

# Organizational Factors Driving Technology Non-Adoption in Australian Tour Operators<sup>1</sup>

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## Abstract

Challenging the simplistic way in which organizational technology adoption has been conceptualized and researched, this paper defines various types of adoption and non-adoption and empirically investigates whether organizational factors delineate among these groups using a sample of Australian tourism operators. The findings first show that the various types actually exist and further indicate that certain forms of adoption are indeed more prominent among specific types of organizations described in terms of core business, organizational structure and organizational environment.

**Keywords:** technology adoption; non-adoption; leapfrogging; proxy-adoption; tourism operator; organizational factors.

## 1 Introduction

The importance of online technology and innovation has been discussed extensively in tourism (Werthner & Klein, 1999). New ICTs provide tourism businesses the means to communicate globally and in real time, create new services, and explore new avenues for distribution (Buhalis & Law, 2008); however, many operators are maintaining traditional business practices instead of adopting new ICTs (Gretzel & Fesenmaier, 2001). Innovation defectiveness has been conceptualized as a structural problem in the tourism industry (Hjalager, 2002) but not much is known specifically about ICT non-adoption in tourism at the organizational level.

It has been noted in the literature that “organizations that do not innovate will flirt with extinction” (Smart & Desouza, 2007, p. 25) but it seems that some organizations do remain viable even without the use of online innovations. Most research on technology adoption and innovation is based on Rogers’ (1995) Diffusion of Innovation theory. While it provides insights on factors that foster technology adoption and diffusion of innovations in industries it does not inform why some organizations deliberately decide to not adopt a technology: it treats all adoption as equal. Also, it looks at one innovation in isolation, ignoring potential effects of technology lock-in (Witt, 1997) and the opportunities to leapfrog (Goldenberg & Oreg, 2007), i.e. skipping one technology and adopting a more advanced innovation, as well as the opportunity to use the services of adopters without having to adopt oneself. This paper aims to look at both technology adoption and non-adoption from

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this new perspective and to investigate whether structural factors can be found to delineate the various adopter groups.

## **2 Literature Review**

### **2.1 Technology Adoption and Non-Adoption**

Many organizations find it challenging to keep up with the evolution of technology (Gretzel, Yuan, & Fesenmaier, 2000). This can cause some organizations to decide not to implement a specific technology and to remain non-adopters despite potential benefits offered by the technology (Weber & Kauffman, 2011). In making technology choices, some organizations choose to leapfrog. Leapfroggers are classified as those who skip over some of the initial technology innovations and go immediately to the next generation of innovation (Hobday, 1995; Scaglione, Ismail, Trabichet, & Murphy, 2010). Leap-frogging can provide businesses with competitive advantage by not being hampered by previous infrastructure (Gallagher, 2006). However, sometimes original investments into technology innovation are so great that organizations' fear of additional or switching costs precludes adoption (Shapiro & Varian, 1999). This leads to technology lock-in. Those locked in, or stallers, may not adopt new innovation for many reasons including reluctance to discard something useful, delaying for better cost, high initial cost of the original system, and steps to upgrade being too difficult (Greenstein, 1997). Finally the service dominant logic in system design and cloud computing allow organizations to reap the benefits of certain technologies without their necessary adopting them. Such proxy-adopters take advantage of services made available by third parties for a fee or on a commission basis.

### **2.2 Organizational Factors Influencing Adoption/Non-Adoption**

Zhu, Kraemer and Xu (2002) in their conceptual model of organizational e-business adoption stress the importance of technological, organizational and environmental contexts in shaping adoption intent with firm size being featured prominently in their model. Tourism consists of diverse businesses ranging from large to small and micro-sized (less than 5 employees). For many firms, strategic technology decisions are difficult due to possible financial impacts and other factors (Nair, 1997). While any organizations may struggle with technological change, smaller businesses seem to have most difficulty (Gretzel, Yuan & Fesenmaier, 2000). Bigger businesses may have resource advantages but many technologies, including social media and cloud services, do not require an extensive cash output for implementation, affording joining opportunities for small businesses. Therefore, it is unclear if and how size influences e-business adoption. Further, the ownership structure could be a factor in that for franchisees and business chains, many technology adoption decisions are taken at head office level. Various sectors within tourism exhibit different technology adoption patterns. For instance, many accommodation providers employ self-service technologies (Fisher & Beatson, 2002). Within the restaurant and dining sector, clear advantages to having IT innovations have been discussed as well (Ansel & Dyer, 1999). Therefore it appears that certain technology adoption/non-adoption types might be more prominent in particular industry sectors. Another issue businesses encounter with technology innovations is the digital divide between rural and urban

areas. In rural areas, even basic Internet services may be difficult or non-existent (Gretzel, Jamal, Lee & Go, 2009). With today's more technology savvy traveller, it is increasingly important for remote tourism destinations to be able to communicate with potential travellers through technology (Minghetti & Buhalis, 2010), yet the lack of infrastructure and adoption not being observable in other organizations might hinder adoption.

### **3 Methodology**

Empirical data was collected as part of the 2013 benchmark survey of tourism operators in Australia examining uptake of digital technologies for distribution of tourism products and services. The survey was conducted across five selected industry sectors (Accommodation, Dining, Attractions, Tours, Hire/Rentals) in May and June, 2013 through Computer Assisted Telephone Interviewing (CATI) and an online survey of randomly selected Australian Tourism Data Warehouse members. There were 1200 respondents to the CATI survey and 972 responses to the online survey. Respondents were classified into categories depending on their technology adoption: Non-adopters did not have a webpage or a social media presence, proxy-adopters did not have a webpage or social media presence but had their information listed through a third party website; Adopters had a webpage and a social media presence; Leapfroggers did not have a webpage but had a social media presence; and, Stallers had a webpage but not a social media presence.

We identified five organizational factors to examine in relation to technology adoption or non-adoption; (1) size of the organization, (2) location of the organization, (3) type of business (stand alone, franchise, part of a group/chain, government agency, and not-for-profit agency), (4) core business defined by industry sector, and, because the focus of the survey was on technology for online distribution, (5) whether the organization took bookings/reservations for their services. Cross-tabulations and chi-square tests were used to investigate whether the five adoption/non-adoption groups significantly differed across organizational variables.

### **4 Findings**

Of the 2172 returned surveys, 2161 responses were usable and were classified into the five categories of adopter (61.9%), leapfrogger (6.2%), staller (20.8%), proxy-adopter (4.2%), and non-adopter (6.5%). The Chi-Square analyses indicate that significant differences exist among the groups in terms of their organizational characteristics (Table 1). With respect to organizational core business, the findings indicate that stallers are more likely accommodation businesses. Leapfroggers are more likely dining establishments, Proxy-adopters are more likely attractions, Adopters are more likely attractions and tour companies, and Non-adopters are more likely hire companies than the other adoption types. Adopters, followed by Stallers and Proxy-Adopters are more likely to take bookings, suggesting that the need to handle reservations online fostered Web 1.0 adoption but not Web 2.0 uptake.

**Table 1.** Organizational Factors by Adopter/Non-Adopter Group

	<b>Non-adopter</b>	<b>Proxy-Adopter</b>	<b>Staller</b>	<b>Leap-frogger</b>	<b>Adopter</b>	<b>Chi Square</b>
<b>Core business</b>						
Industry sector						
Accommodation	17.6	47.3	61.3	21.6	43.0	273.8**
Dining	64.1	33.0	16.0	67.2	25.6	
Attractions	4.2	13.2	7.8	7.5	13.0	
Tours	7.7	4.4	10.7	3.0	14.2	
Hire/Rentals	6.3	2.2	4.2	0.7	4.2	
Takes bookings	70.2	84.6	94.9	83.6	95.2	140.4**
<b>Organizational Structure</b>						
Organization Type						
Stand-alone	89.4	77.8	79.6	81.5	79.4	24.4*
Franchise	2.8	2.2	2.0	3.7	3.6	
Chain/Group	5.6	10.0	10.4	8.1	13.4	
Other	2.1	10.0	8.0	6.7	8.0	
Size of Organization						
< 5 people	56.8	61.1	59.3	43.3	44.2	96.9**
5 to 9	27.3	15.6	18.0	23.9	15.4	
10 to 19	10.1	14.4	11.9	17.9	16.6	
20 to 199	5.0	5.6	7.9	10.4	15.6	
200 or more	0.7	3.3	2.9	4.5	8.2	
<b>Organizational Environment</b>						
Urban	37.4	25.3	32.4	26.1	39.2	21.3**
Semi-urban	51.8	58.2	54.7	55.2	48.5	
Rural	10.8	16.5	12.9	18.7	12.3	

Note: \* = significant at the .05 level; \*\* = significant at .01 level

As far as organizational structure is concerned, Non-adopters are more likely stand-alone businesses, Leapfroggers franchisees, and Adopters franchisees, group/chain businesses, and other organisations. Stallers are more likely to include other types of organisations. Adopters are clearly bigger than organisations in the other categories. Leapfrogging is most likely to occur at the upper end of the small business category. Adopters are more likely to operate in urban environments but so are Non-adopters. Thus, the results show that urban environment per se does not guarantee a more sophisticated adoption level. Leapfroggers are more likely to be rural. This seems to indicate that Web 2.0 does provide opportunities to overcome the lack of infrastructure that might have halted Web 1.0 adoption in rural areas.

## 5 Conclusion and Implications

The findings provide empirical support for the existence of the five adoption/non-adoption groups and indicate that certain types of organizations are more likely to fall within a particular adoption/non-adoption type. The paper calls for future research that explores these adoption groups more deeply and identifies additional influence factors. From a practical point of view it suggests that government policies to foster innovation in tourism have to carefully consider various types of innovation as well as deliberate non-adoption. It also shows that technology providers offering proxy-adoption services need to be aware of factors that increase an organization's

likelihood to take advantage of such offerings. Further, policy measures to overcome innovation deficiencies have to be targeted at the sector level rather than the overall industry level in order to accommodate specific organizational structures and needs.

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