



Heriot-Watt University
Research Gateway

ICT as a strategic enhancer in small firms: a study of New Zealand and Scotland

Citation for published version:

Galloway, L, Sanders, JW & Benseman, J 2016, 'ICT as a strategic enhancer in small firms: a study of New Zealand and Scotland', *Strategic Change*, vol. 25, no. 6, pp. 647-657. <https://doi.org/10.1002/jsc.2099>

Digital Object Identifier (DOI):

[10.1002/jsc.2099](https://doi.org/10.1002/jsc.2099)

Link:

[Link to publication record in Heriot-Watt Research Portal](#)

Document Version:

Peer reviewed version

Published In:

Strategic Change

Publisher Rights Statement:

This is the peer reviewed version of the following article: Galloway, L., Sanders, J. and Bensemann, J. (2016), ICT as a Strategic Enhancer in Small Firms: A Study of New Zealand and Scotland . *Strategic Change*, 25: 647–657, which has been published in final form at <http://onlinelibrary.wiley.com/doi/10.1002/jsc.2099/abstract;jsessionid=20C6D27D405D45E946C50CC020879B39.f04t02>. This article may be used for non-commercial purposes in accordance with Wiley Terms and Conditions for Self-Archiving.

General rights

Copyright for the publications made accessible via Heriot-Watt Research Portal is retained by the author(s) and / or other copyright owners and it is a condition of accessing these publications that users recognise and abide by the legal requirements associated with these rights.

Take down policy

Heriot-Watt University has made every reasonable effort to ensure that the content in Heriot-Watt Research Portal complies with UK legislation. If you believe that the public display of this file breaches copyright please contact open.access@hw.ac.uk providing details, and we will remove access to the work immediately and investigate your claim.

ICT as a Strategic Enhancer in Small Firms: A study of New Zealand and Scotland¹

Laura Galloway and John Sanders, Heriot-Watt University, Edinburgh, Scotland
Jo Benseman, Massey University, Palmerston North, New Zealand

*corresponding author: l.galloway@hw.ac.uk, 0131 451 8286

ICT use in small firms in New Zealand and Scotland is strategic but not necessarily associated with growth via external markets.

Key points

Amongst the sample of firms, all of which are internet-participants, no variation in sophistication or strategic use of ICT is observed between small and very small (fewer than 5 employees) firms.

New Zealand small firms exhibit more sophisticated use of ICT than Scottish small firms, and this is linked to different norms and expectations amongst users in each country rather than differences in growth or development orientation between the two countries.

Further empirical and theoretical work on strategy and small firms is recommended, particularly since there is some suggestion from this study that small firms' ICT strategies are reactive, emergent and not necessarily associated with growth.

Introduction

Many studies have advocated the theoretical benefits to a firm of adopting technologies, and particularly Internet technologies. These include improved efficiency, access to supply chains, access to extended markets, and broadly infer improvements to competitiveness (eg., Lawson et al. 2003; Haugh and Robson, 2005; Bharadwaj and Soni, 2007). This is highly attractive to small firms (ie. firms with fewer than 50 employees) in that the Internet environment represents a more level playing field amongst different firm types, and for small firms and new firms, an opportunity to compete with larger and more established organisations. On this basis, much of the small firms literature in the last decade or so has focused on exploring the motivating features inherent in the potentials of ICT; the reasons why small business owners might want to adopt Internet technologies, and investigating what they anticipate will be the returns (eg., Galloway, et al. 2004). To date though there has been little investigation of the actual outcomes of ICT engagement and use. To make some contribution to this gap, the current paper reports a study of the outcomes of the adoption of ICT for a sample of 302 small firms in New Zealand and Scotland. With reference to recent theorising on levels of ICT absorption in firms, from basic to sophisticated use, the paper also explores how developed (or not) small firms' ICT engagement is. In addition, it explores the extent to which ICT adoption and use has been the consequence of strategic objectives or orientation in the sampled firms, and how ICT-related strategic objectives are approached.

The paper is constructed as follows. First, a description of the contexts of this research, New Zealand and Scotland, is given. A review of the literature on small firms, ICT use and strategic orientation follows, concluding with hypotheses generated in response. Following an explanation of the methodology employed to test these hypotheses, results are presented. The paper proceeds with a discussion of the implications of the findings, including their contribution to practice and knowledge. Recommendations for further research are given in the concluding remarks.

¹ JEL Codes: O, R

New Zealand and Scotland as a research context

Scotland and New Zealand were identified as interesting locations to study as they are broadly similar in terms of population, economic infrastructure and opportunity for small firms, but different – and remote – from each other sufficient for inspection that might compare and corroborate or contrast business experiences of ICT. Both New Zealand and Scotland have relatively open economies and the exporting of goods and services contributes significantly to their respective GDPs. They are also both small, geographically peripheral countries, culturally similar in many respects and are often eclipsed by larger neighbours, i.e. Australia and England, but these also serve as substantial markets. In Europe, small economies are among the most prosperous, but New Zealand has the further challenge of geographical remoteness. While Scotland is on the periphery of Europe and has a similar population to New Zealand, a 1200 kilometre radius from Edinburgh covers a market of close to 175 million compared with 4.5 million people for a similar distance around Wellington (Rowe 2005). New Zealand's catchment remains largely unchanged when the radius is expanded to 2200 kilometres; for Scotland it grows to over 300 million.

The SME sectors in New Zealand and Scotland are categorised differently in terms of numbers of employees. Despite this, as in most modern market economies, the vast majority of private enterprises in each are broadly definable as 'small firms'. To illustrate, according to the Small Business Advisory Group (2012) 97 percent of private businesses in New Zealand employ fewer than 20 people, while the Scottish Government (2013) identify that 98 percent of firms in Scotland employ fewer than 50 people. Internet use amongst firms is also reasonably comparable between the two countries. According to APS Group (2011), 95 percent of Scottish firms with between 10 and 250 employees access the Internet. New Zealand Government (2008) finds similar, with 97 percent of firms with fewer than 100 employees online.

ICT, small firms and very small firms

To date there has been some inspection of ICT adoption in small firms generally, but little focus on the very small firms and sole traders that make up the numerical majority of the sector. There is some evidence that micro enterprises and sole traders lag behind other small firms in terms of Internet technology use; APS Group (2012) note that the Internet participation rate drops to 72 percent amongst enterprises with fewer than ten employees in Scotland (compared to 95 percent for those with ten or more). Beyond this lower rate, little is known about very small firms' relationship with ICT. Liberman-Yaconi et al. (2010) identify this as a weakness in our understanding and limits the impact research might have on developing recommendations for supporting the majority of firms as they adopt and use ICT. It is therefore incumbent on the research community to provide some knowledge about this part of the small firms sector in terms of potential challenges and opportunities specific to it. Certainly it is reasonable to assume that any lower rate of adoption of ICTs in very small firms may be associated with a lack of resources in the forms of finance and expertise, and this has been found in studies such as Ramsay, et al. (2003) and Liberman-Yaconi, et al. (2010). As Jones, et al. (2012) point out though, very small firms may well have more to gain from ICT engagement compared with other firms as the relative advantage achievable through improved access to markets, streamlined supply chains and more efficient business processes and customer relations may have an impact relatively greater – perhaps even the key for some to sustainability of the business.

Caldeira and Ward (2002) posit that ICT adoption in SMEs is a staged process whereby initial adoption for internal and administrative applications may comprise a firm's introduction to ICT and thereafter greater sophistication of use occurs incrementally as familiarity with technology and appreciation of the utility of it develop. Certainly, Lawson, et al. (2003) identify that *IT* (ie. PCs and standalone applications) is used, at least to some extent, almost ubiquitously in commercial businesses. This is not reflected in business Internet use though as we know that saturation has not been reached, and

as noted already, that likelihood of Internet presence falls as firm size decreases. In addition to this quantitative difference, Forman (2005) contends there is also a qualitative difference in that small (and very small) firms are less likely to exhibit sophisticated ICT use compared with larger firms. One approach to investigate qualitative variation in ICT use has been to measure and compare website quality and sophistication (eg., Gonzalez and Palacios, 2004). As Yang, et al. (2005) point out though, there is considerable qualitative variation in websites as a consequence of the considerable variation there exists between product offering, sales range etc, amongst firms. As a result, there is some criticism of arbitrary measurements throughout the literature (eg. Yang et al., 2005; Hernández et al., 2009; Simmons, et al., 2011). Alternatively, stage models of ICT adoption have been cited as another means by which levels of ICT engagement might be explained. Using (different) stage-model approaches, both van Iwaarden, et al. (2003) and Meckel, et al. (2004) find there is some evidence that small firms have less sophisticated websites than large firms. Spinelli, et al. (2013) attribute lower adoption rates and less sophisticated engagement to a lack of strategic deployment of ICT in small firms. It is to strategy, ICT and the small firm therefore that we now turn.

ICT, small firms and strategy

As reported in the small firms literature generally, the use of ICT in businesses can add value (Wade, et al. 2004; Ifinedo, 2011). As noted though, this tends to be documented in the literature as a motivator for adopting ICT, rather than on what firms have actually experienced as a consequence of adoption (Spinelli, et al. 2013). In particular, empirical studies have found that the expectation of benefits of ICT adoption is the most common motivator amongst small firm owners (Deakins, et al. 2004; Ifinedo, 2011). Empirical evidence also references the ubiquity of ICT and expectation within industries, supply chains and amongst customers that a business will be online, and this expectation is also a driver of ICT adoption (Galloway et al. 2011; Jones et al. 2012). Alongside this, studies are beginning also to scrutinise the extent to which adoption of ICT is strategic within small firms in so far as it is planned and intended to meet a specific objective or set of objectives for a business.

There is evidence in the extant literature that small firms adopt ICT in order to meet classic strategic business objectives, such as to increase the number of customers by accessing extended markets (Simmons et al. 2011). Spinelli, et al. (2013) note that from the stage model perspective, ICT adoption equally may be an incremental reaction to a changing business environment. In small firms, this is less likely to be considered, and in micro firms, according to Liberman-Yaconi et al. (2010) less likely again in that they find that amongst their sample of Australian micro firm owners, decisions were often intuitive and heuristic, rather than structured and explicitly considered. Thus, according to Spinelli, et al. (2013, p. 818):

“it is perfectly possible that some small businesses adopt ICT without a clear strategic goal in place and lacking the external capability to manage the investment effectively”.

According to Mintzberg, et al. (1998), this does not necessarily render implementation as non-strategic though. Emergent strategy allows that firms react to dynamic business and market environments. While not planned, per se, this reaction is described as strategic in so far as it is decisive and conscious and results in business outcomes (Mintzberg, 1994). This may be particularly relevant to small firms' use of ICT. Internet use is known for its efficiency for businesses and customers, but it is large firms and new types of organisations, such as Internet-based businesses and social media organisations, that have been at the vanguard and have shaped the Internet environment. While the small firms sector will include new firms and firms wholly Internet-oriented, the vast majority of them are established businesses selling traditional (ie. non-virtual) products and services. They must conform to the Internet environment to remain viable and credible, and in some cases where the Internet has resulted in increased competition, to survive. In this respect small firms have had to react and adapt to the Internet as a trading environment. While this reaction may be emergent and concern sustainability and competitiveness rather than business growth, it is still strategic. The literature on

small firms ICT use has almost exclusively focused on the ability to use ICT to achieve growth though. Fillis, et al. (2003) identify a lack of engagement with ICTs for the purposes of growing a small firm as organisational inertia. This might be interpreted as a failure of some firms to engage with ICT use as a consequence of a lack of strategic vision. Jones, et al. (2012) takes a more nuanced perspective. They acknowledge that adoption and use of ICT is based on perceived benefits, industry and customer expectations, but that in very small firms (in their study firms with fewer than 10 employees), there was less interest in aspiring or conforming to these. Instead, very small firms that sought to change and grow were likely to engage with ICT and very small firms that sought to stay very small and fulfil the lifestyle aspirations of the owner would not. In both cases, participation or lack of participation in ICT was strategic in so far as it was planned and intentional. Jones, et al. (2012) go further and suggest that the decision to limit ICT engagement may be not only strategic in terms of maintaining lifestyle desired by owners in terms of limited growth, but may also be good strategic business – the potential to overtrade as a consequence of accessing markets that a firm cannot satisfy can be as disastrous as not accessing enough customers. Galloway et al. (2011) concur broadly with this, and find also that Internet participation to facilitate local markets, rather than desire for extended market growth, is also a considered, conscious driver of ICT engagement for some rural firms. To this extent ICT engagement to foster local activity is also described as observably strategic.

Hypotheses

The extant literature identifies gaps in our understanding of the experiences of ICT in small firms and specifically if there is variation between the general small firms sector and very small firms. Moreover, it is not clear from the literature the extent to which, if at all, ICT use, or indeed lack of use, is strategic in small firms. More generally, there are few studies that look at and compare separate but similar contexts to explore if there are issues inherent in small firms or if these are contextual. Based on current understanding of ICT and small firms, the following hypotheses are generated, and after providing a description of the methodology employed to test them, results from samples of small firms in Scotland and New Zealand are presented.

Hypothesis 1: There will be variation between the extent of ICT engagement between Scottish and New Zealand small firms.

Hypothesis 2: There will be variation between the extent of ICT engagement between very small firms and small firms in Scotland and New Zealand.

Hypothesis 2a: Greater ICT engagement will result in greater sales growth for small firms in Scotland and New Zealand.

Hypothesis 2b: Greater ICT engagement will result in greater profit growth for small firms in Scotland and New Zealand.

Hypothesis 3: Due to their geographical location, New Zealand small firms will use ICT to access external markets to a greater extent than Scottish firms.

Method

A broad survey of small firms in Scotland and New Zealand was conducted. The rationale for this was to identify within a random sample a snapshot of how Internet use affected the market diversification activities of both countries. With sufficient responses, comparisons between New Zealand and Scotland small firms could be facilitated. Different approaches were used to create samples for New Zealand and Scotland and each will be discussed in turn, starting with Scotland.

The Scottish firms were sourced randomly from the UK Yellow Pages online directory of business services (<http://www.yell.com/>). The directory's search function enabled the researchers to classify potential small businesses by location and their products and services offered. Conveniently Yellow Pages search results provide both traditional contact details and if a website was available for each firm. The possession of a website acted as a convenient filter for identifying potential companies to include in the study. Websites were then visited to establish the number of employees working for the company. To be considered a small business the company had to employ between 0 to 49 employees. For the most part this was a straightforward exercise as most websites provided employee numbers; many small business websites highlighted their size as a favourable point of difference from larger rivals. If there was any doubt about employee numbers the company would be rejected and the next result investigated. The above process was repeated until a sample of 635 Scottish firms was compiled.

The New Zealand sample was randomly drawn from a database of small firms developed by the New Zealand Centre for SME Research. The Centre's database features over one thousand New Zealand small firms. To make the selection of small firms as random as possible every third one was investigated. Using this approach 300 New Zealand firms were selected. While the methods employed to gather New Zealand and Scottish databases were dissimilar, the random nature of how respondents were collected for each provides confidence that they were both representative of their respective populations.

The survey was administered by telephone in New Zealand and Scotland in early 2013. The questionnaire was designed to ask owners about their market reach, ambitions for market reach, and Internet usage. It was also used to confirm the details that had been gathered whilst building up the two databases. All firms sampled were online, defined as those firms with a website with greater functionality than just an advertisement of the firm (i.e. the website allowed the small business to communicate and transact with customers), and they all contained fewer than fifty employees. A sample of 302 respondents, 134 from New Zealand and 168 from Scotland, was achieved, representing a 32 percent response rate overall.

Dependent Variable

The dependent variable used in this study was market diversity. We were interested in exploring the extent to which small firms' sales were local and external and any variation between the two countries, given their very different geographical contexts. To obtain this market diversity information, respondents were asked to indicate on a six-point Likert scale the average annual percentage of firm sales made in the same village, town or region of New Zealand or Scotland as their business (value 1 being "Less than 5percent" and value 6 being "81 to 100percent").

Independent Variables

Several independent variables were used in the study and these are illustrated in Table 1. The first was the extent of Internet usage by small firms. This was measured with a five-point Likert scale question that asked about the degree to which firms use the Internet for sales transactions with their customers. The responses 'never', 'rarely' and 'sometimes' were arbitrarily assigned to the category *not sophisticated*, and 'often' and 'always' to *sophisticated*. The second independent variable classified New Zealand and Scottish small firms. The third was employee numbers, which was determined by a four-point scale question (*less than 5 employees, 5 to 10 employees, between 10 and 20 employees and more than 20 employees*). Employee numbers were considered to determine if firm size influences Internet usage, market diversity and performance. Another independent variable measured was the degree to which business profits had changed. This was a five-point scale that referred to the last three years (value 1 being "Profits declined by more than 21percent," value 2 being "Profits declined by less than 20percent," value 3 being "Profits have remained the same," value 4

being “Profits have grown by less than 20percent,” and value 5 being “Profits have grown by more than 21percent”). Finally, the degree to which business sales had changed over the past three years was measured. A single five-point scale was used to measure this, as for the previous profit measure. Small firm respondents were asked about changes in their sales and profit levels to determine if Internet usage and market diversity had a performance impact. The measure of more or less than 20 percent change for sales and profits is admittedly arbitrary. This was considered a reasonably good indicator of change though. It was considered more likely that response rates for these broad, indicative questions would be greater than if more specific details about changes to sales and profits were sought.

Table 1 here

A wide range of different types of small firms were analyzed such as bakers, bed and breakfast establishments, restaurants, small hotels, car repair garages, adventure tourism operators, car and bicycle hire operators, computer repair retailer, food retailers and wholesalers, engineering and construction firms, specialty clothes retailers, landscape gardeners, accountants, farm consultants and a pest control company. The non-parametric technique known as Chi Square was used for data analysis purposes in this study. The largely categorical nature of the data collected meant this non-parametric technique was deemed to be an appropriate form of analysis.

Findings

It was hypothesised (H1) that there would be variation between the extent of ICT engagement between New Zealand and Scottish small firms. Table 2 shows that there were significantly more New Zealand small firms in the category labelled *sophisticated use* than Scottish firms. Thus, New Zealand small firms made significantly greater use of the Internet to transact with their customers than Scottish small firms.

It was also hypothesized (H2) that very small firms would have less engagement with ICT than small firms generally. This was investigated by dividing the sample into those firms with fewer than five employees and those firms with five or more. However, Table 2 shows there was no significant difference between ICT engagement levels of small and very small firms, suggesting that very small firms have ICT engagement levels that are comparable to small firms generally. Further, sales growth was comparable across sizes, small and very small, Scottish and New Zealand firms (H2a). Likewise, there were no significant differences between the profit levels of Scottish and New Zealand small and very small firms (H2b).

The third hypothesis (H3) posited that as a consequence of their unique geographical circumstances, firms in New Zealand would be more likely to engage with ICT to access external markets. Market reach was expressed in terms of the percentage of sales that are local as reported by the firms. It was postulated that more sophisticated ICT engagement in New Zealand small firms compared to Scottish ones (H1), would result also in greater external market reach. Results show that the difference was not significant though, implying that New Zealand small firms are no more likely than Scottish ones to use ICT to reach extended markets.

Table 2 here

Discussion

The results from the study are revealing in a number of ways. First, half of the randomly selected firms with a website had quite a sophisticated level of ICT engagement. In line with Mintzberg et al. (1998)

it may well be the case that this evidences a reaction to the environment, in that as ICT and Internet use is developing, so too is business use. This reaction to the environment can be argued to be strategic in so far as it is underpinned by a conscious business-based decision to engage. Second, contrary to findings in Ramsay, et al. (2003) and Liberman-Yaconi, et al. (2010), no variation was found between the extent to which small firms and very small firms (with fewer than five employees) engage with ICT. We must bear in mind that H2 investigates sophistication of ICT use of firms that are all online though. Since we know that very small firms and sole traders are least likely to be online at all, what we can conclude in this study is that we find no difference in sophistication of Internet use amongst small and very small firms that are online. The distinction in terms of sophistication found elsewhere in the literature between small firms and very small firms may be influenced by the greater rate of non-participation amongst those of smallest size. We suggest here that if a firm is online at all, the size of it, within the small firms category of fewer than 50 employees, is not a significant distinction.

In terms of the effect of sophistication of ICT use on sales and profit, neither were significantly affected. Further, results for H3 show that, by and large, small firms in the sample do not use ICT to access extended markets. This corroborates findings in Galloway et al. (2011) that ICT use in small firms appears to augment local markets to a greater extent than it does to reach extended ones. While these results appear to give credence to the argument that use of ICT is not part of a growth strategy, they equally do not imply that ICT use in small firms is not strategic at all. As noted in Galloway, et al. (2011) and Jones, et al. (2012), growth via extended markets is not the only strategic objective observed for small firms. Results for H3 provide further support for this. The more sophisticated use of ICT in New Zealand small firms appears to support the idea that strategies, most likely emergent strategies, can be seen to be a response to the specific environment small firms are in. For small firms in both locations though, despite their very different geographical circumstances, the focus appears to be more likely to be local rather than international sales. In New Zealand, for a business to survive and thrive, even if not oriented to strategic growth, there is evidence that ICT engagement is more sophisticated than in Scotland. Business reaction to the globally remote environment of New Zealand compared to the less remote environment of Scotland may be a distinguishing feature of the variation in ICT use between the two countries. Perhaps the ICT culture in New Zealand is more mature as a consequence of the wider business community mitigating geographical remoteness from markets and industry. This sophistication may have filtered down to the small firms sector despite the fact that small firms in New Zealand are as likely to be focused on local markets as anywhere else. This being the case, the sophisticated use of ICT amongst New Zealand small firms may still be described as strategic in that it demonstrates reaction and adaptation to local business and customer expectations. In the cases of both Scotland and New Zealand therefore, the use of ICT cannot be described as devoid of strategic underpinning, but it may be the case that a reactive strategic response is being observed most often for small firms in terms of choosing to engage in the ICT-enabled business world for purposes that are not exclusively (or often) about growth. Where Scotland has critical mass of customers on the doorstep, the wider New Zealand business community may have to go that extra mile to extend their reach. For small firms in New Zealand, this might be merely the environment they trade in, and to participate they must engage strategically at this level.

Conclusion

This study is limited in that it uses Internet use as a proxy for all ICT activity and this may not reflect other uses small businesses make of technology. Additionally, the measures of size and orientation used in this study are arbitrary and open to challenge. Despite these, broad results from this study suggest that ICT engagement and use appear to be widespread in small firms in both Scotland and New Zealand. It is likely that while growth is not an observably common objective, the use of ICT seems nevertheless to have resulted in strategic outcomes for firms. This strategic use of ICT is more likely to be in line with emergent strategic reaction, rather than any particular planning, but only further research can determine the extent to which this is the case. What appears clear is that while ICT

engagement and use might be interpreted as strategic, the specific ways in which this is exhibited by firms in New Zealand and Scotland does vary, and this variation may be linked to the specific geographical environment and circumstance of each location. This contributes in terms of the implications for those who seek to enable and support ICT engagement in the two countries included in this study. It also implies there is need for greater exploration of ICT use in small (and very small) businesses. Further research in different countries would be revealing, especially where variation of use can be observed. Additionally, further investigation of the extent to which ICT use is strategic is required, and whether this is planned or reactive would be particularly interesting. From a theoretical perspective, the testing of classic strategy theory and emergence theory has the potential to afford improved understanding of strategic activities in small firms more generally. In particular the almost exclusive focus on growth in the small firms strategy literature seems inappropriate and more nuanced investigations into small firms' strategies are required if we are to understand strategy formation and strategic goals in the sector. To this end, qualitative methods whereby small firm operators might relate their approaches to strategy seem attractive, as do ethnographic methods to explore in some depth the strategies of small firms and specifically those relating to their ICT engagement and activity.

References

- APS Group. 2011. *Research on Broadband and Business in Scotland*. The Scottish Government: Edinburgh.
- Bharadwaj PN, Soni RG. 2007. E-commerce usage and perception of e-commerce issues among small firms: results and implications from an empirical study. *Journal of Small Business Management* **45**: 501-521.
- Caldeira M, Ward JM. 2002. Understanding the successful adoption and use of IS/IT in SMEs: An explanation from Portuguese manufacturing industries. *Information Systems Journal* **12**: 121-152.
- Deakins D, Mochrie R, Galloway L. 2004. Rural business use of ICT: A study of the relative impact of collective activity in rural Scotland. *Strategic Change* **13**, 139-150.
- Fillis I, Johansson U, Wagner B. 2003. A conceptualisation of the opportunities and barriers to e-business development in the smaller firm. *Journal of Small Business and Enterprise Development* **10**: 336-344.
- Forman C, Goldfarb A, Greenstein S. 2005. How did location affect adoption of the commercial Internet? Global village vs. urban leadership. *Journal of Urban Economics* **58**: 389-420.
- Galloway L. 2007. Can broadband access rescue the rural economy? *Journal of Small Business and Enterprise Development* **14**: 641-653.
- Galloway L, Mochrie R, Deakins, D. 2004. ICT-enabled collectivity as a positive rural business strategy. *International Journal of Entrepreneurial Behaviour and Research* **10**: 247-259.
- Galloway L, Sanders J, Deakins D. 2011. The Role of Internet Portals for Rural Small Firms: Evidence from Scotland. *Journal of Rural Studies* **27**: 254-262.
- Gonzalez FJM, Palacios TMB. 2004. Quantitative evaluation of commercial websites: An empirical study of Spanish firms. *International Journal of Information Management* **24**: 313-328.
- Haugh HM, Robson PJA. 2005. Are Scottish firms meeting the ICT challenge? Results from a national survey of enterprise. *Entrepreneurship and Regional Development* **17**: 205-222.
- Hernández B, Jiménez J, Martín MJ. 2009. Key website factors in e-business strategy. *International Journal of Information Management* **29**: 362-371.
- Iñedo P. 2011. Internet/e-business technology acceptance in Canada's SMEs: An exploratory study. *Internet Research* **21**: 255-281.
- Jones P, Simmons G, Packham G, Beynon-Davies P, Pickernell D. 2012. An exploration of the attitudes and strategic responses of sole-proprietor micro-enterprises in adopting information and communication technology. *International Small Business Journal* **32**: 285-306.
- Lawson R, Alcock C, Cooper J, Burgess L. 2003. Factors affecting adoption of electronic commerce technologies by SMEs: An Australian study. *Journal of Small Business and Enterprise Development* **10**: 265-276.

- Liberman-Yaconi L, Hooper T, Hutchings K. 2010. Toward a model of understanding strategic decision-making in micro-firms: Exploring the Australian Information Technology Sector. *Journal of Small Business Management* **48**: 70-95.
- Meckel M, Walters D, Greenwood A, Baugh P. 2004. A taxonomy of e-business adoption and strategies in small and medium sized enterprises. *Strategic Change* **13**: 259-269.
- Mintzberg H. 1994. *The Rise and Fall of Strategic Planning*. Free Press: New York.
- Mintzberg H, Quinn JB, Ghoshal S. 1998. *The Strategy Process*. Prentice Hall: London.
- New Zealand Government. 2008. *Information and Communication Technology in New Zealand and Australia*. Available at <http://www.stats.govt.nz>. Accessed Sept 2014.
- Ramsay E, Ibbotson P, Bell J, Gray B. 2003. E-opportunities of service sector SMEs: an Irish cross-border study. *Journal of Small Business and Enterprise Development* **10**: 250-64.
- Rowe J. 2005. Economic development from a New Zealand perspective. In *Economic development in New Zealand*, Rowe J (ed.). Ashgate: Aldershot.
- Scottish Government. 2013. *Businesses in Scotland*. Available at <http://www.scotland.gov.uk/>. Accessed Sept 2014.
- Simmons G, Armstrong G, Durkin M. 2011. An exploration of small business website optimization: Enablers, influencers and an assessment approach. *International Small Business Journal* **29**: 534-561.
- Small Business Advisory Group. 2012. *Small and Medium Businesses in New Zealand: SMEs – Thriving and Surviving in a Seismic Environment*. Report of the Small Businesses Advisory Group. Available at <http://www.med.govt.nz/>. Accessed Sept 2014.
- Spinelli R, Dyerson R, Harindranath G. 2013. IT readiness in small firms. *Journal of Small Business and Enterprise Development* **20**: 807-823.
- van Iwaarden J, van der Wiele T, Ball L, Millen R. 2003. Perceptions about the quality of websites: a survey amongst students at Northeastern University and Erasmus University. *Information and Management* **41**: 947-959.
- Wade M, Johnston D, McClean R. 2004. Exploring the net impact of Internet business solution adoption on SME performance. *International Journal of Electronic Business* **2**: 335-350.
- Yang Z, Cai S, Zhou Z, Zhou N. 2005. Development and validation of an instrument to measure user perceived service quality of information presenting Web portals. *Information and Management* **42**: 575-589.

Biographical Notes

Laura Galloway, corresponding author

Laura Galloway is a professor of Business and Enterprise at Heriot-Watt University. She has a research and teaching background in entrepreneurship, small firms and leadership. She publishes on peripherality both regionally and demographically including examination of minority entrepreneurship and the role of enterprise in reducing social and economic barriers. Additionally, she pursues research on leadership, particularly in the context of value generation in organisations. Laura Galloway, School of Management and Languages, Heriot-Watt University, Edinburgh, EH14 4AS; 0131 451 8286; l.galloway@hw.ac.uk