Feeling economy

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The feeling economy is "an economy in which the total employment and wages attributable to feeling tasks exceed the total employment and wages attributable to thinking or mechanical tasks" (Huang, Rust, and Maksimovic, 2019, p. 44). In 2020 we are still living in a thinking economy in which were managers of the travel and hospitality industry value more analytical than empathic capabilities for their operational employees. However, increasingly artificial intelligence (AI) algorithms and AI robots are assuming analytical tasks (thinking) and managers and employees are using more and more their interpersonal, communicational, and empathic (feeling) capabilities to perform tasks. Feeling economy is an era where emphatic capabilities become more relevant than ever before. Researchers expect that the transition from thinking to feeling economy occur in 2036 (see figure 1).

AI is transforming the economy with its presence and interaction with human beings (Winston, 1992; Loureiro et al., 2020). In 2020 a vast amount of applications of artificial intelligence systems are found in the travel and tourism industry, from predictive models trained to forecast bookings or cancellations (e.g., ARIMA model), hotels revenue management advisers (e.g., Fairmas CPM Software), to service robots providing the service encounter (e.g., the Connie robot, Hilton Hotels). Business researchers conceptualize AI capabilities based on human skills that can replicate. For example, in the context of service, four different skills of AI were suggested: mechanical AI, analytical AI, intuitive AI, and empathetic AI (Huang and Rust 2018). Mechanical AI is the skill associated with repetitive tasks, allowing machines to provide extreme consistency and reliability. Analytical AI is the skill associated with performing complex,

yet systematic, consistent, and predictable tasks. It often involves processing a large amount of data and extracting patterns. Intuitive AI is the skill associated with performing complex, creative, holistic, and contextual tasks that need intuitive intelligence. Empathetic AI is the skill associated with providing psychological comfort for the wellbeing of humans.

Each AI intelligence can provide benefits (Legg and Hutter, 2007). Mechanical standardize tasks, analytical is good for personalization the service as it recognizes patterns from data (e.g., speech or facial recognition, text mining). The intuitive and empathic AI is associated with feeling AI and the feeling economy. Feeling AI can recognize and respond to emotions. Tourism activities that require communication and interactions to achieve relational benefits are connected to the feeling AI. In 2020, some technologies are using feeling AI, which includes, for example, sentiment analysis, natural language processing (NLP), text-to-speech technology, recurrent neural networks (RNN), chatbots for mimicking human speech, embodied and embedded virtual agents for human interactions, and robots with customized hardware for sensing affective signals.

The travel and hospitality industry is mainly associated with hedonic services, where sensory benefits are key, such as playfulness, fun and pleasure to tourists and guest. Here feeling AI is relevant for communicate and relate with customers (Davenport, Guha, Grewal, and Bressgott, 2020; Tuomi, Tussyadiah, Ling**,** Miller, and Lee, 2020). Thus, as the AI takes the analytical tasks from human beings and begins to acquire more intuitive and empathetic skills, the business models are changing to a feeling economy (Huang, Rust, and Maksimovic, 2019). Feeling tasks become more and more important in the economy for both humans and AI, where AI will dramatically compete with humans in the workplace. Both AI and humans interact using empathic skills.

The travel and hospitality industry is one of the business areas where the use of AI technologies is growing at a face pace, embedding AI into activities such as the customer service, for example by using robots and humanoids as receptionists and guides at hotels and airports. Hotels are a relevant atmosphere for AI adoption, being one of the most well-known examples the Connie robot by Hilton Worldwide Hotels. Connie is an AI-based concierge resorting to AI and speech recognition offering on-demand touristic information to guests. Connie is a small humanoid robot that uses both IBM's Watson AI technology and the travel database WayBlazer to assists guests, mimicking human concierges in a set of regular tasks. This humanoid robot can also learn with human interactions, increasing its knowledgebase to improve future interactions. Several other hotel chains have also done some tests incorporating AI in their service based on this type of technology. Hotels such as the Clarion Hotel in Stockholm, Wynn Las Vegas, or Charlotte, NC Marriot adopted the Amazon Echo to provide personal assistant services such as ordering room service, call a taxi, offer destination information and tips, or allowing guests to use voice to control the room lighting, temperature and television settings.

But not only hotels are adopting AI technology in the tourism sector. The airline companies are also adopting AI since the early stages, mainly for customer relationship management (CRM). Airlines companies such as Qantas Airways, Iberia or Alaska Airlines are using The Yana platform from Volantio Inc, a software as a services firm focused on helping airlines improve capacity utilization, to offer incentives to customers to switch and rebook flights, then re-selling this seats at better prices and ultimately maximizing airline companies revenues. PredictHQ is also a good example of intelligent data usage by airline companies. This solution correlates the relative importance of an event with actual demand, identifying which events will drive demand so airline

companies can package, price and update their load factoring before seats start selling. Not only airline companies, such as Qantas, are using this solution, but also Booking or UBER are among its clients.

In the near future, the tourism and hospitality industry will increasingly implement AI-based intelligent services that are assisting their guests by suggesting services, offers, tips or others and adapting to their customer's preferences. Customers will probably demand AI systems in the near future in all hotel rooms, leading to the so-called 'AI everywhere' prediction, with almost every object being tailored with sensors and processing capability. For the hospitality industry, it may represent that every hotel room will soon be equipped with a smart device due to customers' expectations, on which a personal assistant is running, and adapting its characteristics automatically. However, some customers are likely to refuse artificial intelligence systems, due to privacy issues, personal data misusage, or for sociological reasons, believing this as something unnatural. In addition, tourism and hospitality managers must also be aware of their customers' and employees' perception of AI, as the staff needs to be correctly trained to work with artificial intelligence systems and realize that the use of AI systems is also their interest.

AI is currently impacting the tourism and hospitality industry significantly, either by providing novelty, different offerings and/or lowering operational costs, and it will prevail in the future. As we move towards the feeling economy, the travel and hospitality industry will face major and significant transformations with teams operating with humans and highly intuitive and empathic robots. Furthermore, in the years to come, the travel and tourism firms will also see the indirect impact of the growing acceptance of AI systems outside the industry, due to changes in the marketing and sales systems, to the customers demanding or rejecting artificial intelligence systems, and yet, due to imminent regulations (Buhalis and Leung, 2018). Humans at work will compete with AI, which

poses some issues on the future of the workplace to humans. From an optimistic view, we can argue that AI will augment humans performance and can also leave the empathic tasks to humans. From a pessimistic view, one can imagine that AI will replace humans at work. Indeed, AI will replace humans in analytical tasks. However, human employees will place more weight on feeling intelligence and will become more sensitive to the feeling side of the job when relating to others and above all with tourists or guests. Humans at work need to learn how to work with AI in the same team, augmenting the overall performance and not avoiding or fearing them.

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