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Research note

Leveraging LEGO® Serious Play® to embrace AI and robots in tourism

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Advances in artificial intelligence (AI) and robotics have begun to challenge conventional notions of consumption, production, and management of tourism service offerings. For example, intelligent machines are increasingly being used to handle routine customer enquiries, prepare and serve drinks and food, and monitor and report faults and security breaches (Ivanov, Webster, & Berezina, 2017). However, Murphy, Gretzel, and Pesonen (2019) observe that many tourism businesses still fail to make the most of the available technology. Faced with a plethora of possibilities, tourism operators may find it difficult to decide which technologies to adopt and which to ignore. Equally challenging might be deciding where, when, and how a new technology should be introduced, as well as understanding what its impacts might be for the individual, organisation, and the industry. The situation calls for research methods suitable for addressing forward-looking research questions with complex practical, ethical, and socio-economic implications, including the impacts of automation on customer experience, management, and regulation.

Following in the footsteps of Wengel, McIntosh, and Cockburn-Wootten (2016), it can be suggested that serious gaming, in particular a method known as LEGO® Serious Play®, will help tourism researchers and practitioners better navigate and harness the dynamic landscape of emerging technology. As discussed by Peabody and Noyes (2017), LEGO® Serious Play® is a brainstorming method that makes use of LEGO® bricks to facilitate communication, expression, and problem-solving. Through a series of building activities and peer discussions, LEGO® bricks are used to create stories about the intangible world. The purpose is to break free from the constraints of habitual thinking – the focus is not on the actual bricks themselves, but on the stories they tell and the metaphors they convey (Kristiansen & Rasmussen, 2014).

Brainstorming is generally understood as a "method for generating ideas, increasing creative efficacy, or finding solutions to problems" (Wilson, 2013, pp. 2). According to Osborn (1953) brainstorming aims to maximise the number of ideas generated, create a criticism-free space for even the most unorthodox ideas to emerge, and combine and refine ideas iteratively. Researchers have a plethora of brainstorming methods at their disposal, such as mind mapping (Davies, 2011), the nominal group technique (Ritchie, 1985), and the six thinking hats method (Bono, 1985). Even though all brainstorming exercises aim to evoke divergent ideas, most techniques have a critical flaw: they lack dimensionality. For example, the six thinking hats method sees participants assume one of

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six perspectives (hats) to address problems creatively: goal-oriented, factual, emotion-based, optimistic, realistic and creative. This tends to work remarkably well for concrete problems, but less so for dynamic, elusive ones.

As AI and robotics technologies keep developing at an accelerating speed, it is unclear how what is possible today might change tomorrow. Accordingly, the LEGO® Serious Play® method is centred around the collaborative construction of unforeseen realities (Wengel et al., 2016). The method's strength lies both in its tangibility and unpredictability: the various shapes, sizes, and colours of LEGO® bricks allow for near-infinite combinations of three-dimensional constructs. Building something concrete forces participants to lean-in rather than out, as each construct is unique and thus offers a fresh look at the problem (Hadida, 2013). The aim is to evoke and keep participants in flow – a state of deep focus or involvement (Harmat, Ullén, Sadlo, Andersen, & Wright, 2016).

In LEGO® Serious Play® this is done in four steps: posing a question (setting an agenda and giving instructions for the session), construction (individual building in silence), sharing (discussing everyone's models and their metaphorical meanings), and reflection (asking questions and finding similarities between the models) (Kristiansen & Rasmussen, 2014, pp. 51–52). A typical LEGO® Serious Play® workshop lasts from two to 8 h and will see representatives of everyone affected by the problem at hand, be it employees, customers, suppliers, or other stakeholders, take part in the activities.

It is precisely this collaborative, hands-on approach to problem-solving that we argue makes LEGO® Serious Play® useful for exploring the adoption of AI and robotics in tourism. As a catalyst for structured discussion, LEGO® Serious Play® offers a robust framework for imagining what impacts the introduction of a specific technological innovation (e.g., service robots or chatbots) might have for the service process as a whole. Playing out and evaluating multiple scenarios allows researchers to start conceptualising how AI and robotics will transform service production and delivery in tourism. Involving multiple stakeholders in the brainstorming process offers researchers a wider understanding of the potential problems that may arise from the introduction of new technologies and innovations such as AI and robotics. Due to the high-touch, labour intensive nature of tourism, the successful introduction of new technology is largely dependent on the favour of people impacted by it. Research suggests that transparency and early involvement in the planning stages make it more likely for stakeholders to get behind new ideas (Liedtka, 2015). LEGO® Serious Play® allows researchers to understand differing stakeholder values through specific application techniques (e.g., shared model building, landscaping) that aim to align views and reach consensus.

As the tourism industry becomes increasingly digital (Navío-Marco, Ruiz-Gómez, & Sevilla-Sevilla, 2018), it is imperative that organisations are agile in adopting innovation while also making sure that transitions are seamless and customer expectations are exceeded. With dramatic advancement in tools and applications based on AI and robotics, it is expected that more tourism companies will adopt these to perform tasks critical for organisational decision-making and operations. For organisations with resource constraints, there is often no room for error. In order to demonstrate how LEGO® Serious Play® could help tourism researchers and practitioners find the right solutions to adopt new technologies effectively, a series of workshops were facilitated in early 2019 to explore what the future might hold for the industry. A total of 24 professionals and academics from a diverse set of backgrounds (AI, robotics, design, tourism, hospitality; 13 male, 11 female) were invited to take part. Participants were posed with two questions. First, participants were asked to capture the qualities they love the most about hospitality in individual LEGO® models. The construction of LEGO® models as well as the subsequent sharing of what had been built led to a rich debate on what it really means to work in the industry (e.g., working with and supporting others, solving problems, pursuing knowledge) and how AI and robotics might be used to integrate more of these qualities into day-to-day service operations (e.g., improving cross-team communication, removing friction points). Second, participants were asked to use LEGO® to imagine a restaurant in 2039 (20 years from the date). Again, this led to a meaningful discussion on qualities customers, employees, and providers consider imperative for restaurants now and in the future (e.g., human connection), as well as qualities they find irritating and would rather see delegated to intelligent machines (e.g., unnecessary wait).

The workshops demonstrate the value LEGO® Serious Play® can bring to research that explores the applications and implications of emerging technology in tourism. Having a medium that is both tangible and easy to follow (and often already familiar to participants), yet surprisingly complex and multidimensional, helps stakeholders better imagine, envision, and articulate where and how a novel innovation should best be applied, as well as what impacts it might have on the service system as a whole. From a theoretical perspective, the discussions that occur within these workshops give valuable insight into the reconceptualisation of service production and delivery in tourism. For example, by envisioning the future relationship between the consumption of food, travel, and social interactions, various complex issues around AI-powered service concepts, including whether or not restaurants should have a physical location to induce travel, were confronted and debated. This further elucidates how LEGO® Serious Play® can effectively bring stakeholders together and facilitate forward-looking debate that is critical for pushing both tourism theory and practice forward (Fig. 1).

However, it should be noted that as with all research methods, LEGO® Serious Play® has its limitations. In order for the method to reach its full potential, the workshops require a trained facilitator. Even though the majority of LEGO® Serious Play® training material has been made open source by LEGO®, some of the key facilitation techniques still require external certification from the Association of Master Trainers (2018), the method's quasi-official governing body. Second, the “official” LEGO® Serious Play® method requires a set of special LEGO® bricks, as well as time, space, and access to willing participants, all of which might limit the method's ad-hoc usage. Drawing from our experiences, at least 2 h should be reserved for each workshop, and group sizes should be kept relatively small (ideally around seven to nine participants per session). Lastly, the method's suitability might vary between and across cultural contexts. Participants accustomed to an individualist way of speaking their mind may find it easier to come up with divergent ideas, whereas participants used to a more hierarchical, collectivist way of thinking may find going against the status quo counter-intuitive (Livermore, 2016). Even though our workshops included a diverse mix of nationalities, the vast majority of participants were of Western origin. The method's suitability in Eastern contexts warrants further research. Despite these limitations, LEGO® Serious Play®

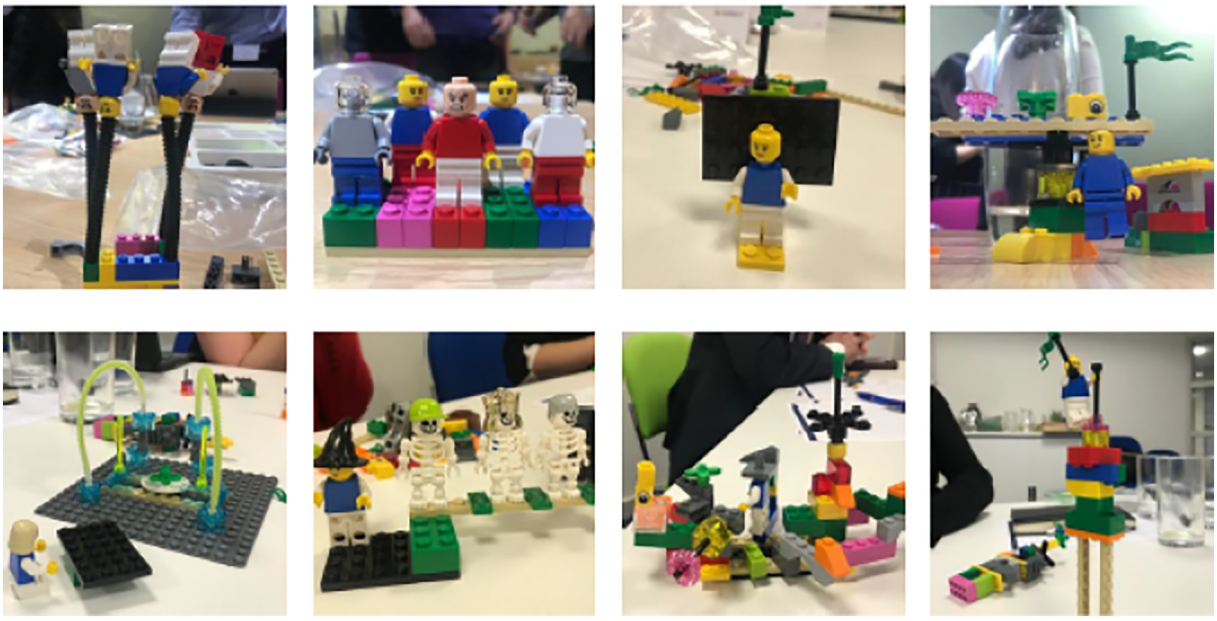

Fig. 1. Using LEGO® Serious Play® to imagine robotised restaurants.

offers tourism researchers a powerful tool for addressing future-oriented research questions, especially ones that involve the adoption of technological innovation. In particular, LEGO® Serious Play® can be leveraged to facilitate various stakeholders together to imagine and articulate a future of automated tourism experiences, including the benefits and risks for different stakeholders.

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