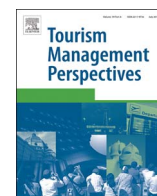




Contents lists available at ScienceDirect

Tourism Management Perspectives

journal homepage: www.elsevier.com/locate/tmp

New technologies in tourism: From multi-disciplinary to anti-disciplinary advances and trajectories

Marianna Sigala

Business School, University of South, Australia

A B S T R A C T

Technologies transform tourism management and marketing from a static and utilitarian sense (whereby managers and tourists use technologies as tools) to a transformative conceptualization whereby tourism markets and actors both shape and are shaped by technology. This paper unravels the transformative power of technologies on: the tourism actors and resources (both the traditional but also new actors, i.e. the technology agents); the ways actors interact to (co-)create but also (co-)destruct tourism value; and the context in which tourism actors interact from a linear supply chain tourism 'industry' to a complex socio-technical smart tourism ecosystem. To study such complex phenomena and transformations, the paper emphasises that research should not only adopt a multi-disciplinary approach, but it also needs to follow an anti-disciplinary thinking whereby new knowledge and constructs do not simply fall within existing paradigms, disciplinary silos and mindsets once developed by studying the 'pure' humans and their behaviours.

1. Introduction

Research and practice in technologies and tourism have been guided and driven by the popular mantra that '*information is the lifeblood of tourism*'. Although technologies will always be important in tourism due to its nature, this position has also restrained our thinking and research about the use and role of technologies in tourism. Technologies are not only instrumental in solving the information and communication functional needs of the industry. Instead, technologies are also a transformational driver of the industry structure and operations as well as the role and functions of its stakeholders. Technological advances are causing fundamental disruptions in tourism by empowering (traditional but also new) tourism actors to form new markets, offerings, management practices and competitive strategies (Sigala, 2018). Thus, technologies are transforming tourism management and marketing from a static and utilitarian sense (whereby managers and tourists use technologies as tools) to a transformative conceptualization whereby tourism markets and actors (tourism providers, stakeholders, intermediaries and tourists) both shape and are shaped by technology.

Tourism research has started looking into these new 'roles', capabilities and changes driven by the technologies. However, to better understand, research and anticipate these fundamental changes, new (and even currently unknown) theoretical lenses, approaches, constructs and even research methods are required. Moreover, although tourism research has always been multi-disciplinary, research in tourism and technologies has not followed the same route. A

'disciplinary' myopia and business bias characterize tourism technology research that is heavily dominated by studies with a marketing and management mindset aiming to advise the industry about the best use and impact of technologies. Less research efforts are found from an anthropological, sociological, psychological, legal, political and other disciplinary approach that can explain a different part of the variance than rational/economic theories. More disciplines and approaches are required to inform and augment tourism technology research needs in order to provide a 360 degree view of the complex and multi-facet phenomena and changes driven and shaped by the technological advances.

Because of that, this paper does not do a meta-analysis of previous studies for identifying gaps and additional questions to inquire about. There are numerous meta-analysis studies (e.g. Leung, Law, Van Hoof, & Buhalis, 2013) and they are valuable for their own purposes. Instead, the paper takes a 'futuristic' and 'helicopter view' perspective by identifying and discussing how technologies have evolved to disrupt and transform tourism actors and resources (both the traditional but also new actors, i.e. the technology agents); the ways actors interact to (co-)create but also (co-)destruct tourism value; and the context in which tourism actors interact from a tourism 'industry' and linear supply and distribution chain approach to a complex socio-technical smart tourism ecosystem perspective. Suggestions on how future tourism technology research should be shaped are also provided. The paper also shows that in the age of open innovation and creativity, disciplinary silos are not appropriate to study complex phenomena.

E-mail address: Marianna.Sigala@unisa.edu.au.

<https://doi.org/10.1016/j.tmp.2017.12.003>

Received 7 December 2017; Accepted 8 December 2017

2211-9736/ Crown Copyright © 2017 Published by Elsevier Ltd. All rights reserved.

Thus, tourism technology research should also increase its explanatory power and contribution by going beyond the business value and mindset. To achieve that, the paper does not only show how 'other' disciplines can better inform tourism technology research, but it also challenges whether disciplinary theories and constructs once developed, tested and refined by studying the current human species and phenomena are currently appropriate and sufficient to study the behaviour of the new and emerging techno-humans or humanoid tourism actors.

2. Technology evolution and advances: embedding smartness in tourism resources and tourism ecosystems

No commentary on tourism technology can exist without a short note about the evolution of technologies and the ways they impact tourism. Numerous technological advances and tools are driving tourism change including: machine learning, artificial intelligence, industrial web, big data, internet of the things, smart devices, robots, drones, sensors, beacons, virtual and augmented reality, near-field communications, ubiquitous computing and many more continuously being added in the list. A plethora of tourism technology applications can also be recorded, but the role of technology in tourism can be summarized in the following functions. Technology as a:

- way of 'individual' expression: e.g. tourism brands communicating and forming their image, tourists sharing experiences and information for self-constructing their social image and identity
- decision support tool for firms (e.g. logistics and pricing tool) and tourists (price comparison tools, meta-search engines, recommender systems)
- market intelligence source for collecting, storing, analysing, sharing, visualizing and interpreting big data (characterized by volume, variety, velocity, veracity and value)
- e-learning tool, evolving education and knowledge management from an instruction led and self-service paced learning mode to collaborative, constructivism, dialectic and nowadays open connectivism learning models (e.g. MOOCS)
- automation tool, substituting labour and 'predictable' – programmable tasks (e.g. self-driven cars), but also augmenting labour by informing and optimizing decision making processes and outputs
- game changer, enabling new business models (e.g. cyber-intermediaries, multi-sided markets, sharing economy) and new management practices (open innovation, crowdsourcing, crowdfunding, gamification)
- a transformer of tourism experiences, e.g. virtual tours, technology mediated or augmented tourism experiences
- co-creation platform (e.g. review websites, wikis based tourism guides, peer-to-peer marketplaces) empowering and providing the space, functionality and connectivity to all tourism actors to actively engage and participate in value co-creation

Overall, there are three words characterizing the features of emerging and future technologies: connectivity, data and smartness. Technology enables any device, tool, object and person to be connected and interact with other 'objects and its environment in order to 'sense' its internal and external context and take actions to adapt to the environment'. Connectivity driven by ubiquitous/pervasive computing and the Internet of the Things (an immense, distributed network that consists of interconnected and embedded systems) provides new data (e.g. actors' connections and interactions) to be collected and analysed to understand patterns and support (autonomous) decision-making by smart agents. Thus, connectivity, data and smartness are interconnected. Connectivity creates new data to be collected, whose collection and analysis can help develop the cognitive capability of a smart system that will not only be proactive and reactive but it would also be able to take autonomous pre-emptive actions. For example, imagine the

case whereby the exercise monitoring device of a tourist will measure the calorie consumption and health conditions of the person, will communicate this data to the restaurant smart ordering and recommendation system to match eating with real time energy consumption and health requirements, and it will place an automated order for an Uber transport once the tourist will complete payment and the heart monitoring system has recorded indication of drunkenness. Hence, smartness (represented in smart tourism services and 'smart' technology agents) is a result of the increased connectivity and data capabilities enabled by technological advances.

In this vein, technology advances are driving the need to convert all tourism resources to smart tourism resources. Their smartness will depend on their smart connectivity and smart data components. Smart sharing bicycles will have sensors to collect internal data about the condition of the bike (e.g. flat tire, loose breaks etc.) and external data of the environment (e.g. type of surface, weather conditions, traffic, time table of firms) in order to take autonomous decisions (e.g. send a message to maintenance company, or a logistics company to re-locate the bike to a place with high bike demand) and better satisfy tourists' needs (e.g. adjust speed to the physical condition of the user, and suggest alternative routes based on traffic, opening hours or congestion of attractions visited by other tourists with similar profile and preferences to the current user). Connected smart actors create and operate within a smart socio-technical tourism ecosystem whereby they interact and exchange resources (e.g. information, computing power, skills, know how, software, cloud-based services) with the aim to achieve three major goals: optimize use of resources (e.g. space, energy, carrying capacity); enhance and enrich tourists' experiences and residents' quality of life; and empower tourism suppliers to take smart data-driven decisions. Smart tourism is not a fad; it is a reality but we have just started studying and understanding its implications (Gretzel, Sigala, Xiang, & Koo, 2015).

3. Traditional tourism actors

3.1. Tourism suppliers

Technology is affecting all business functions and tourism sectors. However, many studies have focused on technology applications and impacts in the hospitality, airline, intermediaries – distribution, attractions and Destination Management Organization (DMOs) sectors, and less studies on sectors representing events/festivals, cruises and other transportation players. Research has examined the impact of technologies on all business operations including: supply chain, logistics, marketing, advertising, consumer behaviour, CRM, procurement, HRM-recruitment, open innovation, new service development and finance/crowdfunding. Less attention but increasing awareness is paid to technology applications and impacts on crisis management (i.e. crisis informatics), e-government, e-democracy and sustainable management.

But again, instead of trying to identify gaps in existing technology areas in tourism, one should look at the bigger picture to identify trends and research trajectories. The three technology features of connectivity, data and smartness reinforce the need to challenge and further study how firms (should) respond to their impacts. Connectivity destroys linear tourism value chains and replace them with complex tourism ecosystems that enable and support various forms of interactions and collaborations amongst a variety of actors, e.g. firm-to-firm, customer-to-firm, machine-to-customer, machine-to-machine. Peer-to-peer market places fueling the sharing economy are disrupting all traditional tourism sectors (e.g. accommodation, transportation, social dining, guiding and tour operations, intermediaries) and reinforce the rise of an asset-light/zero fixed costs economy (Airbnb the largest hotel chain owning none room, Uber the largest taxi company owning none vehicle) (Sigala, 2018). Data do not only enable firms to take data-driven decisions (by supporting evidence-based management, streamlining administrative complexities and identifying new business

Download English Version:

<https://daneshyari.com/en/article/7422609>

Download Persian Version:

<https://daneshyari.com/article/7422609>

[Daneshyari.com](https://daneshyari.com)