Berezina, K. (2017). *Hospitality Information Technology: Learning How To Use It*. (8th ed.). Dubuque, IA: Kendall/Hunt Publishing Co. Chapter 12: *Automation and Robotics in the Hospitality Industry*.
- Cook, J. (2016). Wynn Las Vegas To Equip 4,748 Hotel Rooms With Amazon Echo: It's 'Seamlessly Delicious,' Steve Wynn Says. *GeekWire*. Retrieved on May 11, 2018.
- International Federation of Robotics (IFR). (2017). *Executive Summary World Robotics 2017 Service Robots*. Retrieved on May 11, 2018 from https://ifr.org/downloads/press/Executive_Summary_WR_Service_Robots_2017_1.pdf.
- Ivanov, S., & Webster, C. (2017). Designing Robot-friendly Hospitality Facilities. Proceedings of the Scientific Conference "Tourism. Innovations. Strategies," October 13–14 2017, Bourgas, Bulgaria, pp. 74–81.
- Ivanov, S., Webster, C. & Berezina, K. (2017). Adoption Of Robots and Service Automation By Tourism and Hospitality Companies. *Revista Turismo & Desenvolvimento*, 27/28, pp. 1501–1517.
- Rajesh, M. (2015). Inside Japan's First Robot-staffed Hotel. *The Guardian*. Retrieved on May 11, 2018.
- Robots in Hospitality: Five Trends on the Horizon. (2017). *Hospitality Technology*. Retrieved on May 1, 2018.
- Venegas, T., & Belarmino, A. (2018). A Room For Robots In Hospitality. *HFTP Feature*.
- Vivion, N., (2015). Hotel Robots Catch Up to Personalization as Hot Topics in Hospitality. *Thooz*. Retrieved on May 1, 2018.