

# How do innovators stay innovative? A longitudinal case analysis

*Sven Tuzovic*

School of Advertising, Marketing and Public Relations, Queensland University of Technology, Brisbane, Australia

*Jochen Wirtz*

Department of Marketing, National University of Singapore, Singapore, and

*Loizos Heracleous*

Warwick Business School, Coventry, UK

## Abstract

**Purpose** – How can some companies be the innovation leader in their industry over prolonged periods of time, whereas others cannot? The purpose of this study is to understand a firm’s capability to be a successful serial innovator and to generate a constant stream of industry-leading innovations.

**Design/methodology/approach** – The paper uses a longitudinal case study approach to gain an understanding of what and how Singapore Airlines sustained service innovation for over 30 years. The study uses triangulation, whereby the core data from in-depth interviews with senior and middle management and frontline employees were complemented with academic research, case studies, annual reports, observations and archival documents. In total, 240 single-spaced pages of interview transcripts with over 130,000 words were analyzed and coded using MAXQDA for identifying repeated patterns of meaning.

**Findings** – The authors identified three key institutional foundations for service innovation: innovation climate (i.e. leadership and service culture), human capital (i.e. recruitment, training and development and engagement and incentives) and resource configurations (i.e. systems, structure and processes). These foundations enabled the organization to build the following four service innovation-related dynamic capabilities: embrace ambidexterity, institutionalize learning and knowledge integration, orchestrate collaboration and reinvent customer value. Interestingly, these institutional foundations and capabilities remained largely stable across 30 years; what changed were the contexts and specifics, not the foundations and capabilities.

**Research limitations/implications** – Data were collected only from one company. Because of the method of thematic analysis, the generalizability of the findings needs further investigation.

**Originality/value** – This study is the first to investigate the drivers of industry-leading sustained service innovation over a prolonged period of time. The proposed framework provides a fuller and more integrated picture of sustained service innovation than past cross-sectional studies.

**Keywords** Service innovation, Dynamic capabilities, Longitudinal case study, Singapore Airlines, Serial innovation

**Paper type** Research paper

## Introduction

And that every time we reach a goal, we always say that we got to find a new mountain or hill to climb. (Senior Vice President Product and Service, 2001).

How can some companies be the innovation leader in their industry over prolonged periods of time (i.e. are serial innovators; Hamel, 2006), whereas many cannot? Consider the case of *Singapore Airlines* (SIA). Founded in 1972, the airline has over decades routinely been voted the “best airline”, “best business class”, “best cabin crew service”, “best in-flight food”, “best for punctuality and safety”, “best for business travelers”, “best air cargo carrier” and even “Asia’s most admired company” (Wirtz and Johnston, 2003;

Wirtz and Zeithaml, 2017) and continues to be one of the most successful and consistently profitable airlines in the world (Deshpande and Hogan, 2003; Wirtz and Zeithaml, 2017). Evidence of the firm’s sustained innovation performance includes the following:

- In 1979, only six years after being formed, SIA was ranked first among 40 airlines in the Service Index Ratings prepared by International Research Associates with a rating of 78 for esteem and performance, compared to an industry average of 62.9 (Wyckoff *et al.*, 1989).
- In 2016, SIA was ranked number 1 for 29 of the past 30 years in the Condé Nast Traveler’s World’s Best Airline Award (Singapore Airlines, 2017).
- SIA was the top-rated airline in the Customer Satisfaction Index of Singapore since its inception in 2008 (CSISG, 2016).

---

The current issue and full text archive of this journal is available on Emerald Insight at: [www.emeraldinsight.com/0887-6045.htm](http://www.emeraldinsight.com/0887-6045.htm)



Journal of Services Marketing  
32/1 (2018) 34–45  
© Emerald Publishing Limited [ISSN 0887-6045]  
[DOI 10.1108/JSM-02-2017-0052]

---

Received 24 February 2017  
Revised 15 August 2017  
23 November 2017  
26 November 2017  
Accepted 28 November 2017

SIA’s success was built on its ability to be a serial innovator. *Serial innovation* occurs when an organization is repeatedly successful in adopting change over time (Hamel, 2006). The airline pioneered a series of strategic innovations, introducing many firsts in the airline industry that sustained its competitive edge over decades in the face of intense cost pressure, industry crises and trends toward commoditization (Heracleous and Wirtz, 2010; Wirtz and Zeithaml, 2017). Yet, even though SIA was well known for its service excellence, it was also one of the industry’s most cost-effective operators (Wirtz and Zeithaml, 2017).

The crucial question is:

Q1. What enabled SIA to not only achieve but also sustain service innovation over very long periods of time?

We define *sustained service innovation* as a firm’s capacity to generate a stream of industry-leading innovations (i.e. multiple new products and services, encompassing both incremental and radical innovations) with a reasonable rate of commercial success (Dougherty and Hardy, 1996). Understanding the determinants that allow an organization to be innovative over time has proved to be particularly complex (Corradini, 2013).

Although the academic literature has extensively studied *dynamic innovation capabilities*, almost all research has been cross-sectional, with the notable exception of Damanpour et al. (2009), who studied a four-year period (Figure 1). Thus, these studies do not provide insights on how an organization can be a serial innovator over long periods of time. Here, our study makes an important contribution by exploring the long-term institutional foundations and service innovation-related capabilities that enabled a firm to persistently innovate and prevail in a hyper-competitive business environment.

### Literature review and background

Service innovation has been widely recognized as a primary source of competitive advantage (Snyder et al., 2016) and as a research priority (Ostrom et al., 2010). Historically, the innovation literature has primarily focused on products and

technical innovations as opposed to services (Weerawardena and Mavondo, 2011). Over the past decade, the body of scholarly research on service innovation has grown considerably (Carlborg et al., 2014; Lusch and Nambisan, 2015). The research momentum underscores the significance given to service innovation in different fields, including marketing (Nijssen et al., 2006), strategy (Verma and Jayasimha, 2014), economics (Djellal et al., 2013) and information systems (Kim et al., 2015).

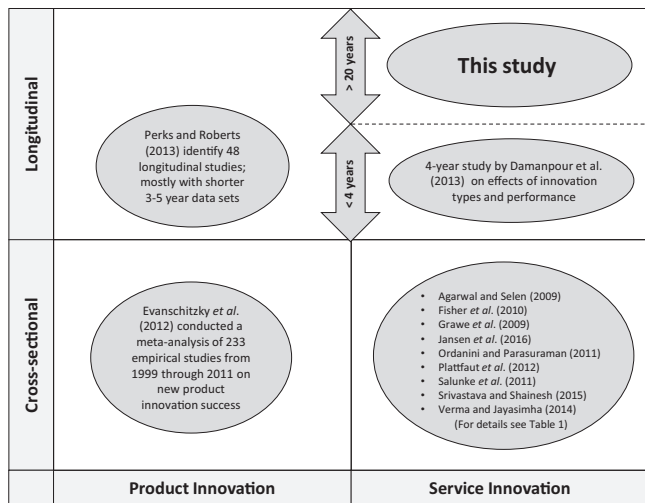
Service innovation is a broad and loosely defined concept (Witell et al., 2016). Salunke et al. (2011, p. 1253) conceptualize service innovation as “the extent to which new knowledge is integrated by the firm into service offerings, which directly or indirectly results in value for the firm and its customers”. This view captures both continuous and discontinuous innovation and the improvement of existing services and the creation of radical new services.

In recent years, the topic of innovation persistence has attracted a growing interest by scholars in manufacturing and product contexts; they have adopted a wide range of econometric approaches (see a review of 30 empirical studies by Le Bas and Scellato, 2014) but with inconsistent results (Haned et al., 2014). Analyses of case studies suggest that “many elements, other than continuous R&D or continuous innovation output, influence the ability of firms to be persistent, successful innovators” (Lhuillery, 2014, p. 518). For example, persistent innovators may use the market for technology more efficiently. The available literature on innovation success does not investigate the mechanisms that enable firms to replicate innovation success over time (Lhuillery, 2014).

In the strategic management and marketing-related innovation literature, the discussion of *dynamic capabilities* (also referred to as innovation capability or innovative capability, Hogan et al., 2011) has gained prominence in understanding service innovation-based competitive advantage. A number of researchers have proffered different definitions and conceptualizations (Den Hertog et al., 2010; Eisenhardt and Martin, 2000; Teece et al., 1997; Teece, 2007). Teece et al. (1997) define dynamic capabilities as the firm’s ability to integrate, build and reconfigure internal and external competences to address rapidly changing environments. Eisenhardt and Martin (2000, p. 1107) provide an alternate view and argue that “dynamic capabilities are the organizational and strategic routines by which firms achieve new resource configurations as markets emerge, collide, split, evolve, and die”. Salunke et al. (2011, p. 1252) define dynamic capabilities as the “capacity of an organization to purposefully create, extend or modify its knowledge-related resources, capabilities or routines to pursue improved effectiveness”. Furthermore, some scholars distinguish between lower- and higher-order capabilities (Winter, 2003), and others name those higher-order capabilities as meta capabilities (Collis, 1994) or regenerative capabilities (Ambrosini et al., 2009). Despite the different definitions and conceptualizations, the dynamic capabilities perspective has become a prominent theoretical lens to study service innovation-based competitive advantage.

Empirical work has identified a number of dynamic capabilities, including strategic orientation, organizational learning, knowledge integration and collaborative competencies

Figure 1 Overview of the literature and positioning of this study



(Table I). Note that these studies are predominantly cross-sectional. However, Le Bas and Scellato (2014) argue that dynamic capabilities co-evolve over time in step with a firm's innovation persistence and conclude that the institutional foundations for dynamic capabilities and firm innovation over time require further studies. We describe next the method we use to address this gap and examine the long-term innovation capability of a leading service organization.

## Method

### Research approach

We adopted a longitudinal case study approach for three main reasons. First, case studies are deemed a suitable method when the proposed research is largely exploratory addressing “how” and “why” questions (Gummesson, 2017; Yin, 2014) and when the research question requires a need for richness of data (Stavros and Westberg, 2009). Dynamic capabilities are difficult to imitate because of their complex nature, making it harder to identify them for research purposes (Fischer *et al.*, 2010). Matvejeva (2014, p. 550) argue that focusing:

[...] the analysis on one economic entity (a firm) allows going deeper into the details of internal processes and makes a valuable contribution to the understanding of the emerging relationships based on the qualitative richness of the discovered evidence.

Second, single case research is known for its descriptive power and attention to context and is recommended to study organizations that represent outstanding successes or notable failures (Ghauri, 2004). As established in the Introduction, SIA has been recognized as an innovation and service leader for over 30 years.

Third, scholars have emphasized the importance of longitudinal studies in understanding the management of innovation in organizations (Damanpour *et al.*, 2009; Van de Ven and Huber, 1990). This view is particularly applicable to this study because the service innovation–performance relationship is path-dependent and takes place over time (Damanpour *et al.*, 2009). Thus, the adoption of innovation at a point in time will not sufficiently explain innovation success over time (Damanpour *et al.*, 2009).

Given the widespread recognition of SIA as an innovation leader over the past 30 years, we consider this in-depth study of SIA to be both a unique and revelatory case (Yin, 2014). Aligned with our research question, SIA allowed us to explore patterns of persistent innovation capabilities that are instrumental in achieving sustained industry-leading service innovation.

### Data collection

We analyzed data from a number of sources, both primary research and secondary data. Our primary research consisted of in-depth interviews with SIA's management and staff and was conducted in four phases (Figure 2). The interviews were exhaustive, ranging from approximately 45 to 75 min, and were conducted by two interviewers simultaneously, which facilitated in-depth coverage of issues (Salunke *et al.*, 2011). During the interviews, probing questions were used to clarify and explore participants' responses and to elicit further insights (Creswell, 2009). The interviewers followed an emergent design method with the purpose to add, delete and modify

questions throughout the research process (Taylor and Bogdan, 1984).

Note that the interviews for Phases 1–3 were conducted for previously published research by Heracleous, Wirtz and colleagues to explore SIA's strategy and competitiveness. Their publications were based on subsets of the interviews using traditional analysis. For this study, we reanalyzed the complete set of interviews with a focus on service innovation by using a computer-assisted tool. Table II summarizes the sample characteristics.

All interviews were recorded and transcribed, resulting in 240 single-spaced pages of transcripts, comprising a total of 130,297 words. Transcripts were read for accuracy and then imported into MAXQDA12 ([www.maxqda.com](http://www.maxqda.com)), a computer-assisted qualitative data analysis tool (Silver and Lewins, 2014). The transcribed interviews were subjected to thematic analysis (Boyatzis, 1998), an analytic technique suitable for identifying “repeated patterns of meaning” (Braun and Clarke, 2006, p. 86). We followed a systematic step-wise recursive process in the thematic analysis of the data, as suggested by Braun and Clarke (2006).

Multiple sources in case research help to validate and triangulate emerging ideas and interpretations (Golden, 1992). Therefore, we complemented our primary data with our field notes from observations within SIA, SIA's annual reports, archival records, industry reports, academic publications (Heracleous and Wirtz, 2010; Heracleous *et al.*, 2009; Wirtz and Zeithaml, 2017; Wirtz *et al.*, 2007, 2008) and case studies on SIA (Deshpande and Hogan, 2003; Deshpande and Lau, 2016; Goh, 2005; Wyckoff *et al.*, 1989).

We then returned to literature to compare the emergent themes with existing frameworks (Salunke *et al.*, 2011). This approach is consistent with Eisenhardt's (1989) observation that tying emergent theory to extant literature enhances the internal validity, generalizability and theoretical level. Figure 2 illustrates the timeline of data collection and selected SIA innovations.

## Institutional foundations of sustained service innovation

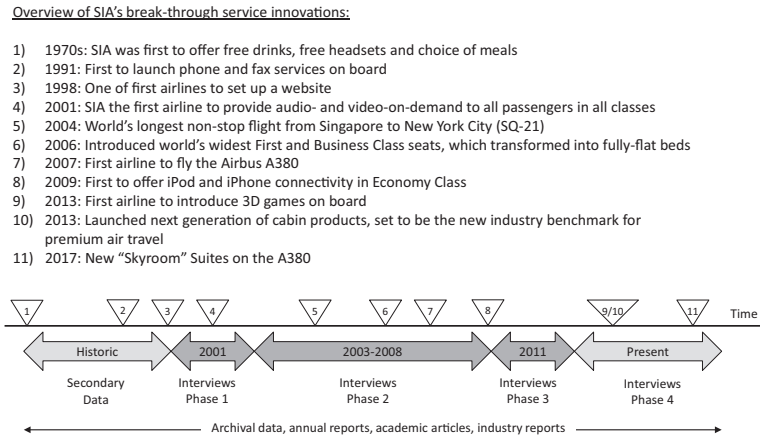
As part of the text analysis in MAXQDA, we developed a coding theme based on the literature (e.g. code: collaboration; keywords: cross-functional collaboration, collaborating with [business partners/customers], to engage customers, customer engagement, customer participation, to talk with customers). Our initial themes were guided by dynamic capability theory. We then searched for similarities and differences between the codes to start grouping them into a hierarchical tree structure. New codes were created in an iterative fashion to capture the meaning of groups of initial codes (Thomas and Harden, 2007). Next, the interview findings were triangulated with our secondary data.

This analysis suggests that different determinants were responsible for SIA's sustained service innovation success, which can be grouped into two broad categories. We labeled the first category as *institutional foundations* (also referred to as organizational assets, Galbreath, 2005) consisting of innovation climate, human capital and resource configurations. The second category was labeled as *innovation-related dynamic capabilities* (Ngo and O'Cass, 2009; also referred to as innovative capabilities, Chen, 2009). One surprising finding is

Table 1 Empirical studies of dynamic service innovation capabilities

Authors	Sector/country	Conceptualization of dynamic service innovation capabilities	Key findings
<b>Birkinshaw et al. (2016)</b>	Pharmaceutical, (GSK), automotive (BMW), food (Nestle)	Lower-order (sensing and seizing) and higher-order (transforming/reconfiguring) capabilities	Sensing, seizing and reconfiguring capabilities depend on three modes of adaptation (structural separation, e.g. Nestle, behavioral integration, e.g. GSK, and sequential alternation, e.g. BMW)
<b>Fischer et al. (2010)</b>	Capital goods industries; Germany and Switzerland	Sensing, seizing, reconfiguring	Companies either exploit or explore opportunities when it comes to service business development DCs differ between the two approaches and predict which way a company chooses
<b>Grawe et al. (2009)</b>	Electronics industry; China	Customer orientation, cost orientation, competitor orientation	Both customer- and competitor-orientation are positively related to service innovation capability Relationship between cost-orientation and service innovation was not significant
<b>Janssen et al. (2016)</b>	Multi-industry (76% services); The Netherlands	Sensing (user needs and technological options), conceptualizing, coproducing/orchestrating, scaling/stretching	Authors develop and validate a new scale of five DCs: (1) sensing user needs, (2) sensing technological options, (3) conceptualizing, (4) coproducing and orchestrating and (5) scaling and stretching Sensing user needs and sensing (technological) options are linked to conceptualizing, which in turn is related to coproducing and orchestrating, and scaling and stretching Capabilities correlate to different extents with firm performance
<b>Ordanini and Parasuraman (2011)</b>	Hotel industry; Italy	Collaborative competences, dynamic capability of customer orientation, knowledge interfaces	Customer collaboration contributes to innovation volume but not radicalness (and vice versa for collaborating with business partners)
<b>Parida et al. (2015)</b>	Manufacturing; global	Developing customer insights, integrating global knowledge, creating global service offerings, building digitalization capability	Path toward global service innovation is a gradual, three-step process which requires a distinct focus: (1) collaboration, (2) integration and (3) orchestration
<b>Plattfaute et al. (2012)</b>	IT consulting; Germany	Sensing, seizing and transformation	Capabilities of sensing, seizing and transforming vary for "event-dependent" (i.e. consulting projects for clients) and "event-independent" situations Current understanding of dynamic capabilities was only partially useful for explaining service innovation at the client organization
<b>Salunke et al. (2011)</b>	Project-oriented service firms; Australia	Episodic learning, relational learning, client-focused learning, combinative capability	Innovation is an integral component of competitive strategy in project-oriented service firms Episodic learning, relational learning, and client-focused learning are key drivers of service innovation Building and nurturing these DCs involves three inter-related processes or routines: (1) create, (2) extend and (3) modify
<b>Srivastava and Shainesh (2015)</b>	Health care; India	Knowledge, technology, institutions	Identified four enablers of ICT-based service innovations: (1) obsessive customer empathy, (2) belief in transformational power of ICT, (3) continuous recursive learning and (4) efficient network orchestration
<b>Verma and Jayasimha (2014)</b>	Finance and IT consulting; Mexico	Collaborative efforts (customer and business partners), technology (IT infrastructure and knowledge integration mechanisms), organizational resources (market and innovation orientation)	DCs have a positive and significant relationship with service innovation success Customer orientation strengthens the service delivery–performance relationship

**Figure 2** Timeline of data collection and selected SIA's innovations



**Table II** In-depth interviews analyzed

Phase	Year	Gender	Position	
1	2001	Female	Senior Manager HRD	
	2001	Male	Senior Vice President Cabin Crew	
	2001	Male	Senior Manager Cabin Crew Performance	
	2001	Female	Senior Manager Cabin Crew Training	
	2001	Female	Senior Manager Cabin Crew Service Development	
	2001	Male	Senior Vice President Product and Service	
	2001	Female	Commercial Training Manager	
	2	2003	Male	Senior Vice President Product and Service
		2004	Male	Senior Manager, Product Innovation
		2004	Male	New Service Development
2005		Male	Senior Manager, Product Innovation	
2005		Male	Senior Manger cabin crew performance	
2005		Male	Senior Manager, Crew Performance	
2006		Male	Cabin Crew	
2006		Female	Cabin Crew	
3	2008	Male	VP Company Planning and Fuel	
	2008	Male	VP Contracts (former VP Product Innovation)	
	2011	Male	Acting Senior Vice President Cabin Crew	
	2011	Female	Vice President Customer Affairs	
	2011	Male	Vice President Product Innovation	
	2011	Male	Senior Vice President Human Resources	
	2011	Female	Inflight Supervisor	
	2011	Male	Inflight Supervisor	
	2011	Female	Senior Manager Inflight Services	
	2011	Male	Vice President Public Affairs	
4	2011	Male	Manager Performance Management and Development	
	2011	Male	Senior Vice President Product and Service	
	2016	Male	Senior Vice President Customer Affairs	
	2017	Male	Senior Vice President Customer Affairs	

that these foundations and capabilities seem to be stable over time. While terminology, technology and contexts changed, the basic underlying foundations and capabilities did not (Figure 3). We discuss the findings related to institutional foundations in this section.

**Innovation climate (“lead to innovate”)**

Our case data suggest that SIA built and nurtured a strong *innovation climate*, driven by leadership that consistently over decades emphasized the importance of innovation to retain SIA’s industry-leading position. This forceful emphasis on innovation by SIA’s leadership resulted in a strong innovation culture that transcended the entire organization. The result was that SIA was involved in “constant innovation” to improve existing products and services as it internalized forward-thinking to push for regular “quantum leap innovations”, largely driven by customer needs, technology and the conviction of having to stay ahead of competitors. This focus on innovation was prominent over all decades studied, as shown by the quotes below:

Because we are SIA we have a brand to support, a brand that says that we have to be a premium carrier, and that we always do better than our competitors. That’s why our customers want to fly with us. (Senior Vice President Product and Service, 2003)

[Innovation] is to a large extent governed by [...] the need to differentiate, in other words staying ahead as we are a premium carrier. (Senior Vice President Product and Service, 2003)

The culture of innovation is so pervasive in the company that most functional departments have the innovation objective as part of their mission. (Senior Manager, Product Innovation, 2005)

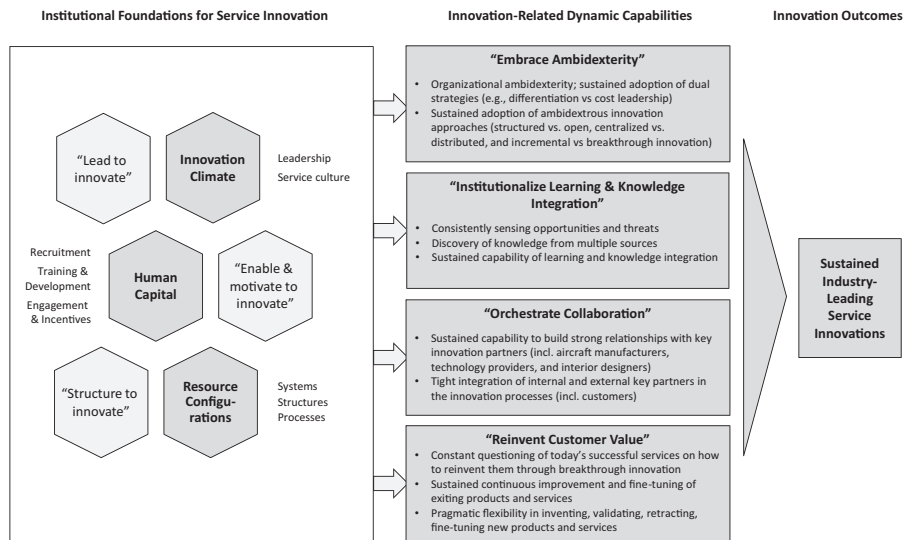
A flight has many, many sub-components. By being better at every one of these sub-components we give our competitors a hard time. By the time they copy, we would already have moved ahead. This means constant innovation, and constant development in all the things we do. (Senior Vice President Product & Service, 2009)

Everyone in this company really understands the value of innovation. [...] You always have to stay a step ahead. (Vice President of Public Affairs, 2011)

**Human Capital (“enable and motivate to innovate”)**

SIA’s innovation success was enabled by highly capable human resources. Specifically, SIA consistently invested heavily in human capital over the 30-year period studied, including having rigorous and well-developed processes relating to recruitment, training and development and employee engagement and incentives. One interviewee referred to training at SIA as “almost next to godliness”. One of the important outcomes of having top quality human capital was its

Figure 3 Proposed framework of sustained industry-leading service innovation



systematic and company-wide innovation capability driven by SIA employees’ future and innovation orientation and their pro-activeness, creativity and readiness to innovate. These capabilities were supported through a clear innovation component in all human capital-related policies (e.g. constant job rotation to drive improvements and innovation), activities (e.g. training) and targets and incentives (e.g. performance evaluations contain innovation-related key performance indicators), as is shown in the quotes below:

Within the Product Innovation Department there is what we call the innovation lab, where resources are on a one-year basis. This person who comes in can be from anywhere in the company, be it the cabin crew or the engineering division or elsewhere. They would be asked to come into this idea lab, where they will spend one year coming up with ideas. (Vice President Contracts, former Vice President Product Innovation, 2008)

So [there are] a lot of areas for improvement because this is a huge organization. [...] So it’s [...] about process improvement, training, to drive up productivity and quality of the people. (Senior Vice President Product and Service, 2011)

There’s a group of them [cabin crew], and we’re asking them to brainstorm. We have certain objectives, so [...] we do this kind of thing quite regularly. (Infight Supervisor, 2011)

[The] innovation process can be a bit chaotic. [...] We need to be able to think out of the box. And sometimes pressures come in and people are creative when they’re under some pressure. (Senior Manager Infight Services, 2011)

Their KPI is how many good ideas they can come up with. It’s not easy, it’s very challenging actually. (Vice President Contracts, 2008)

**Resource configurations (“structure to innovate”)**

The interviews show that SIA supported its innovation capability through adapting and reconfiguring its structures, systems and processes. Change in these was a constant to adapt to changing customer requirements, competitor activity and technology. However, throughout the 30-year period, structures, systems and processes were in place to drive innovation, as is shown in the quotes below. For example, SIA established the program “Future Works”, which was an annual mini boot camp that consisted of some 50 executives from various departments, to work on SIA’s next breakthrough innovations:

The concept is to bring together a group of people from different departments and backgrounds, lock them up for a few days [...] and do brainstorming. Participants will have a chance to let their imagination run wild. At the end of the workshop, they will be given a chance to present their ideas to the Venture Board, a selected group of SIA’s senior vice presidents. Funds will be provided to develop ideas if the board endorses them. (Senior Manager, Product Innovation, 2004)

More recently, Future Works was superseded by a different program which places staff from various departments of the company into the innovation lab for a year to come up with new ideas and to involve others in developing and testing them.

Furthermore, SIA internalized the concept of “distributed innovation” (Lakhani and Panetta, 2007; von Hippel 2005), also referred to as open innovation, which is decentralized and unstructured in nature. This fluid and flexible approach to distributed innovation enabled and encouraged departments and individuals to take ownership of their innovations. Thus, employees felt more motivated that their ideas contributed to SIA’s performance. For example, one initiative that ran for over 10 years globally across all stations and units was Transforming Customer Service (TCS):

TCS is a pretty integrated system where you look at not only the processes, but you [also] look at the people. And the customer is the underlying reason why you do those things. Because, basically, what you want is to anticipate the customer’s needs, to exceed the customer’s wants. And you want to empower your people to be able to do that. And to put into place processes that enable the employees to do that. So it is interrelated. It is seen as one. You cut it down and dissect it. When you do service process reengineering, you actually dissect it into bits where you just examine that. But actually, it’s linked together. (Senior Manager HRD, 2001)

**Service innovation-related dynamic capabilities**

The interview analysis suggests four broad clusters of dynamic capabilities that enabled SIA’s sustained service innovation (Figure 3). We describe these capabilities and feature sample quotes below.

**Embracing ambidexterity**

The case data suggest that SIA managed to embrace ambidexterity and pursue paradoxical positions. First, its dual focus on differentiation and cost leadership was an important

driver and consideration in almost all innovations. For example, SIA's innovation department did not only focus on service innovations but also rigorously emphasized costs. When SIA launched the then-widest business class seat in the industry, it designed it to “wow” travelers. The seat could be flipped over and turned into a flat bed with a duvet and a bigger pillow. As the flipping was done manually, the number of heavy motors in a seat could be reduced, which resulted in significant savings in manufacturing, fuel and repair and maintenance.

Second, SIA sustained innovation by adopting a seamless combination of centralized (i.e. structured and rigorous) and distributed (i.e. open and emergent), and break-through and incremental innovations. For example, the Product Innovation Department followed a well-defined innovation framework that guided processes, including opportunity identification and selection, concept evaluation, design and development and new service launches. This central unit focused on ground-breaking, dramatic innovations such as the cabin design of the newly launched A380 in 2007 and its new “Skyroom” Suites in 2017 and also developed more incremental improvements:

We launched our new Japanese meal. It has been around with us for many years, but after 10 years or so, we enhance it and give it new look. (Senior Manager Inflight Services, 2011)

We continue to enhance [the] business class seat [...] as part of this refresh program. (Manager New Service Development, 2011)

While the large, centralized innovation department was key in driving significant and incremental innovations, SIA also showed a strong distributed innovation capability:

The idea is that innovation is not the sole monopoly of one small group of people here. I have only 18 people, how much can we do? Future Works want to tap the resources of the whole company. (Senior Manager, Product Innovation, 2004)

Whether you are in Product Innovation or whether you are in Inflight Services, Ground Services and so on [...] they are all very innovation-oriented, so in that sense, it is decentralized to all these departments. (Senior Manager, Product Innovation, 2005)

### Institutionalizing learning and knowledge integration

The interviews show that SIA used intensive sensing, discovering and accumulating of knowledge from a wide range of sources and managed to integrate and synthesize all this information. SIA embedded employees, customers, suppliers, contractors and design firms in the knowledge accumulation process. SIA constantly monitored customer feedback on current service offerings, tracked competitors' products and service and used extensively surveys and benchmarking tools. The case data show that SIA managed to implement learning routines and processes (e.g. feedback loops between cabin crew and the service department) and establish knowledge interfaces across the organization, share knowledge across units and integrate the knowledge to sense opportunities and problems to develop solutions. This capability was visible across the entire 30-year period of observation. The following quotes illustrate this capability:

I am [in] product innovation. So what we have to do is bring in in-flight entertainment people and engineers and cabin crew and so on. Then we will explain what the concepts are [and ask] are you all interested, do you think that for your product this is going to add value? If they say yes, that will be one more endorsement from the users. Then we will sit together and do a business case. (Senior Manager, Product Innovation, 2004)

How we explore that? It's a lot of interactive processes. (Senior Manager Inflight Services, 2011)

One of the things we can do in terms of innovation is not necessarily always coming up with new ideas. If somebody can do [something] very well, we can emulate them and do better. (Senior Manager, Product Innovation, 2004)

### Orchestrating collaboration

Innovation at SIA was generally conducted jointly with key internal stakeholders and a network of external innovation partners, including technology suppliers, aircraft manufacturers, airports and, of course, customers. The case evidence suggests that SIA had recognized the strategic importance of collaborative relationships for a long time and therefore had orchestrated their participation in the innovation process and developed close relationships with these partners. For example, SIA engaged in a strategic partnership with Panasonic for redesigning its inflight entertainment system. They worked closely with external vendors where they sometimes even provided ideas for new products their vendors would develop. The following quotes illustrate how SIA orchestrated internal and external collaboration:

In SIA, we used a lot of task forces. We are only the product people, so we work with the engineering department [...] there would also representatives from cabin crew and inflight services. (Vice President Contracts, former Vice President Product Innovation, 2008)

Cabin crew can tell us, they feel that this product may not work [...] they're [an] important integral of this process, because if they can't deliver, no matter how good the product is, it is useless. (Senior Manager Inflight Services, 2011)

We engage [customers throughout] the stages of the development cycle, we actually call back some of these customers [...] I don't think it's done anywhere else in the world. (Vice President Contracts, former Vice President Product Innovation, 2008)

I view the [airport] lounge for us as a place to engage our customers [...] one of the key concepts is to allow passengers to test and give feedback, and to get them involved in the development process. (Senior Vice President Product and Service, 2011)

[This] collaborative approach, with aircraft manufacturer, Boeing, Airbus, with the design firms, with the seat manufacturers, stakeholders within and cross-division colleagues [is] even more prevalent. (Vice President Product Innovation, 2011)

We have to plant the ideas into the software developers [SIA's vendor] to enable this idea at the end of the day. (Senior Vice President Product and Service, 2011)

### Reinventing customer value

SIA was able to constantly transform and reconfigure existing value constellations that oftentimes did not just lead to innovative products and services but that redefined industry standards. When SIA introduced its first suite in 2007, coinciding with the inaugural Airbus A380 passenger flight, it was a “big deal” as no other airline had ever put a double bed on an airplane. SIA's 2007 annual report described the new Suite Class as “truly a class that goes beyond first”. A decade later, SIA was still able to “wow” customers. SIA recently introduced a “massive new suite” for the Airbus A380. This constant questioning and reinventing of its value propositions is shown in the quotes below.

It's very easy to love what we do, and that's the danger. It's easy to say that the customers will surely want what we do. To be a winner, we have to continually strive to provide the very best service when compared with any industry. That's why it's so challenging. Whatever we do, we are in search of excellence and are never willing to settle for what we have already achieved. It's good to be passionate, but I think you must be able to say "I'm willing to kill it with a better program". And that is a huge challenge internally. We have to be able to tell ourselves that, "I love this new thing that I've developed and we'll make sure that it's well implemented". However, we also have to kill it with a better product in X number of months. It could be six months, it could be 12 months, it could be 20 months. But you have got to kill it because the lifestyles of our customers are continuously evolving [...] This means constant innovation and constant development in all the things that we do. (Senior Vice President Product and Service, 2003)

When we introduced our new business class called Space Bed on board, it has always been our tradition, every time we do anything we do it in a package. It is a stronger proposition to our customer than to say that I have a better cup. We say that the cup comes with better coffee, better delivery, better design and better software. It is not just talking about the cup. Same thing when we introduced the seat. We talk about our service, our food, our thing. (Senior Vice President Product and Service, 2003)

Everyone can have similar aircraft as long as you have the capital. But for SIA, what makes us different is in our configuration in the aircraft (Senior Manager Inflight Services, 2011)

All our departmental heads, including myself, try to encourage our managers to be centers of discontentment! They have to be continuously unhappy with some things. I mean that you just have to have the sense to continually assess everything, and preferably before your boss asks you. As a result of the constant injection of new blood into the company, there is a breath of fresh air. Just asking questions, "why can't I have it, why does it have to be this way." The only problem I see in SIA is that if we stop people from asking those questions. Then we would be in big trouble. (Senior Vice President Product and Service, 2003)

## Discussion, implications and further research

Our initial question was "Why are some companies able to innovate time and again, while others cannot?" We selected SIA as a *unique* and *revelatory* case (Yin, 2014) and conducted a 30-year longitudinal study to investigate the firm's capability to be a successful serial innovator and to generate a constant stream of industry-leading innovations.

We identified three key institutional foundations for service innovation:

- innovation climate (i.e. leadership and innovative culture);
- human capital (i.e. recruitment, training and development and engagement and incentives); and
- resource configurations (i.e. structures, systems and processes).

These building blocks were the foundation for four service innovation-related dynamic capabilities of:

- 1 embracing ambidexterity;
- 2 institutionalizing learning and knowledge integration;
- 3 orchestrating collaboration; and
- 4 reinventing customer value.

### Theoretical implications

Despite the growing body of knowledge, the concept of service innovation remains relatively unexplored (Carlborg *et al.*, 2014; Salunke *et al.*, 2011). Scholars have argued that uncovering the organizational antecedents of service innovation is still one of the main challenges in the literature (Janssen *et al.*, 2016; Ostrom *et al.*, 2010). We expand the current service innovation literature in several ways.

First, we identified the significance of innovation climate, investments in human capital and resource configurations as key institutional foundational drivers of sustained service innovation in a hyper-competitive and commoditized industry (Rothkopf and Wald, 2011; Wirtz and Jerger, 2017). Our results are consistent with the dynamic capability theory, which "assigns a prominent role to the firm's strategic leadership in nurturing and building of dynamic capabilities critical to the value generation process" (Salunke *et al.*, 2011, p. 1252). Although we have not seen an integrated examination and discussion of these three foundational elements in the service innovation literature, these topics have been addressed separately in other areas of the literature. For instance, the critical connection between leadership and resource utilization may not surprise resource-based view theorists in the strategic human resource management literature. They emphasized on the critical role of human capital and the "centrality of HR issues to the understanding and development of dynamic capabilities" (Wright *et al.*, 2001, p. 713). Our research thus extends the view within the service innovation literature to institutional foundations as drivers of the dynamic capability building process (Salunke *et al.*, 2011) and provides a fuller and more integrated view on the institutional foundations required to deliver sustained service innovation.

Second, our findings related to institutional learning and knowledge integration and on orchestrating collaboration are consistent with prior cross-sectional dynamic capabilities research and confirm their relevance for long-term innovation success. In particular, we see consistent arguments for the importance of the following dynamic capabilities: sensing opportunities (Janssen *et al.*, 2016; Plattfaut *et al.*, 2012), "technology sensing" (Kindström *et al.*, 2013), organizational learning (Salunke *et al.*, 2011), knowledge sharing/integration (Srivastava and Shainesh, 2015), the importance of continuous recursive learning in improving service delivery and effectiveness (Srivastava and Shainesh, 2015) and collaboration (Agarwal and Selen, 2009; Ordanini and Parasuraman, 2011; Verma and Jayasimha, 2014).

Our finding that SIA innovations evolve from joined actions of a network of actors in a service ecosystem is also consistent with extant research (Lusch and Nambisan, 2015; Zhang *et al.*, 2015) and confirms its importance for sustained innovation. Customer engagement, in particular, has gained considerable attention among practitioners and in the academic community (Brodie *et al.*, 2011, 2016; Hollebeck *et al.*, 2014, 2016) and has been emphasized many times as a success driver of service innovation (Chen *et al.*, 2016). Interestingly, we noted that SIA had a long history of involving customers (e.g. their frequent fliers) in innovation processes. Although SIA did not use the term "customer engagement" until more recently, we see clear evidence that SIA had a customer-centric culture, was following customer needs and wants and was closely engaged with its various key customer segments.

Third, our findings suggest that ambidexterity is an important capability related to service innovation which can lead to sustained service innovation performance (Gibson and Birkinshaw, 2004; O'Reilly and Tushman, 2013). A paradox involves "contradictory yet interrelated elements that exist simultaneously and persist over time" (Smith and Lewis, 2011, p. 382). Specifically, we found that SIA managed consistently to follow "dual strategies" (Wirtz and



Zeithaml, 2017) and challenged paradoxical extremes in its approach to innovation. For example, SIA simultaneously pursued differentiation through service excellence and cost orientation, adopted a seamless combination of centralized (i.e. structured and rigorous) with distributed (i.e. open and emergent) innovation and pursued ground-breaking, dramatic innovations and incremental improvements at the same time. Our findings confirm past research that demonstrated a positive relationship between ambidexterity and innovation (O'Reilly and Tushman, 2013). However, it appears that the discussion has mainly focused on the comparison between exploration versus exploitation and less differentiation (e.g. SIA's premium positioning) versus cost leadership. Furthermore, our findings emphasize the importance of ambidexterity, which has hitherto not received much attention in the service innovation literature.

Finally, an important and to us somewhat surprising finding is that the three identified institutional foundations and four dynamic capabilities seem to be stable over time. Terminology, technology and contexts changed, whereas the basic underlying foundations and capabilities remained largely constant. SIA consistently adapted to changing conditions in the service ecosystem. For example, SIA embraced new technologies (e.g. internet, CRM systems, biometrics, mobile and RFID technology) to improve existing service processes and to engage customers more actively in the ideation and testing of new services. However, the basic blocks such as SIA's focus on building an innovation climate, human capital and supportive structures, systems and processes remained firmly in place, and the four dynamic capabilities were clearly present throughout the 30-year period studied. These findings align to the views of institutional theorists who contend that "because institutional elements (structures, actions, roles) are authorized to legitimate other elements, institutionalized aspects are simultaneously highly stable and responsible for creating new institutional elements" (Zucker, 1987, p. 446).

### Managerial implications

The literature suggests that managers in high-velocity markets face not only external pressure of competition but also the internal challenge of collapsing dynamic capabilities (Eisenhardt and Martin, 2000). Our study offers managers a roadmap to examine a pathway to sustained service innovation performance, which consists of two blocks. First, managers need to focus on institutional foundations, beginning with leadership to build an innovation climate. This goes in hand with "aligning skills, motives, and so forth with organizational systems, structures, and processes" (Wright et al., 2001, p. 710) to achieve organizational capabilities (Hamel and Prahalad, 1994; Wright et al., 2001). Oftentimes, organizations tend to focus their innovation efforts on short-term practices and episodic innovations. To achieve sustained service innovation performance, firms need to have visionary leaders that inspire employees and cultivate a service-centric culture.

Second, our framework offers managers a fuller and more integrated picture than past cross-sectional studies on the dynamic capabilities required to sustain service innovation. There are four categories of dynamic innovation capabilities managers should examine and build in their own organization. Specifically, managers should:

- evaluate their current strategic orientations and embrace organizational ambidexterity;
- establish a framework for developing and managing knowledge and enhance the learning processes in the organization;
- invest in collaborative ideation processes involving all relevant stakeholders internally (especially frontline employees) and externally (including customers and business partners); and
- foster a culture of discontent with current services and solutions to constantly reinvent the customer value offered in ongoing incremental innovation and periodic breakthrough new services.

SIA had a long tradition of service excellence and organizational ambidexterity. Thus, managers cannot expect to swiftly change their organizations overnight to become serial innovators. As research shows, "firms are to some degree stuck with what they have and may have to live with what they lack" (Teece et al., 1997, p. 514). Nevertheless, we hope that our research helps managers to understand a fuller and more integrated view of how to move their organizations toward becoming sustained innovation leaders in their respective industries.

### Limitations and future research

This study has several limitations that offer avenues for further research. First, qualitative data were collected from a single organization. To generalize our findings and validate the proposed framework, a necessary next step is to conduct in-depth case analyses of other leading serial innovators, followed by a quantitative study. Second, our results highlighted that SIA is an ambidextrous organization. More research is needed to investigate how different types of organizational ambidexterity (i.e. temporal, structural and contextual) at the different organizational levels (i.e. organization, group and individual) influence sustained service innovation. Third, we developed a framework that integrates institutional foundations and dynamic capabilities as drivers of sustained service innovation. Further research is needed to study the interrelationships between innovation climate, human capital and resource configurations in the development of innovation-related dynamic capabilities.

In conclusion, this study offers a broadened view of sustained service innovation and identified three institutional foundations and four dynamic capabilities that allowed SIA to be the innovation leader in its industry over a prolonged period of time. The proposed framework provides a fuller and more integrated view than what is available in the extant literature on what it takes for an organization to deliver sustained service innovation. We hope that the emergent framework will encourage future research on this important topic.

### References

- Agarwal, R. and Selen, W. (2009), "Dynamic capability building in service value networks for achieving service innovation", *Decision Sciences*, Vol. 40 No. 3, pp. 431–475.
- Ambrosini, V., Bowman, C. and Collier, N. (2009), "Dynamic capabilities: an exploration of how firms renew their resource", *British Journal of Management*, Vol. 20 No. S1, pp. S9–S24.

- Birkinshaw, J., Zimmermann, A. and Raisch, S. (2016), "How do firms adapt to discontinuous change?", *California Management Review*, Vol. 58 No. 4, pp. 36-58.
- Boyatzis, R.E. (1998), *Transforming Qualitative Information*, Sage, Cleveland.
- Braun, V. and Clarke, V. (2006), "Using thematic analysis in psychology", *Qualitative Research in Psychology*, Vol. 3 No. 2, pp. 77-101.
- Brodie, R.J., Hollebeck, L.D. and Conduit, J. (2016), *Customer Engagement: Contemporary Issues and Challenges*, Routledge, London.
- Brodie, R.J., Hollebeck, L.D., Jurić, B. and Ilić, A. (2011), "Customer engagement: conceptual domain, fundamental propositions, and implications for research", *Journal of Service Research*, Vol. 14 No. 3, pp. 252-271.
- Carlborg, P., Kindström, D. and Kowalkowski, C. (2014), "The evolution of service innovation research: a critical review and synthesis", *The Service Industries Journal*, Vol. 34 No. 5, pp. 373-398.
- Chen, J.S., Weng, H.H. and Huang, C.L. (2016), "A multilevel analysis of customer engagement, its antecedents, and the effects on service innovation", *Total Quality Management & Business Excellence*, pp. 1-19.
- Chen, C.-J. (2009), "Technology commercialization, incubator and venture capital, and new venture performance", *Journal of Business Research*, Vol. 62 No. 1, pp. 93-103.
- Collis, D.J. (1994), "Research note: how valuable are organizational capabilities", *Strategic Management Journal*, Vol. 15 No. 1, pp. 143-152.
- Corradini, C. (2013), "Serial and persistent innovation in UK small companies", Ph.D. Thesis, University of Nottingham, Nottingham.
- CSISG. (2016), *Customer Satisfaction Index of Singapore: Scores and Ranking*, available at: <https://ises.smu.edu.sg/csigs-release-schedule> (accessed 18 March 2017).
- Creswell, J.W. (2009), *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches*, 3rd ed., Sage, Thousand Oaks, CA.
- Damanpour, F., Walker, R.M. and Avellaneda, C.N. (2009), "Combinative effects of innovation types and organizational performance: a longitudinal study of service organizations", *Journal of Management Studies*, Vol. 46 No. 4, pp. 650-675.
- Den Hertog, P., van der Aa, W. and de Jong, M.W. (2010), "Capabilities for managing service innovation: towards a conceptual framework", *Journal of Service Management*, Vol. 21 No. 4, pp. 490-514.
- Deshpande, R. and Hogan, H. (2003), *Singapore Airlines: Customer Service Innovation*, Harvard Business School Publishing, Boston, MA.
- Deshpande, R. and Lau, D.H. (2016), *Singapore Airlines: Premium Goes Multi-Brand*, Harvard Business School Publishing, Boston, MA.
- Djellal, F., Gallouj, F. and Miles, I. (2013), "Two decades of research on innovation in services: which place for public services?", *Structural Change & Economic Dynamics*, Vol. 27, pp. 98-117.
- Dougherty, D. and Hardy, C. (1996), "Sustained product innovation in large, mature organizations: overcoming innovation-to-organization problems", *Academy of Management Journal*, Vol. 39 No. 5, pp. 1120-1153.
- Eisenhardt, K.M. (1989), "Building theories from case study research", *Academy of Management Review*, Vol. 14 No. 4, pp. 532-550.
- Eisenhardt, K.M. and Martin, J.A. (2000), "Dynamic capabilities: what are they?", *Strategic Management Journal*, Vol. 21 No. 10-11, pp. 1105-1121.
- Fischer, T., Gebauer, H., Gregory, M., Ren, G. and Fleisch, E. (2010), "Exploitation or exploration in service business development: insights from a dynamic capabilities perspective", *Journal of Service Management*, Vol. 21 No. 5, pp. 591-624.
- Galbreath, J. (2005), "Which resources matter the most to firm success? An exploratory study of resource-based theory", *Technovation*, Vol. 25 No. 9, pp. 979-987.
- Ghauri, P. (2004), "Designing and conducting case studies in international business research", in Piekkari, R. and Welch, C. (Eds), *Handbook of Qualitative Research Methods for International Business*, Chapter 5, Edward Elgar Publishing, Northampton.
- Gibson, C.B. and Birkinshaw, J. (2004), "The antecedents, consequences, and mediating role of organizational ambidexterity", *Academy of Management Journal*, Vol. 47 No. 2, pp. 209-226.
- Goh, A.L. (2005), "Fostering innovation through knowledge-centered principles: a case analysis of Singapore airlines", *International Journal of Knowledge Management (Management)*, Vol. 1 No. 4, pp. 73-90.
- Golden, B.R. (1992), "The past is the past – or is it? The use of retrospective accounts as indicators of past strategy", *Academy of Management Journal*, Vol. 35 No. 4, pp. 848-860.
- Grawe, S.J., Haozhe, C. and Daugherty, P.J. (2009), "The relationship between strategic orientation, service innovation, and performance", *International Journal of Physical Distribution & Logistics Management*, Vol. 39 No. 4, pp. 282-300.
- Gummesson, E. (2017), *Case Theory in Business and Management. Reinventing Case Study Research*, Sage, Thousand Oaks, CA.
- Hamel, G. (2006), "The why, what, and how of management innovation", *Harvard Business Review*, Vol. 84 No. 2, pp. 72-84.
- Hamel, G. and Prahalad, C.K. (1994), "Competing for the future", *Harvard Business Review*, Vol. 72 No. 4, pp. 122-129.
- Haned, N., Mothe, C. and Nguyen, U. (2014), "Firm persistence in technological innovation: the relevance of organizational innovation", *Economics of Innovation and New Technology*, Vol. 23 Nos 5/6, pp. 490-516.
- Heracleous, L. and Wirtz, J. (2010), "Singapore airlines' balancing act – Asia's premier carrier successfully executes a dual strategy: it offers world-class service and is a cost leader", *Harvard Business Review*, Vol. 88 Nos 7/8, pp. 145-149.
- Heracleous, L., Wirtz, J. and Pangarkar, N. (2009), *Flying High in a Competitive Industry: Secrets of the World's Leading Airline*, McGraw-Hill, Singapore.
- Hogan, S.J., Soutar, G.N., McColl-Kennedy, J.R. and Sweeney, J.C. (2011), "Reconceptualizing professional service firm innovation capability: scale development", *Industrial Marketing Management*, Vol. 40 No. 8, pp. 1264-1273.
- Hollebeck, L., Glynn, M.S. and Brodie, R.J. (2014), "Consumer Brand engagement in social media: conceptualization, scale development and validation", *Journal of Interactive Marketing*, Vol. 28 No. 2, pp. 149-165.

- Hollebeek, L., Srivastava, R. and Chen, T. (2016), "S-D logic-informed customer engagement: integrative framework, revised fundamental propositions, and application to CRM", *Journal of the Academy of Marketing Science*, pp. 1-25.
- Janssen, M.J., Castaldi, C. and Alexiev, A. (2016), "Dynamic capabilities for service innovation: conceptualization and measurement", *R&D Management*, Vol. 46 No. 4, pp. 797-811.
- Kim, M., Song, J. and Triche, J. (2015), "Toward an integrated framework for innovation in service: a resource-based view and dynamic capabilities approach", *Information Systems Frontiers*, Vol. 17 No. 3, pp. 533-546.
- Kindström, D., Kowalkowski, C. and Sandberg, E. (2013), "Enabling service innovation: a dynamic capabilities approach", *Journal of Business Research*, Vol. 66 No. 8, pp. 1063-1073.
- Lakhani, K.R. and Panetta, J.A. (2007), "The principles of distributed innovation", *Innovations*, Vol. 2 No. 3, pp. 97-112.
- Le Bas, C. and Scellato, G. (2014), "Firm innovation persistence: a fresh look at the frameworks of analysis", *Economics of Innovation and New Technology*, Vol. 23 Nos 5/6, pp. 423-446.
- Lhuillery, S. (2014), "Marketing and persistent innovation success", *Economics of Innovation and New Technology*, Vol. 23 Nos 5/6, pp. 517-543.
- Lusch, R.F. and Nambisan, S. (2015), "Service innovation: a service-dominant logic perspective", *MIS Quarterly*, Vol. 39 No. 1, pp. 155-176.
- Matvejeva, A. (2014), "Determinants of persistence in innovation: evidence from the case study of the 'eye microsurgery' complex", *Economics of Innovation and New Technology*, Vol. 23 Nos 5/6, pp. 544-562.
- Ngo, L.V. and O'Cass, A. (2009), "Creating value offerings via operant resource-based capabilities", *Industrial Marketing Management*, Vol. 38 No. 1, pp. 45-59.
- Nijssen, E.J., Hillebrand, B., Vermeulen, P.A. and Kemp, R.G. (2006), "Exploring product and service innovation similarities and differences", *International Journal of Research in Marketing*, Vol. 23 No. 3, pp. 241-251.
- O'Reilly, C.A., III and Tushman, M.L. (2013), "Organizational ambidexterity: past, present, and future", *The Academy of Management Perspectives*, Vol. 27 No. 4, pp. 324-338.
- Ordanini, A. and Parasuraman, A. (2011), "Service innovation viewed through a service-dominant logic lens: a conceptual framework and empirical analysis", *Journal of Service Research*, Vol. 14 No. 1, pp. 3-23.
- Ostrom, A.L., Bitner, M.J., Brown, S.W., Burkhard, K.A., Goul, M., Smith-Daniels, V., Demirkan, H. and Rabinovich, E. (2010), "Moving forward and making a difference: research priorities for the science of service", *Journal of Service Research*, Vol. 13 No. 1, pp. 4-36.
- Parida, V., Roenneberg Sjoedin, D., Lenka, S. and Wincent, J. (2015), "Developing global service innovation capabilities: how global manufacturers address the challenges of market heterogeneity", *Research-Technology Management*, Vol. 58 No. 5, pp. 35-44.
- Plattfaut, R., Niehaves, B. and Becker, J. (2012), "Capabilities for service innovation: a qualitative case study in the consulting industry", *Proceedings of Pacific Asia Conference on Information Systems (PACIS)*, Paper 58.
- Rothkopf, M. and Wald, A. (2011), "Innovation in commoditized services: a study in the passenger airline industry", *International Journal of Innovation Management*, Vol. 15 No. 4, pp. 731-753.
- Salunke, S., Weerawardena, J. and McColl-Kennedy, J.R. (2011), "Towards a model of dynamic capabilities in innovation-based competitive strategy: insights from project-oriented service firms", *Industrial Marketing Management*, Vol. 40 No. 8, pp. 1251-1263.
- Silver, C. and Lewins, A. (2014), *Using Software in Qualitative Research, A Step-by-Step Guide*, 2nd ed., Sage, London.
- Singapore Airlines. (2017), *Our Awards*, available at: [www.singaporeair.com/en\\_UK/sg/flying-withus/our-story/awards/](http://www.singaporeair.com/en_UK/sg/flying-withus/our-story/awards/) (accessed 20 November 2017).
- Smith, W.K. and Lewis, M.W. (2011), "Toward a theory of paradox: a dynamic equilibrium model of organizing", *Academy of Management Review*, Vol. 36 No. 2, pp. 381-403.
- Snyder, H., Witell, L., Gustafsson, A., Fombelle, P. and Kristensson, P. (2016), "Identifying categories of service innovation: a review and synthesis of the literature", *Journal of Business Research*, Vol. 69 No. 7, pp. 2401-2408.
- Srivastava, S.C. and Shainesh, G. (2015), "Bridging the service divide through digitally enabled service innovations: evidence from Indian healthcare service providers", *MIS Quarterly*, Vol. 39 No. 1, pp. 245-267.
- Stavros, C. and Westberg, K. (2009), "Using triangulation and multiple case studies to advance relationship marketing theory", *Qualitative Market Research: An International Journal*, Vol. 12 No. 3, pp. 307-320.
- Taylor, S.J. and Bogdan, R. (1984), *Introduction to Qualitative Research Methods: The Search for Meanings*, 2nd ed., Wiley, New York, NY.
- Teece, D.J. (2007), "Explicating dynamic capabilities: the nature and microfoundations of (sustainable) enterprise performance", *Strategic Management Journal*, Vol. 28 No. 13, pp. 1319-1350.
- Teece, D.J., Pisano, G. and Shuen, A. (1997), "Dynamic capabilities and strategic management", *Strategic Management Journal*, Vol. 18 No. 7, pp. 509-533.
- Thomas, J. and Harden, A. (2007), "Methods for the thematic synthesis of qualitative research in systematic reviews", ESRC National Centre for Research Methods, NCRM Working Paper Series, 10/07, London.
- van de Ven, A.H. and Huber, G.P. (1990), "Longitudinal field research methods for studying processes of organizational change", *Organization Science*, Vol. 1 No. 3, pp. 213-219.
- Verma, R. and Jayasimha, K. (2014), "Service delivery innovation architecture: an empirical study of antecedents and outcomes", *IIMB Management Review*, Vol. 26 No. 2, pp. 105-121.
- von Hippel, E. (2005), *Democratizing Innovation*, MIT Press, Cambridge, MA.
- Weerawardena, J. and Mavondo, F.T. (2011), "Capabilities, innovation and competitive advantage", *Industrial Marketing Management*, Vol. 40 No. 8, pp. 1220-1223.
- Winter, S. (2003), "Understanding dynamic capabilities", *Strategic Management Journal*, Vol. 24 No. 10, pp. 991-995.
- Wirtz, J. and Jerger, C. (2017), "Managing service employees: literature review, expert opinions, and research directions", *Service Industries Journal*, Vol. 36 Nos 15/16, pp. 757-788.

- Wirtz, J. and Johnston, R. (2003), "Singapore airlines: what it takes to sustain service excellence: a senior management perspective", *Managing Service Quality: An International Journal*, Vol. 13 No. 1, pp. 10-19.
- Wirtz, J. and Zeithaml, V. (2017), "Cost-effective service excellence", *Journal of the Academy of Marketing Science*, pp. 1-22, doi: [10.1007/s11747-017-0560-7](https://doi.org/10.1007/s11747-017-0560-7).
- Wirtz, J., Heracleous, L. and Menkhoff, T. (2007), "Value creation through strategic knowledge management: the case of Singapore airlines", *Journal of Asian Business*, Vol. 23 No. 1, pp. 249-264.
- Wirtz, J., Heracleous, L. and Pangarkar, N. (2008), "Managing human resources for service excellence and cost effectiveness at Singapore airlines", *Managing Service Quality: An International Journal*, Vol. 18 No. 1, pp. 4-19.
- Witell, L., Snyder, H., Gustafsson, A., Fombelle, P. and Kristensson, P. (2016), "Defining service innovation: a review and synthesis", *Journal of Business Research*, Vol. 69 No. 8, pp. 2863-2872.
- Wright, P.M., Dunford, B.B. and Snell, S.A. (2001), "Human resources and the resource based view of the firm", *Journal of Management*, Vol. 27 No. 6, pp. 701-721.
- Wyckoff, D.D., Hart, C.W.L. and Lytle, L.N. (1989), *Singapore Airlines*, Harvard Business School, Boston, MA.
- Yin, R. (2014), *Case Study Research*, 5th ed., Sage, Los Angeles, CA.
- Zhang, T., Kandampully, J. and Bilgihan, A. (2015), "Motivations for customer engagement in online co-innovation communities (OCCs): a conceptual framework", *Journal of Hospitality and Tourism Technology*, Vol. 6 No. 3, pp. 311-328.
- Zucker, L.G. (1987), "Institutional theories of organization", *Annual Review of Sociology*, Vol. 13 No. 1, pp. 443-464.

## Further reading

- Baldwin, C.Y. (2012), "Organization design for distributed innovation", Working Paper, 12-100, May 4, Harvard Business School.
- Evanschitzky, H., Eisend, M., Calantone, R.J. and Jiang, Y. (2012), "Success factors of product innovation: an updated meta-analysis", *Journal of Product Innovation Management*, Vol. 29 No. S1, pp. 21-37.
- Geerts, A., Blindenbach-Driessen, F. and Gemmel, P. (2010), *Ambidextrous Innovation Behaviour in Service Firms*, Vlerick Leuven Gent Management School, Ghent.
- Heracleous, L. and Wirtz, J. (2014), "Singapore airlines: achieving sustainable advantage through mastering paradox", *Journal of Applied Behavioral Science*, Vol. 50 No. 2, pp. 150-170.
- Heracleous, L., Wirtz, J. and Johnston, R. (2005), "Kung-Fu service development at Singapore airlines", *Business Strategy Review*, Vol. 16 No. 4, pp. 26-31.

- Perks, H. and Roberts, D. (2013), "A review of longitudinal research in the product innovation field, with discussion of utility and conduct of sequence analysis", *Journal of Product Innovation Management*, Vol. 30 No. 6, pp. 1099-1111.
- Teece, D., Peteraf, M. and Leih, S. (2016), "Dynamic capabilities and organizational agility: risk, uncertainty, and strategy in the innovation economy", *California Management Review*, Vol. 58 No. 4, pp. 13-35.
- Wirtz, J. and Heracleous, L. (2005), "Biometrics meets services", *Harvard Business Review*, Vol. 83 No. 2, p. 48.

## About the authors

**Dr Sven Tuzovic** is a Senior Lecturer in Marketing at QUT School of Business. Previously, he was tenured Associate Professor at Pacific Lutheran University and Visiting Professor at Griffith University, Murray State University and the University of New Orleans. His research focuses on services marketing, customer loyalty and wearable technology. Dr Tuzovic has published papers in *Journal of Retailing and Consumer Services*, *Journal of Services Marketing*, *Journal of Service Management* and *Health Marketing Quarterly* and in several international conference proceedings. He has won two Best Paper Awards and a Faculty Research Award at Pacific Lutheran University. Dr Tuzovic is currently Associate Editor of the *Journal of Services Marketing*. Sven Tuzovic is the corresponding author and can be contacted at: [sven.tuzovic@qut.edu.au](mailto:sven.tuzovic@qut.edu.au)

**Jochen Wirtz** is Vice-Dean Graduate Studies, Professor of Marketing at the NUS Business School, National University of Singapore. Dr Wirtz has published over 100 academic articles, including five features in Harvard Business Review. His over ten books include *Services Marketing: People, Technology, Strategy* (Prentice Hall, eighth edition, 2017), *Essentials of Services Marketing* (Prentice Hall, third edition, 2018), both co-authored with Christopher Lovelock, and *Winning in Service Markets* (World Scientific, 2017). For free downloads of his recent work and selected book chapters, visit [www.JochenWirtz.com](http://www.JochenWirtz.com).

**Loizos Heracleous** is a Professor of Strategy at Warwick Business School. He has authored six books (with three in preparation) and over 65 articles. His work has been published in leading journals, including the *Academy of Management Journal*, *Academy of Management Review*, *MIS Quarterly*, *Strategic Management Journal*, *Journal of Management Studies*, *Organization Studies*, *Human Relations*, *Harvard Business Review* and *MIT Sloan Management Review*. Loizos serves on the editorial boards of top management journals, including the *Academy of Management Journal*, the *Journal of Management Studies* and *Human Relations*. He has served on the board of the *Academy of Management Review* and was a senior editor of *Organization Studies*. More information about his work can be found on [www.heracleous.org](http://www.heracleous.org).

For instructions on how to order reprints of this article, please visit our website:

[www.emeraldgroupublishing.com/licensing/reprints.htm](http://www.emeraldgroupublishing.com/licensing/reprints.htm)

Or contact us for further details: [permissions@emeraldinsight.com](mailto:permissions@emeraldinsight.com)