



Technology Analysis & Strategic Management

ISSN: 0953-7325 (Print) 1465-3990 (Online) Journal homepage: http://www.tandfonline.com/loi/ctas20

On e-business strategy planning and performance: a comparative study of the UK and Greece

Alexandra Lipitakis & Paul Phillips

To cite this article: Alexandra Lipitakis & Paul Phillips (2016) On e-business strategy planning and performance: a comparative study of the UK and Greece, Technology Analysis & Strategic Management, 28:3, 266-289, DOI: 10.1080/09537325.2015.1094568

To link to this article: http://dx.doi.org/10.1080/09537325.2015.1094568

1	1	(1
Г			

Published online: 31 Oct 2015.



Submit your article to this journal 🗹

Article views: 41



View related articles



則 View Crossmark data 🗹

Full Terms & Conditions of access and use can be found at http://www.tandfonline.com/action/journalInformation?journalCode=ctas20

On e-business strategy planning and performance: a comparative study of the UK and Greece

Alexandra Lipitakis and Paul Phillips

Kent Business School, University of Kent, Canterbury, UK

ABSTRACT

In this research study the effect of Financial and Non-Financial performance of organisations on e-business strategy planning is investigated. The strategic planning parameters of Phillips model are examined when applied to e-business strategy planning. The relationships between these parameters, that is, Formality, Participation, Sophistication and Thoroughness, and Financial and Non-Financial Performance, are examined and the directions of these relationships are investigated. A conceptual model has been constructed and guantitative research methods are used to test four hypotheses. The proposed e-business model was tested in two EU countries, the UK and Greece. A synoptic statistical analysis and comparative numerical results are given showing that in both countries Participation has a positive relationship with Financial Performance and Formality has a positive relationship with Non-Financial Performance. The proposed model is extendable and valid in countries other than the UK and Greece, thus being able to be adapted to and used in other national environments.

ARTICLE HISTORY

Received 15 September 2014 Revised 13 July 2015 Accepted 9 September 2015

KEYWORDS

E-business management; e-business performance; strategy management methodologies; strategy planning; quantitative methods

1. Introduction

During the last decades considerable research efforts have been focused on e-business modelling technologies and its multidimensional applications. The traditional business modelling research, belonging to the organisational management field, forced by the increasingly extendable evolving e-market opportunities, has been gradually redirected to the e-business modelling research of e-business technologies and their applications (Brynjolfsson and Hitt 2003; Rust and Kannan 2003; Zilman 2005–2012; Yunus, Moingeon, and Lehmann-Ortega 2010). Although several researchers and practitioners are using various business models, there is a comparatively lack of theoretical understanding and knowledge of suitable tools in the area of e-business modelling.

Research efforts have been directed to the study of the transformation of the traditional business models to e-business, the investigation of the impact of e-business on traditional business practices, the exploitation of opportunities enabled by e-business technological innovations and related business modelling complex applications, including Internet business models, business models on the Web, business models in e-commerce and generally business models for e-markets (Koellinger 2008).

E-business can be defined as any process that business organisations conduct over information technology or computer-mediated networks, including various activities that businesses may conduct over the web, containing the concept of e-commerce and applications of information technologies for business processes, commercial and functional activities, such as finance, marketing, human resource management and operations (Zhang and Gai 2005). It is reported that the UK is

the world's leader in e-business and one of the Europe's largest economies (ONS 2011) and according the Forrester Research (2012) global e-business sales exceeded \$200 billion in 2011 and are expected to grow from 7% of overall retail sales to 9% by 2016. Businesses and organisations may be able to increase their Financial and Non-Financial performance by using the e-business strategy planning parameters proposed in our new e-business model.

The concept of e-business can transform organisations and industries into virtual networks of customers and suppliers, working together in order to create value-added processes. This concept challenges long-accepted business models, requiring leaders of organisations to analyse, capture and project the transformational impact of e-business on the most critical and basic processes of their organisations (Fahey et al. 2001). E-business strategy, sourcing and governance are considered to be critical issues in modern private and public organisations, requiring efficient planning, use and control of information technology by managers (Gottschalk 2006).

The main investigations on business models are reported to include the following:

- understanding of basic elements, components and their relationships of various business domains and communicating such understanding of business models (Osterwalder and Pigneur 2002; Rust and Kannan 2003; Pateli and Giaglis 2004; Smith and Linder 2005; Wirtz, Schilke, and Ullrich 2010),
- (2) design of suitable information and communication systems for business models (Mahmood, Kohli, and Devaraj 2004),
- (3) experimentation with innovative business concepts, adapting new business initiatives and improving current business models (Osterwalder and Pigneur 2002, 2005; Zhang, Cheng, and Boutaba 2010; Cavalcante, Kesting, and Ulhoi 2011).

The research quality evaluation methodologies have been recently applied for the improvement of e-business performance evaluation methods (Lipitakis and Lipitakis 2012, 2013).

The purpose of this research work is to establish whether relationships exist between e-business strategy planning and organisation's performance, and formalise these relationships between the two.

Note that this research study use key concepts, that is, four e-business strategic planning variables which have not previously been examined together in this context differentiating the study from other related studies that examine relationships between e-business strategy planning and organisations' performance (see Table 1). The paper examines the effects of four types of planning effectiveness parameters, that is, the independent variables of Formality, Participation, Sophistication and Thoroughness, on e-business strategic planning and performance relationships. By investigating the performance categories measures of both Financial and Non-Financial dimensions of performance have been considered.

Research was conducted in the UK and Greece, to determine the validity of the model in each country. Answers are provided to the issues and questions arising from research. This research study seeks to examine the relationship between e-business and performance from a strategic planning point of view by answering to the following basic research questions:

Research Question 1: Is there a relationship between e-business strategy planning and performance? Research Question 2: If a relationship between e-business strategy planning and performance exists, what is the

Research Question 3: Are there any similarities between e-business strategy planning and performance in the UK and Greece?

In this research work, a new e-business strategic planning model with its strategic planning parameters is introduced, the so-called Lipitakis–Phillips (LP) e-business model, which then is applied and tested in the UK and Greece for comparative purposes. Specifically, the framework and metrics of Phillips' model (Phillips 1996, 2003) research is adapted and applied to e-business strategy planning. A new e-business model is introduced and its theoretical framework and research methodology are stated. A relevant case study is considered, that is, the proposed model is applied in the UK

direction of this relationship?

Table 1. Research models and studies examined.

Authors/Research/Research Model	Formality	Participation	Sophistication	Thoroughness	Performance	E-business	Strategy for e-business	Model	Cross country
Phillips (1996, 2003)	1	1	1	1	1	1	-	1	_
Coltman, Devinney, and Midgley (2007)	1	1	1	_	1	1	1	1	1
Caniato et al. (2009)	_	_	_	_	_	1	1	1	1
Koellinger (2008)	_	_	_	_	1	1	_	1	1
Pai and Yeh (2008)	_	1	_	1	1	1	1	1	_
Riggins and Mitra (2007)	_	_	_	_	_	1	1	1	_
Johnson et al. (2007)	_	_			1	1		1	1
Sanders (2007)	_	_	_	_	1	1	_	1	_
Hackbarth and Kettinger (2004)	_	1	_	_	_	1	1	1	_
Zhu, Kraemer, and Xu (2003)	_	_	_	_	-	1	1	1	1

and Greece, the findings are discussed, related statistical analysis and numerical results are presented and a comparison of similarities and differences between the two countries is made.

This research study includes four e-business strategic planning variables, that is, Formality, Participation, Thoroughness and Sophistication, which had not previously been examined together in this context in the earlier empirical literature. The proposed model explores how the strategic planning effectiveness variables when applied to for e-business strategic planning affect both Financial and Non-Financial performance of organisations by considering four testable strategic planning hypotheses. These hypotheses for Financial and Non-Financial performance have been statistically tested leading to significant conclusive relationships.

The proposed model can be used as a benchmarking tool to measure e-business strategy planning and performance, and organisations and businesses can assess their capabilities and examine if any e-business strategy planning parameters need to be adjusted in order to optimise their performance. The purpose of this paper is to develop a clearer view of how e-business strategic planning may affect Financial and Non-Financial performance in organisations, by bringing together elements of e-business strategy planning, strategy planning and performance management and demonstrate how e-business strategy planning components have positive relationship with Financial and Non-Financial performance.

2. Related research models and their influence on the proposed model

In the last decade several related research models have been proposed, including the following:

- (1) The studies of Hackbarth and Kettinger (2004), Johnson et al. (2007), Sanders (2007) and Koellinger (2008) all conducted research involving strategy planning aspects of organisations that use ebusiness as part of their strategy. These studies each include some measures of Formality, Participation, Thoroughness and Sophistication, but none of the studies includes all four of the aspects used in our study in their model.
- (2) Koellinger's (2008) study covers the market share aspect in performance indicators. This is included as a component of Non-Financial performance in the current research. Koellinger's research includes aspects of Thoroughness and Participation in strategy planning. Furthermore, Koellinger (2008) has examined multiple business sectors, including tourism, and the research was conducted across 25 different countries, inspiring the use of cross-country comparison of a business model in the current study. The current research examines Thoroughness and Participation, and examines multiple business sectors across two countries.
- (3) Zhu, Kraemer, and Xu (2003) highlight the differences in e-business adoption in a high- versus low-intensity country, and suggest that e-business firms in high-intensity countries are more cautious in adopting e-business. Zhu et al.'s (2003) findings indicate that a difference in the size of the organisations using e-business in a high- versus low-intensity country should be anticipated. Thus we would expect to find that more respondents from small firms would be using e-business in the UK than in Greece. It will be interesting to compare the findings of our study, which include the UK as a high-intensity country, and Greece as a low-intensity country, with the findings of Zhu, Kraemer, and Xu (2003).
- (4) Hackbarth and Kettinger (2004) discuss strategy planning aspects and an e-business model, but do not examine how these affect the organisation's performance. The current research aims to include measures of performance in the model.
- (5) Caniato et al. (2009) concluded that companies consider e-business a relevant issue, even if a relatively small number of them are investing significantly in such applications of e-business technologies on company performance. Organisations that invest now in e-business technologies will develop better.

Existing business models can be modified by designers of e-business models (Petrovic, Kittl, and Teksten 2001; Demil and Lecocq 2010). An e-business model can be conceptualised as a system with value creation and value appropriation perspectives that is made up of certain components, linkages

between these components and dynamics. The adaptation of a business model for application to e-business has been suggested to follow an evolutionary process with six stages: e-business, e-commerce, e-enterprise, external communications, internal communications and transformations.

New e-business models are complex, reflecting the increased complexity of e-business processes. For example, supply chain networks have become more flexible and collaborative planning approaches are being employed with the aim of achieving greater added value to the community networks (Coltman et al. 2001; Vering and Matthias 2002). The influence of each model varies for different stages of e-business planning and implementation (Ash and Burn 2003). For example, certain e-business models offer a foundational perspective of strategies, planning tactics and performance objectives for e-business implementation, and can be used for the direction and evaluation of progress in the virtual space for traditional organisations. E-business models can offer managerial help by simulating e-businesses and learning about possible consequences of decisions without causing any damages to the organisation. Several formal e-business models can also help in the identification of relevant measures in e-business in a similar way to the balanced scorecard (BS) approach (Kaplan and Norton 1993).

An analytical review of conceptual and evaluation e-business strategic planning models with their key characteristics, such as purpose, design/methodology/approach, data-set, measures/variables, supported hypotheses, findings, referring to E-business strategy and performance, Internet and Performance and various Research Model methodologies has been recently presented in a related research work (Lipitakis 2013).

Several related studies have investigated e-business and examined the relationships between ebusiness and organisations' performance (Lim, Richardson, and Roberts 2004; Sriram et al. 2004; Coltman, Devinney, and Midgley 2007; Johnston, Wade, and Maclean 2007; Lee, Lee, and Lin 2007; Sanders 2007) revealing the need to formalise the relationships between the two. In recent years, several contributions on business model concept, e-business strategy planning and performance have been made. These contributions include the following related research work in the corresponding fields: *Business Model*, *E-business strategy*, *Strategy planning and performance*.

Various relevant topics concerning e-business, e-business studies, e-business strategy have been also investigated. E-business contains business processes which affect the entire value chain system: e-purchasing, electronic processing of orders, supply chain management, customer service, collaboration with business partners, by using web, multiform web-based applications, Internet, intranets, extranets or combination of these (Beynon-Davis 2004). Significant research contributions in the field of e-business include the following related subfields: *e-business strategy planning and firm performance; e-business model concepts; e-business strategic framework* and *e-business in general* (Lipitakis 2013).

3. The LP e-business strategic planning model

The four strategic planning parameters of Phillips model (Phillips 2003), namely Formality, Participation, Sophistication and Thoroughness, mediate e-business strategy planning to Performance. E-business strategy planning and performance are considered. Note that performance will be split into two dimensions, Financial Performance and Non-Financial Performance.

In recent e-business case studies examining e-business strategic planning and e-business performance, their implications and importance have been examined. Koellinger (2008) asserts that innovative organisations (such as those using e-business strategy) are significantly more likely to grow than non-innovative firms. However, what happens to an organisation's performance when it uses ebusiness strategy planning has not yet been fully explored. Research has signified that certain *variables* and constructs of strategic planning may be combined with e-business-specific constructs or used individually, and applied to the overall e-business strategic planning of the organisation to improve the performance of the organisation.

The proposed 'LP model' has been adapted from a related recent research work (Phillips 1996) for use in an e-business strategic planning context and e-business performance evaluation. The

theoretical and conceptual framework follows the same lines and the operationalisation of constructs of the new model is explained, showing how the e-business case findings complement the original literature review supporting the adaptation of the model for e-business strategic planning applications. Note that the e-valuation of certain e-business strategies on firm performance by adaptive algorithmic modelling as an alternative strategic managerial approach has been recently presented (Lipitakis and Lipitakis 2012).

In this article a new e-business model is introduced and applied to e-business strategic planning by investigating the related strategic planning components and both the Financial and Non-Financial performance of organisations. The proposed e-business model is applied in two EU countries, that is, the UK and Greece, and a comparative study is presented. It is pointed out that the proposed ebusiness model is dynamically expandable in the sense that it can be improved, enriched and used for e-business strategic planning, management and performance by considering instead of four strategic planning parameters a greater number of corresponding strategic planning parameters adapting certain realities and idiosyncrasies of e-business technologies, their applications and strategic modelling environments.

The influence of flexibility on organisational effectiveness in e-business environments can be depicted by a seven factor model including the factors: alliance/joint decision management and intelligence, enterprise-wide change management, organisational learning, process oriented agility, network centric information management, leadership of transformation and knowledge exchange meetings (Phillips 2010).

4. Theoretical framework and performance models

Strategic planning parameters

4.1. Development and advancement of Phillips' research

One of the major contributions of a related research work (Phillips 1996) was the identification of the positive relationship between the core strategy planning processes of Formality, Participation, Sophistication and Thoroughness and Business Performance. The second important contribution of this research work was the operational measures used in his work, which have been extended and used by several researchers (Table 2). In the following, a synoptic presentation of the basic concepts of the above core strategy planning processes is given. It should be noted that the number of

 Table 2. Strategic planning parameters of Formality, Participation, Sophistication and Thoroughness: description and support

 literature.

strategie planning pa	lameters	
Strategic planning design parameters	Description	Support literature
Formality	The extent of use of explicit and systematic procedures, policies and goals in the formulation of an e-business strategy plan.	Shrader, Taylor, and Dalton (1984); Pearce et al. (1987); Baum and Wally (2003); Coltman, Devinney, and Midgley (2007, 2008)
Participation	Participation in e-business from senior and middle management, including communication, and development of a shared vision for the direction of the firm.	Gerbing, Hamilton, and Freeman (1994); Piercy and Morgan (1994); Coltman, Devinney, and Midgley (2007, 2008); Johnson, Melin, and Whittington (2003), Johnson et al. (2007); Nordqvist and Melin (2008); Jarzabkowsiki and Balogun (2009)
Sophistication	The use of a wide range of managerial techniques and having a short- or long-term approach in e- business strategy planning, coordination of e- business across the organisation, having an appropriate budget for e-business.	Bracker and Pearson (1986); Robinson and Pearce (1988); Venkatraman (1994); Bate, Khan, and Pye (2000); Chatterjee, Grewal, and Sambamurthy (2002); Coltman, Devinney, and Midgley (2007, 2008); Johnson et al. (2007); Clark (2010)
Thoroughness	The extent to which a firm uses internal and external experience, and ensures adequate time is devoted to the strategic planning process	Piercy and Morgan (1994); Johnson et al. (2007)

basic strategy planning processes of Phillips model can be extended to multiple core strategy planning processes in order to identify their relationships (Lipitakis 2013).

Several recent related contributions above and beyond Phillip's model with nearly same variables and hypotheses are also given:

Comparison of Business Model methods (Alberts 2011), development of unified framework of business model concepts (Al-Debei and Avison 2010), business models and performance measurement (Baden-Fuller and Morgan 2010, 2013; Boris and Winkler 2013), business model dynamics and impact of managerial attitudes (Cavalcante, Kesting, and Ulhoi 2011; Dibrell, Craig, and Hansen 2011), strategic planning and firm performance (Dibrell, Craig, and Neubaum 2014), business model generation and innovations (Gambardella and McGahan 2010; Osterwalder and Pigneur 2010), complex business models, strategic planning and firm performance (Smith, Binns, and Tushman 2010; Song et al. 2011), business models, strategy and innovation (Teece 2010), business models: recent developments and future research (Zott, Amit, and Massa 2011), strategic planning and firm performance (Falshaw, Glaister, and Tatoglu 2006; Glaister Keith et al. 2008; Rudd et al. 2008), strategic indicators – performance measurement and organisational effectiveness (The Pennsylvania State University 2008; Upadhaya, Munir, and Blount 2014).

4.2. Recent developments of strategic processes and performance

The original research is a product of its time and thus constrained by the limitations of the time for examining several marketing and strategy issues. During the next decade the capabilities of statistical analysis tools may improve allowing for more complex statistical and mathematical analysis. Several researchers incorporated this research model's original operational metrics to their own metrics measuring strategy planning processes and performance (Table 2). Furthermore, the application of the work in other countries indicates that the framework and metrics may be applied to other environments and sectors outside the UK. Since 1996 the usage of Internet and e-business applications has greatly expanded. In view of the importance of e-business in modern times, and considering that original work and metrics have already successfully applied by other researchers in a variety of other studies, the authors adapted and applied the framework and metrics of Phillips' model research to e-business strategy planning.

Strategic planning processes have been defined as long-term views designed to help organisations to have appropriate plans in place to respond effectively to new situations involving fundamental decisions and actions determining the nature and directions of firms' activities within legal bounds being produced by disciplined efforts (Bryson 1988; Mintzberg 1994; UK Institute of Directors 2000; Grant 2003; Ketokivi and Castañer 2004; Breene, Nunes, and Shill 2007; Whittington and Cailluet 2008; Chaffey 2009; Hernández, Jiménez, and Martín 2009; Clark 2010).

Performance measures have been recently studied (Haber and Reichel 2005; Falshaw, Glaister, and Tatoglu 2006; Carton and Hofer 2006; Zeng and Luo 2011) and strategic planning effectiveness variables have been applied to for e-business strategy planning affecting Financial and Non-Financial performance of organisations (Coltman, Devinney, and Midgley 2008; Ghandour, Benwell, and Deans 2010, 2011; Lipitakis 2013).

The theoretical framework for the proposed model has been presented and this model explores how the strategic planning effectiveness variables when applied to for e-business strategic planning affect both Financial and Non-Financial performance of organisations. The e-business model performance is accompanied with four testable strategic planning hypotheses corresponding to pre-determined four research questions, that is,

(H1): There is a relationship between Formality in e-business strategy planning and performance.

(H2): There is a relationship between Participation in e-business strategy planning and performance.

(H3): There is a relationship between Sophistication in e-business strategy planning and performance.

(H4): There is a relationship between Thoroughness in e-business strategy planning and performance. The null hypothesis H0 is defined such as

(H0): There is no relationship between DV4 in e-business strategy planning and IV2 performance, where DV4 is one of the four independent variables and IV2 is one of the two dependent variables.

Hypotheses for Financial and Non-Financial Performance have been considered and statistically tested leading to significant conclusive relationships.

4.3. Conceptual framework strategic planning constructs

A thorough examination of the literature review reveals the fact that strategic planning improves strategic performance by adding value to the organisation. Researchers who have studied strategy planning tended until recently to use mostly a single dimension when measuring. This research work uses a multidimensional approach to capture a set of attributes that give a good feel of the strategic planning effectiveness. This multidimensional approach has been operationalised by Phillips model four basic constructs, namely

Formality: the explicit and systematic procedures, policies and goals.

Participation: the involvement of senior and middle management; and improvement of communication and development of a shared vision for the direction of the firm.

Thoroughness: the extent to which a firm uses internal and external experience and ensures that adequate time is devoted to the strategic planning process.

Sophistication: use of a wide range of managerial techniques; having a short or long-term approach; coordination of e-business across the organisation and having an appropriate budget for e-business.

This research work is considering these basic components of strategic planning applying them to e-business strategic planning and examining if there is a relationship between them, and the performance of organisations that use e-business strategic planning.

5. A comparative study of the UK and Greece

5.1. Introductory remarks

In this section in order to establish whether a relationship exists between e-business strategy planning and performance we consider the following case study concerning a comparative study of the UK and Greece. In this framework research was conducted in the UK and Greece to determine the validity of our proposed model in each country. The pilot study and statistical analysis including sampling, context, data handling, various variable definitions and principal component analysis have been presented in a recent doctoral research work (Lipitakis 2013).

In the following sections, the UK and Hellenic basic elements of statistical analysis and findings are synoptically presented. The numerical experimentation and statistical analysis include elements of explanatory and confirmatory factor analysis, correlations between the independent variables of Financial and Non-Financial performance and the dependent variables of Formality, Participation, Sophistication and Thoroughness, and regression analysis.

The proposed model of e-business performance includes the following four testable hypotheses: There is a relationship between

- Formality (strategic planning is a process which is explicit, ongoing and consists of various formal processes such as putting goals in place and generation and evaluation of strategies)
- (2) Participation (participation of senior and middle management in the formation of an organisation's e-business strategic planning to the performance of the organisation)
- (3) Sophistication (structured strategic plans, structured operational plans, intuitive plans and unstructured plans)
- (4) Thoroughness (identification and implementation of elementary components leading to better strategic plans), in e-business strategy planning and performance.

6. Data collections and analysis

6.1. Greek data collections

In our study, 258 Greek companies were targeted and the Greek sample was obtained through a combination of email surveys, attending conferences relevant to chosen sectors, through business and trade associations and snowballing. A particular approach that was followed was to talk to people who held influential positions, such as professors of management, e-business and computing and to ask then to send e-mails on our behalf to associations of companies that used e-business. After eliminating responses from firms not using e-business or with a large proportion of missing data a final sample of 158 usable questionnaires was used in the analysis for Greece, achieving a response rate of 61.3%.

6.2. UK data collections

From the UK, a sample of 258 companies was selected and the corresponding questionnaires were sent by mails and emails directing the respondents to the online questionnaires, while appointments were also made to personally deliver the questionnaires to the respondents. Questionnaires were also gathered by attending relevant conferences, events relevant to the chosen sectors, and reminder emails were sent where applicable to improve response rates. The business and trade associations yielded relatively low results and it must be noted that the survey was conducted amid the height of the recession that hit the UK in 2009. Personal interaction worked better as a data gathering technique in both countries, but especially in the UK, where a high percentage of the questionnaires were responded to in paper forms. In general the UK has a high e-culture responding faster and more efficiently to online requests and email than in Greece. After eliminating responses due to firms not using e-business or a large proportion of missing data, a final sample of a total of 138 usable questionnaires were used in the UK analysis, achieving a response rate of 53.4%.

A pilot study was also conducted to test questionnaires and 30 questionnaires were obtained from students of the Executive MBA of Kent Business School, University of Kent. These students were also managers in companies that use e-business and thus suitable candidates to be included in the sample. A 71% response rate was achieved, and among the data gathered categorical, nominal and ordinal data were included. A general examination of data was carried out as is usual with the statistical analysis (Molinari and Mingers 2007). The independent variables were grouped into four components Formality, Thoroughness, Participation and Sophistication, while the dependent variables were grouped into the Financial Performance and Non-Financial Performance components.

6.3. Descriptive statistics used and measures of relevant variables

The research study follows an empirical methodology based on the quantitative research approach and using a deductive approach, that is, hypotheses were deduced and then put to the test (Carton and Hofer 2006; Lipitakis 2013).

The data were collected through the means of a survey, hypotheses were generated, and these hypotheses and a theoretical model were tested using statistical analysis on dependent and non-dependent variables derived from obtained survey's data (Lipitakis 2013).

The statistical reliability test was Cronbach's alpha (Coakes, Steed, and Price 2008) and most of the items were in good range indicating that the considered questionnaires had good reliabilities (Lipitakis 2013). The bivariate analysis indicates that there was a significant positive relationship between the independent component of Participation and the dependent component of Financial Performance.

Several performance criteria can be used for measuring e-business success. The constructs used in the proposed model for measuring Financial and Non-Financial performance include the following criteria in e-business success: Performance (Bremser and Chung 2005), Financial Performance (Ghandour, Benwell, and Deans 2010, 2011), E-business success and Website Performance (Ramanathan 2010).

6.4. UK data: case study statistical analysis and findings

In total 138 questionnaires were used from UK companies. The companies' status was PLC, Ltd, Partnership, Cooperative, Sole traders and 'Other'. Almost 70% of the companies were more than 10 years old and more than half the companies are classified as large (250+ employees). More than 80% of the companies do business outside the UK. The sectors the companies do business vary. Most of the respondents who provided details of their sector are providing banking and/or financial services. The distribution of the companies according to their status, age, employee number (company size) and business sector has been recently presented (Lipitakis 2013).

6.4.1. The UK findings

In this section, the results of the questionnaire sample obtained in the UK are discussed. The hypotheses and model developed have been statistically tested. Through the use of statistically valid tests such as explanatory and confirmatory factor analysis, correlation between the independent and dependent variables and regression analysis, the following conclusions have been reached concerning the UK sample:

Participation and Financial Performance have a positive correlation, r = 0.20 p (two-tailed) < .05. Also Participation shares 3% of the variability of Financial Performance. This is considered to be a medium effect. The four main hypotheses are based on the basic statement that there is a relationship between each one of the Phillips' model four constructs in e-business strategy and performance. Our findings clearly indicate that there is a positive relationship between the independent variable of Participation and the dependent variable of Financial Performance.

Formality has a positive correlation with the Non-Financial component. Formality has a positive correlation with Non-Financial performance at r = 0.21 p (two-tailed) < .05. Formality also shares 2% of the variability of the first component of Non-Financial Performance. This is considered to be a medium effect. Our analysis has therefore found a positive correlation between the independent variable of Formality and the dependent variable of Non-Financial Performance. Furthermore, through the application of regression analysis it has been found that the independent variable of Participation can be used to predict the dependent variable of Financial Performance. The independent variable of

	Formality	Thoroughness	Participation	Sophistication		
GR	Financial	Pearson's r	0.565**	0.409**	0.631**	0.679**
		R ²	0.319	0.167	0.398	0.461
		<i>p</i> -value	<.001	<.001	<.001	<.001
	Non-Financial	Pearson's r	0.469**	0.433**	0.524**	0.586**
		R ²	0.219	0.187	0.274	0.343
		<i>p</i> -value	<.001	<.001	<.001	<.001
UK	Financial	Pearson's r	0.041	0.093	0.196*	0.015
		R ²	0.202	0.009	0.038	0.0002
		<i>p</i> -value	.657	.310	.032	.867
	Non-Financial	Pearson's r	0.210*	0.052	0.103	0.130
		R ²	0.044	0.027	0.010	0.016
		<i>p</i> -value	.021	.571	.261	.158

Table 3. Results of the bivariate analysis for the dependent and independent variables of UK and GR.

*Correlation is significant at the 0.05 level (2-tailed).

**Correlation is significant at the 0.01 level (2-tailed).

Formality can be also used to predict the dependent variable of Non-Financial Performance. Bivariate analysis results for dependent and independent variables in the UK case are given in Table 3.

6.4.2. Correlation affected by different variables

The correlations of the *business sectors* dependent to the independent components were also examined separately according to the *number of people employed*. The size of the company was again separated into micro (1–9 employees), small (10–49 employees), medium (50–249 employees) and large (250 + employees) (Table 4).

Table 4. The UK case: correlation coefficients between the dependent and the independent variables found by the explanatory factor analysis by number of people employed.

		Finan	Financial		ancial
		Pearson's r	<i>p</i> -value	Pearson's r	<i>p</i> -value
Formality	Micro	0.213	.296	0.198	.354
	Small	0.390	.135	0.604	.064
	Medium	0.422	.103	-0.956**	.003
	Large	-0.219	.105	-0.050	.780
Thoroughness	Micro	-0.037	.850	0.055	.799
5	Small	-0.109	.688	0.182	.615
	Medium	0.666**	.005	0.871*	.024
	Large	0.134	.316	-0.015	.929
Participation	Micro	0.037	.853	0.120	.577
	Small	0.203	.452	0.278	.436
	Medium	-0.138	.611	-0.280	.590
	Large	0.411**	.002	-0.107	.545
Sophistication	Micro	0.173	.397	0.190	.375
·	Small	0.285	.284	0.449	.193
	Medium	-0.498*	.050	-0.660	.153
	Large	0.005	.971	0.213	.226

*Correlation is significant at the 0.05 level (2-tailed).

**Correlation is significant at the 0.01 level (2-tailed).

Table 5. The UK case: correlation coefficients between the dependent and the independent variables found by the explanatory factor analysis by company status.

		Financial		Non-Fin	ancial
		Pearson's r	<i>p</i> -value	Pearson's r	<i>p</i> -value
Formality	PLC	0.471**	.005	0.502**	.003
	Ltd	0.752**	<.001	0.321	.110
	Partnership	0.352	.494	-0.269	.606
	Cooperative	0.821**	.004	0.661**	.037
	Other	0.295	.121	0.329	.061
Thoroughness	PLC	0.444**	.007	0.477**	.006
5	Ltd	0.364	.080	0.536**	.007
	Partnership	0.738	.094	0.994**	<.001
	Cooperative	0.911**	<.001	0.495	.146
	Other	0.530**	.002	0.424**	.009
Participation	PLC	0.499**	.002	0.501**	.003
	Ltd	0.747**	<.001	0.569**	.002
	Partnership	0.999**	<.001	0.822*	.045
	Cooperative	0.743*	.014	0.774**	.009
	Other	0.683**	<.001	0.593**	<.001
Sophistication	PLC	0.638**	<.001	0.464**	.007
	Ltd	0.839**	<.001	0.517**	.007
	Partnership	0.930**	.007	0.968**	.002
	Cooperative	0.945**	<.001	0.609	.062
	Other	0.202	.292	0.459**	.007

*Correlation is significant at the 0.05 level (2-tailed).

**Correlation is significant at the 0.01 level (2-tailed).

The correlations of the dependent to the independent components were also examined separately according to the company status. It was separated in PLC, Ltd, Partnership, Cooperative, Sole Trader, Other (Table 5).

6.5. Hellenic data: case study statistical analysis and findings

In total 156 questionnaires from Greek companies have been used. The status of the companies was PLC, Ltd, Partnership, Cooperative, Sole Trader and Other. More than 70% of the companies are more than 10 years old and more than half have more than 250 employees putting them in the large company range. Almost 80% of the companies also do business outside Greece. Concerning the sectors most businesses belong to the 'Other' section. The second sector most companies did business in was banking/finance. The distribution of the companies according to their status, age, company size (employee number) and business sector has been recently presented (Lipitakis 2013).

6.5.1. The Hellenic findings

For the distribution of the questionnaires two methods were used. First, an online questionnaire was created. Then email messages were sent to managers requesting that they fill in the questionnaire. Emails were also sent to professional associations and professional bodies with the request that they forward the questionnaire to their members. Second, a number of conferences relevant to our research were selected. Questionnaires were then distributed to the participants. Upon receiving the results, it was observed that there was a large percentage of 'Other' in the sectors section. The respondents had been asked to fill in what type of business their organisation was in, however many did not.

While gathering the data it was observed that in Greece a similar situation to the UK arose concerning the filling in of on-line questionnaire versus the questionnaires filled in during conferences. The percentage of respondents to the online questionnaires was higher than that of the UK, but still relatively small while the response rate to the questionnaires distributed at conferences was very high. One reason for the online response being higher in Greece may be the fact that managers responded to the request from their professional associations, viewing it as a social request as well as professional one. It was considered as a networking event as most professionals know each other in some capacity.

Finally, answering an online questionnaire was also viewed as helping a future colleague with their research and/or project. A high percentage of questionnaires were filled in at conferences. Again in Greece it is considered sociable to fill in a questionnaire when requested face to face, while it is rude to refuse to do so. However, despite being assured about confidentiality and anonymity, participants were reluctant to fill in the name of the organisation or the sector of business. Because the subject of the conferences was known, an estimation was made about the type of business the organisations were in. The majority of organisations belonging to the category 'Other' are estimated to belong in the manufacturing, public sector or education sectors.

Correlations for the Greek sample were again analysed by company size (Table 6) and company status (Table 7). Similarities and differences between the UK and Greek sample correlations are given in Table 8. Note that Participation and Financial Performance which is found to be positively correlated in both the UK and Greek sample differ in size, variability and effect.

The proposed model and hypothesis have been statistically tested by using explanatory and confirmatory factor analysis, correlation between independent and dependent variables and regression analysis. Through the application of regression analysis it has been found that the independent variables of Formality, Thoroughness, Participation and Sophistication can be used for predicting the dependent variables of Financial and Non-Financial performance.

Reliability and validity of findings can be justified by the corresponding regression analyses and analysis of variance (ANOVA) numbers. Indicatively we state that the reliability tests for the basic components gave the following Cronbach's alpha values.

		Financial		Non-Fin	ancial
		Pearson's r	<i>p</i> -value	Pearson's r	<i>p</i> -value
Formality	PLC	0.471**	.005	0.502**	.003
· onnunty	Ltd	0.752**	<.001	0.321	.110
	Partnership	0.352	.494	-0.269	.606
	Cooperative	0.821**	.004	0.661**	.037
	Other	0.295	.121	0.329	.061
Thoroughness	PLC	0.444**	.007	0.477**	.006
5	Ltd	0.364	.080	0.536**	.007
	Partnership	0.738	.094	0.994**	<.001
	Cooperative	0.911**	<.001	0.495	.146
	Other	0.530**	.002	0.424**	.009
Participation	PLC	0.499**	.002	0.501**	.003
	Ltd	0.747**	<.001	0.569**	.002
	Partnership	0.999**	<.001	0.822*	.045
	Cooperative	0.743*	.014	0.774**	.009
	Other	0.683**	<.001	0.593**	<.001
Sophistication	PLC	0.638**	<.001	0.464**	.007
•	Ltd	0.839**	<.001	0.517**	.007
	Partnership	0.930**	.007	0.968**	.002
	Cooperative	0.945**	<.001	0.609	.062
	Other	0.202	.292	0.459**	.007

Table 6. The Hellenic case: correlation coefficients between the dependent and the independent variables found by the explanatory factor analysis by company status.

*Correlation is significant at the 0.05 level (2-tailed).

**Correlation is significant at the 0.01 level (2-tailed).

Table 7. Reliability	y and validity	findings: indicativ	e regressior	analyses	and ANOVA	numbers
----------------------	----------------	---------------------	--------------	----------	-----------	---------

Components	Cronbach's alpha/UK	Cronbach's alpha/Greece
Formality	0.942	0.966
Thoroughness	0.573	0.803
Participation	0.904	0.932
Sophistication	0.838	0.839
Financial expectations	0.919	0.886
Non-Financial expectations	0.957	0.897

The ANOVA shows that the regression is significant beyond the 0.001 level with *F*-values 25.372 (Financial Performance) and 18.495 (Non-Financial Performance).

The ANOVA application shows that the required prerequisites are fulfilled in order to reject the null hypothesis H0 (i.e. there is no relationship between Formality and Non-Financial Performance in businesses which use e-business strategy) and conclude that all the independent variables are related to Financial and Non-Financial Performance. Further analytical results of statistical analysis have been presented in a related research study (Lipitakis 2013).

6.6. On several causes for the difference of findings of the UK and Greece

Various factors may explain the differences observed between the findings from the UK and Greece with differences in the economic climate and e-business intensity appearing likely to be contributing factors. It has previously been stated that strategy planning added value to organisations, and that firm performance was positively influenced by strategic planning (Miller and Cardinal 1994; Whittington and Cailluet 2008; Rigby and Bilodeau 2009).

In this research work the findings suggest that this is also valid in the fast-paced e-business environment and that the strategic planning variables examined all add value to the companies when applied in the formulation and implementation of e-business strategic plans. This was found

		Financial		Non-Fina	ancial
		Pearson's r	<i>p</i> -value	Pearson's r	<i>p</i> -value
Formality	Micro	0.699**	<.001	0.383	.117
	Small	0.494	.052	0.342	.194
	medium	0.744**	.006	0.776**	.008
	Large	0.653**	<.001	0.493**	<.001
Thoroughness	micro	0.742**	<.001	-0.127	.614
5	small	0.567*	.022	0.359	.172
	medium	0.411	.145	0.429	.216
	Large	0.278*	.030	0.492**	<.001
Participation	micro	0.832**	<.001	0.240	.337
	Small	0.602*	.014	0.537*	.032
	medium	0.814**	<.001	0.826**	.003
	Large	0.616**	<.001	0.538**	<.001
Sophistication	Micro	0.771**	<.001	0.299	.228
•	Small	0.899**	<.001	0.679**	.004
	medium	0.760*	.029	0.595	.119
	Large	0.657**	<.001	0.637**	<.001

Table 8. The Hellenic case: correlation coefficients between the dependent and the independent variables found by the explanatory factor analysis by number of people employed.

*Correlation is significant at the 0.05 level (2-tailed).

**Correlation is significant at the 0.01 level (2-tailed).

to be true across all variables examined in the Greek sample, whereas in the UK the results only supported the effect of a subset of the independent variables.

The findings from the current research in Greece suggest that companies that implement effective business strategic planning perform better than the companies that do not. In the UK it appears that the businesses implementing more refined e-business strategic planning do not experience an increase in Financial and Non-Financial performance to the same extent as those in Greece. Note that a possible reason for the observed differences between the UK and Greek results is that Greece is in very difficult economic conditions currently in the period 2009-2014. Due to the highly competitive pressure in Greece in an extended recession period since 2009 with a resultant tough trading environment (National Statistics Service of Greece 2012), the adoption of e-business by firms, companies and organisations with good e-business strategy planning may lead to significant competitive advantage, which is reflected in their Financial and Non-Financial performance. Over the same period the UK experienced a mild recession, but was in a period of growth at the time the data were gathered with trading conditions far less extreme than in Greece. Consequently, there has been relatively less competition for business. This may therefore reflect that in more competitive environments implementation of Formality, Participation, Sophistication and Thoroughness to e-business strategy planning may have a greater impact on performance than in less challenging environments.

In the UK, the majority of companies may be using refined e-business strategy planning, resulting in reduced competitive advantage. In Greece, a significantly lower e-business intensity country, there may be a larger differential between how companies implement e-business strategy planning resulting in a greater effect on company performance. It should be noted that in the UK many companies are already exploiting e-business to gain access to markets across the EU and globally. Greek companies have greater scope to expand into these markets with effective use of e-business. Thus, those that effectively plan to utilise an e-business strategy to allow them to exploit these markets experience a performance advantage.

A difference in the outlook of UK and Greek small and medium enterprises concerning the importance of e-business for the future of their company may also explain observed differences between the two countries results. In both the UK and Greek samples significant proportion of the respondents (44.9% in both samples) represented small and medium companies (Lipitakis 2013).

7. The LP research model: analysis and performance

7.1. Introductory remarks

The results of the questionnaire sample obtained in Greece have been thoroughly analysed and the considered hypothesis and model, which have been developed in the previous sections have been statistically tested. Through the use of statistically valid tests such as explanatory and confirmatory factor analysis, correlation between the independent and dependent variables and regression analysis, the following conclusions have been reached concerning the Greek sample. Furthermore, through the application of regression analysis it has been found that the independent variables of Formality, Thoroughness, Participation and Sophistication can be used to predict the dependent variable of Financial Performance. The independent variables of Formality, Thoroughness, Participation and Sophistication the dependent variable of Non-Financial Performance.

The regression analysis revealed the presence of partial mediators for some of the independent variables. Furthermore, on further analysis, it was discovered that Formality was partially mediated by Sophistication and Participation to Financial Performance, and that Formality was partially mediated by Sophistication to Non-Financial Performance. The analysis showed a positive relation-ship between a formal strategic planning approach for e-business strategy and Financial and Non-Financial Performance. Not only does a formal plan not hinder performance in an e-business strategic plan) is not a detriment to the performance of an organisation in a rapidly changing environment. On the contrary, a positive relationship to performance as measured by both Financial and Non-Financial parameters was found. This could be explained by the fact that organisations need strategic planning even in environments with rapidly changing competitive settings such as e-business.

Formality was also found to be partially mediated by Sophistication and Participation with Financial Performance. When the organisation takes on board the characteristics of sophistication and when management feel that they participate in the planning and implementation of e-business strategy, then Financial Performance is positively affected. Formality was also found to be partially mediated by Sophistication regarding Non-Financial Performance. This may point towards the fact that the characteristics of Sophistication improve Non-Financial as well as Financial Performance.

7.2. Factor analysis and principal component analysis

In this section, the correlation coefficients between the dependent and independent variables of our e-business model found by the explanatory factor analysis by company status are indicatively presented. Researchers who have laid the foundations of modern strategy management (Drucker 1954; Andrews 1987) are in agreement that the understanding of goals and objectives is fundamental to management and the process used to measure their accomplishment in the organisation. In performance measurement research, Hofer and Schendel (1978) also support performance as an indicator of successful strategy management. However, after a review of the literature, researchers tend to agree that there is no fixed concept of organisational performance (Carton and Hofer 2006). For the purpose of this study suitable performance metrics have been identified by making a comparison of the most relevant performance studies.

Performance measurement has moved from the presentation of quantitative and qualitative measures to the better understanding of salient measurement system attributes (Chenhall 2005). A stream of this debate had focused on the use of primary and secondary performance measures (Atkinson, Waterhouse, and Wells 1997) and the diversity of measurement (Henri 2006). A considerable effort has been devoted into enhancing the practical and theoretical insights of innovative performance measurement that provide a more integrated approach linking operations to corporate strategy (Phillips 2007).

The question of whether strategic performance measurement adds value beyond the one created by the traditional performance measurement is one that has caused mush debate in recent years (*names deleted to maintain the integrity of the review process*). The determinants of effective strategic performance measurement systems have long been of central interest to strategic management researchers (Pun and White 2005), but blind spots still exist due to cognitive limitations (Ittner and Larcker 2003).

This research study used a single timeframe and many and varied organisational capabilities and factors related to benefits of e-business could change over time and the time dependency may be of critical importance (Lee, Lee, and Lin 2007). The proposed e-business model may increase the performance of organisations through the mediation of strategic planning parameters on e-business strategy management and can be used by both practitioners for increasing organisations' performance and scholars for academic purposes as well as for developing e-business strategic management and strategic planning tools.

7.3. Correlations between independent and dependent variables

The correlation coefficients are commonly used measures of sizes of certain effects. There was a positive correlation observed between the dependent component of Non-Financial Performance and the independent components of Formality with positive correlation.

In the UK case the correlations of dependent to the independent components were examined by the explanatory and confirmatory factor analysis according to company status (PLC, Ltd, Partnership, Cooperative, Sole Trader, Other) and number of people employed. Two significant positive correlations were found in the UK case. The first was between Financial Performance and Participation, while the second between Non-Financial Performance and Formality. A positive correlation was found between the dependent component of Non-Financial Performance and the independent component of Formality with positive correlation (Lipitakis 2013).

In the Greek case bivariate correlations were computed in order to determine the strengths and directions (positive or negative) of the association between dependent (Financial Performance and Non-Financial Performance) and independent components (Formality, Thoroughness, Participation and Sophistication). In the Greek case the correlations between the two dependent variables and all the independent variables appear to be higher and highly significant. The components Formality, Participation, Thoroughness, Sophistication all have large and highly significant correlations with Financial and Non-Financial Performance. Note that in the UK case only Participation and Financial Performance, and Formality and Non-Financial Performance had significant correlations with these correlations being of lower magnitude and a lower level of significance than the equivalent correlations in the Greek case (Lipitakis 2013).

The Participation, Sophistication, Financial Expectations and Non-Financial Expectations including graphs of the correlation between independent and dependent variables (the pilot study contains a computation of Cronbach's alpha and factor analysis for Formality and Thoroughness). The existence or non-existence of correlations is depicted in Figures 1 and 2.

The nature of empirical data used in such measure studies may be the cause of various limitations due to the random errors inherent in this type of data, and to the characteristics of the selected samples upon which the considered hypotheses are tested. Although the firm performance is not easily measurable, efficient measurements of financial and operational dimensions are expected to provide more accurate e-business performance measurement (Coltman, Devinney, and Midgley 2007). The e-business performance is a time-dependent problem and the computation of the best performance measures in the fields of strategic management, e-business and entrepreneurship, finance and organisational theory is a challenging field of research (European Commission 2004; Coltman, Devinney, and Midgley 2008). Further complementary information concerning the statistical analysis, performance, extension and applications of the proposed e-business model can be found in a recent related research work (Lipitakis 2013).



Figure 1. Correlations between independent variables and Financial Performance.



Figure 2. Correlations between independent variables and Non-Financial Performance.

7.4. On the performance of the proposed research model answers to the basic research questions

In this section the research questions presented in the introduction are synoptically answered and the impact of the turbulent economic time in the UK and Greece is discussed. The managerial implications in the UK and Greece, and the proposed model are examined as a managerial tool. First, we remind the following basic research questions:

Research Questions 1 and 2: Was there a relationship between e-business strategy planning and performance, and what was the direction of the relationship?

The statistical analysis showed that a relationship between e-business strategy planning and performance existed, and that the direction of the relationship in both the UK and in Greece was positive. A stronger relationship was found in the Greek data, whereas in the UK data only certain of the constructs showed a positive relationship.

A review of the literature had already indicated a link with certain aspects of strategy planning. Coltman, Devinney, and Midgley (2007, 2008) asserted that e-business can significantly contribute to performance and may enable businesses to outperform competition. Johnston, Wade, and Maclean (2007) revealed that firms that adopted e-business strategy reaped financial performance benefits. Caniato et al. (2009) affirmed that businesses believe that e-business is an important issue and that businesses that invest in it will improve their performance in the future. The present study and its statistical analysis lend further support to the idea that e-business strategy planning can positively impact performance. This study included four aspects of Formality, Participation, Thoroughness and Sophistication as variables in e-business strategy planning, which had not previously been examined together in this context in the earlier empirical literature.

Research Question 3: Are there any similarities between e-business strategy planning and performance in the UK and Greece?

The similarities and differences between e-business strategy planning and performance in the UK and Greece have been extensively discussed in Lipitakis (2013). Certain differences were found to exist between the correlation of e-business strategy planning in Greece and in the UK. In both the UK and Greece, Formality and Participation had a positive correlation with at least one of Financial or Non-Financial Performance. In Greece, all of the constructs studied had a positive correlation with both Financial and Non-Financial Performance, whereas in the UK, Sophistication and Thoroughness did not.

7.5. The model as a benchmarking tool and applications in a wider context

Benchmarking in both the UK and in Greece is one of the four most popular management techniques. The LP model developed in this paper could be used as a benchmarking tool to measure e-business strategy planning and performance. This would enable organisations to use the results to benchmark their organisation against their own sector/industry. This would help an organisation identify areas for improvement and measure how well it is doing in comparison with the sector leaders. If there is a gap between an organisation and its peer steps may be taken to improve the situation. In view of the complex and rapidly changing environment of e-business, managers should benefit from models and tools to evaluate their e-business strategy planning. A business can use this model to examine its own capabilities and examine if any e-business strategy planning parameters need to be adjusted in order to optimise its performance (Lipitakis 2013).

Note that the proposed model is expandable in the sense that several variables can be added in order to improve e-business strategic planning and performance management of e-business and organisations. In this case, which is currently under investigation, the new enriched multivariable model's corresponding numerical implementation/experimentation and statistical analysis should be thoroughly carried out demonstrating how e-business strategic planning and performance

management have positive relationship with both Financial and Non-Financial Performance of organisations. The study of several classes of multivariable models and their applications is an interesting topic to be included in future research works.

The proposed LP e-business model can be applied to a wide spectrum of applications. The research work objectives, findings and its extensions, in particular the e-business performance evaluation and strategy management methodologies, may be combined with an adaptive algorithmic approach (Lipitakis and Lipitakis 2012) to impact on wider areas of business (and e-business), economics and management, either directly or indirectly. For example, applied computing science and adaptive algorithmic theory, where e-business performance may be evaluated by the use of adaptive algorithms and perturbation techniques and e-business problems and strategy management methodologies, may be algorithmically treated. The algorithmization of the model as a whole, or in part, allows it to be transferable and applied to wider theoretical areas. This opens up a whole host of scientific fields and research topics to which the research may be applied. Indicatively, among them are, digital information management and computer modelling and simulation. The model may also be adapted for knowledge management and e-learning, by adaptive computational modelling for solving e-business and knowledge management problems.

Business intelligence, financial engineering business intelligence and financial engineering, are also fields that the proposed research work can be used. The research could also be used in health information management where it could be applied to suit the purposes of e-health services. The e-business strategy planning and firm performance aspect of this paper could also find applications in enterprise information systems, and e-government, as it could provide an alternative strategic managerial approach to these fields of research. Aspects of e-business and strategic management can also be applied in the field of computing in the global information technology.

8. Conclusions and future research work

Coming from a strategy planning perspective, the present research work has attempted to develop a clearer view of how e-business strategic planning may affect Financial and Non-Financial performance in organisations. The present research adds to the existing literature, as it has been observed by many researchers (Coltman, Devinney, and Midgley 2007, 2008; Koellinger 2008; Pai et al. 2008) that in recent years there is a paucity of empirical work in the area of e-business strategy planning. The intended purpose of this research work was to explore whether a model which was used for strategy planning could be applied to e-business strategy planning, and whether the model would be valid in different environments such as different countries.

A conceptual model was constructed and quantitative research methods were used to test the four hypotheses. Our proposed LP e-business model was tested in two EU countries, the UK and Greece. The conclusions of this research study, including numerical results and statistical analysis, showed that in both countries Participation had a positive relationship with Financial Performance, and Formality had a positive relationship with Non-Financial Performance. In Greece, all of the independent variables of Formality, Participation, Sophistication and Thoroughness were found to have a positive relationship with Financial and Non-Financial Performance. In the UK, Participation had a positive relationship with Financial Performance. Non-Financial Performance. In the UK, Participation had a positive relationship with Financial Performance, and Formality had a positive relationship with Financial Performance, and Formality had a positive relationship with Financial Performance.

In Greece, all of the independent variables of Formality, Participation, Sophistication and Thoroughness were found to have a positive relationship with Financial and Non-Financial Performance. In the UK, Participation had a positive relationship with Financial Performance, and Formality had a positive relationship with Non-Financial Performance. The model was also found to have applicability in both countries in which it was tested, each having differing e-business intensity and economic conditions. It is therefore reasonable to assume that this research could have wider application in other countries. It may also have wider application in other sectors. This research study brought together elements of e-business strategy planning, strategy planning and performance management and demonstrated how e-business strategy planning components have a positive relationship with Financial and Non-Financial Performance. It also showed that this model is extendable and valid in countries other than the UK, thus being able to be easily adapted to and used in other national environments. E-business strategy planning is an important part of the strategy process. In the turbulent environment of today, speed and adaptability are needed to cope with modern challenges. New ways must be found to apply tried and trusted frameworks (Porter 2001). In this context, our proposed LP e-business model may contribute to future ebusiness strategy planning of businesses and organisations, managers should consider applying the model to their e-business strategy planning to improve their company's performance.

It has not escaped our notice that the proposed e-business strategy planning methodologies can be applied in a wider spectrum of applications, such as enterprise information systems, computing information technology, financial engineering business intelligence, digital information management, knowledge management and e-learning services. These will be interesting challenging research subjects of future research work.

Acknowledgements

The authors wish to express their thanks to referees for their constructive criticisms and remarks.

Disclosure statement

No potential conflict of interest was reported by the authors.

Notes on contributors

Alexandra Lipitakis is a Postdoctoral Researcher in E-Business Performance and Strategy Management. She has published more than 20 research papers on these and related subjects. She is member of SMS (Strategic Management Society), IEEE and Editor of LEA Publishers, Athens, Hellas.

Paul Phillips is Professor of Strategic Management in Kent Business School (KBS), University of Kent and Head of Strategy and International Business Group in KBS. He was Director of KBS, has held academic appointments at Cardiff Business School and University of Surrey, and was visiting Professor in International Business School, Beijing Foreign Studies University, Beijing, China.

References

Alberts, B. 2011. "Comparing BM Methods: Creating and Applying a Comparison Framework for Meta-Business Models." 14th Twente Students Conference on IT, Enschede, Netherlands, January 21.

Al-Debei, M., and Avison, D. 2010. "Developing a Unified Framework of the Business Model Concept." European Journal of Information Systems 19: 359–376.

Andrews, K. R. 1987. The Concept of Corporate Strategy. Homewood, IL: Richard.

Ash, C. G., and J. M. Burn. 2003. "A Strategic Framework for the Management of ERP Enabled E-Business Change." European Journal of Operational Research 146: 374–387.

Atkinson, A. A., J. Waterhouse, and R. Wells. 1997. "A Stakeholder Approach to Strategic Performance Measurement." Sloan Management Review 38 (3): 25–37.

Baden-Fuller, C., and V. Mangematin. 2013. "Business Models: A Challenging Agenda." Strategic Organization 11 (4): 418– 427.

Baden-Fuller, C., and M. S. Morgan. 2010. "Business Models as Models." Long Range Planning 43: 156–171.

- Bate, P., R. Khan, and A. Pye. 2000. "Towards a Culturally Sensitive Approach to Organization Structuring: Where organization Design Meets Organizational Development." Organization Science 11: 197–211.
- Baum, J., and S. Wally. 2003. "Strategic Decision Speed and Firm Performance." Strategic Management Journal 24: 1107–1129.

Beynon-Davies, P. 2004. E-Business. Basingstoke, UK: Palgrave MacMillan.

Boris, E. T., and M. Kopczynski Winkler. 2013. "The Emergence of Performance Measurement as a Complement to Evaluation among U.S. Foundations." New Directions for Evaluation 137: 69–80. doi:10.1002/ev.20047.

- Bracker, J. S., and J. N. Pearson. 1986. "Planning and Financial Performance of Small, Mature Firms." Strategic Management Journal 7: 503–522.
- Breene, R. T. S., P. F. Nunes, and W. E. Shill. 2007. "The Chief Strategy Officer." Harvard Business Review 85: 85-93.
- Bremser, W. G., and Q. B. Chung. 2005. "A Framework for Performance Measurement in the E-Business Environment." Electronic Commerce Research and Applications 4: 395–412.
- Brynjolfsson, E., and L. M. Hitt. 2003. Computing Productivity: Firm-Level Evidence (working paper no. 4210–01), Cambridge, MA: MIT Sloan School of Management.
- Bryson, J. M. 1988. "A Strategic Planning Process for Public and Non-Profit Organizations." Long Range Planning 21 (1): 73–81.
- Caniato, F., R. Cagliano, M. Kalchschmidt, R. Golini, and G. Spina. 2009. "Evolutionary Patterns in e-business Strategy." International Journal of Operations & Production Management 29: 921–945.
- Carton, R. B., and C. W. Hofer. 2006. Measuring Organizational Performance Metrics for Entrepreneurship and Strategic Management Research. Cheltenham, UK: Edward Elgar.
- Cavalcante, S., P. Kesting, and J. Ulhoi. 2011. "Business Model Dynamics and Innovation: (re)Establishing the Missing Linkages." *Management Decision* 49 (8): 1327–1342.
- Chaffey, D. 2009. Internet Marketing Strategy, Implementation and Practice. Essex: Pearson Education.
- Chatterjee, D., R. Grewal, and V. Sambamurthy. 2002. "Shaping up for e-Commerce: Institutional Enablers of the Organizational Assimilation of Web Technologies." MIS Quarterly 26 (2): 65–89.
- Chenhall, R. H. 2005. "Integrative Strategic Performance Measurement Systems, Strategic Alignment of Manufacturing, Learning and Strategic Outcomes: An Exploratory Study." *Accounting, Organisations and Society* 30: 395–422.
- Clark, C. 2010. E business Strategic Planning. http://keycustomdesign.com/resources.
- Coakes, S. J., L. Steed, and J. Price. 2008. SPSS Version 15.0 for Windows: Analysis without Anguish. Milton, QLD: John Wiley & Sons Australia.
- Coltman, T., T. M. Devinney, A. Latukefu, and D. Midgley. 2001. "E-Business: Revolution, Evolution or Hype?" California Management Review 44 (1): 57–86.
- Coltman, T. R., T. M. Devinney, and D. F. Midgley. 2007. "E-Business Strategy and Firm Performance: A Latent Class Assessment of the Drivers and Impediments to Success." Journal of Information Technology 22: 87–101.
- Coltman, T., T. M. Devinney, and D. F. Midgley. 2008. "The Value of Managerial Beliefs in Turbulent Environments: Managerial Orientation and E-business Advantage." *Journal of Strategy and Management* 1 (2): 181–197.
- Coltman, T., T. M. Devinney, D. Midgley, and S. Venaik. 2008. "Formative or Reflective Scales: Two Applications of Erroneous Measurement." Journal of Business Research 61 (12): 1250–1262.
- Coltman, T., T. M. Devinney, D. F. Midgley, and S. Veniak. 2008. "Formative Versus Reflective Measurement Models: Two Applications of Formative Measurement." *Journal of Business Research* 61 (12): 1250–1262.
- Demil, B., and X. Lecocq. 2010. "Business Model Evolution: In Search of Dynamic Consistency." Long Range Planning 43: 227–246.
- Dibrell, C. C., J. Craig, and E. Hansen. 2011. "The Impact of Managerial Attitudes Toward the Natural Environment in Growing Versus Mature of." Journal of Small Business Management 49: 467–489.
- Dibrell, C., J. B. Craig, and D. O. Neubaum. 2014. "Linking the Formal Strategic Planning Process, Planning Flexibility and Innovativeness to Firm Performance." Journal of Business Research 67 (9): 2000–2007.
- Drucker, P. 1954. The Practice of Management. New York: Harper and Row.
- European Commission. 2004. The European e-business Report. Luxembourg: Office for Official Publ. of the European Communities, 234–237.
- Fahey, L., R. Srivastava, J. S. Sharon, and D. E. Smith. 2001. "Linking e-business and operating processes: The role of knowledge management." *IBM Systems Journal* 40 (4): 889–907.
- Falshaw, J. R., K. W. Glaister, and E. Tatoglu. 2006. "Evidence on Formal Strategic Planning and Company Performance." Management Decision 44 (1): 9–30.
- Forrester Research. 2012. US Online Retail Forecast 2011 to 2016 eCommerce Tops \$200 Billion, in 2011. https://www. forrester.com/US+Online+Retail+Forecast+2011+To+2016/fulltext/-/E-RES60672?docid=60672.
- Gambardella, A., and A. M. McGahan. 2010. "Business Model Innovation: General Purpose Technologies and their Implications for Industry Structure." Long Range Planning 43: 262–271.
- Gerbing, D. W., J. G. Hamilton, and E. B. Freeman. 1994. "A Large-Scale Second-Order Structural Equation Model of the Influence of Management Participation on Organizational Planning Benefits." *Journal of Management* 20 (4): 859–885.
- Ghandour, A., G. Benwell, and K. Deans. 2010. "Measuring e-Commerce Website Success." Interdisciplinary Journal of Contemporary Research in Business 1 (12): 21–42.
- Ghandour, A., G. Benwell, and K. R. Deans. 2011. "Measuring the performance of eCommerce Websites An Owner's Perspective." Pacific Asia Journal of the Association for Information Systems 3 (1): 1–27.
- Glaister Keith, W., D. Omer, T. Ekrem, D. Mehmet, and Z. Selim. 2008. "A Causal Analysis of Formal Strategic Planning and firm Performance Evidence from an Emerging Country." *Management Decision* 46 (3): 365–391.
- Gottschalk, P. 2006. E-business Strategy, Sourcing, and Governance. Hershey, PA: Idea Group.
- Grant, R. M. 2003. "Strategic Planning in a Turbulent Environment: Evidence from the Oil Majors Author(s)." Strategic Management Journal 24 (6): 491–517.

- Haber, S., and A. Reichel. 2005. "Identifying Performance Measures of Small Ventures-The Case of the Tourism Industry." Journal of Small Business Management 43 (3): 257–286.
- Hackbarth, G., and W. J. Kettinger. 2004. "Strategic Aspirations for Net-Enabled Business." European Journal of Information Systems 13 (4): 273–285.
- Henri, J. F. 2006. "Organizational Culture and Performance Measurement Systems Accounting." Organisations and Society 31: 77–103.
- Hernández, B., J. Jiménez, and M. J. Martín. 2009. "Key Website Factors in e-business Strategy." International Journal of Information Management 29: 362–371.
- Hofer, C. W., and D. Schendel. 1978. Strategy Formulation: Analytical Concepts. St. Paul, MN: West Publishing.
- Ittner, C. D., and D. Larcker. 2003. "Coming Up Short on Non-Financial Performance Measurement." Harvard Business Review 28: 88–95.
- Jarzabkowski, P., and J. Balogun. 2009. "The Practice and Process of Delivering Integration through Strategic Planning." Journal of Management Studies 46 (8): 1255–1288.
- Johnson, G., A. Langley, L. Melin, and R. Whittington. 2007. *Strategy as Practice: Research Directions and Resources*. Cambridge: Cambridge University Press.
- Johnson, G., L. Melin, and R. Whittington. 2003. "Micro Strategy and Strategizing: Towards an Activity-Based View?" Journal of Management Studies 40 (1): 3–22.
- Johnston, D. A., M. Wade, and R. Maclean. 2007. "Does E-Business Matter to SMEs? A Comparison of the Financial Impacts of Internet Business Solutions on European and North American SMEs." Journal of Small Business Management 45: 354–361.
- Kaplan, R. S., and D. Norton. 1993. "Putting the Balanced Scorecard to Work." Harvard Business Review 71 (5): 134-147.
- Ketokivi, M., and X. Castañer. 2004. "Strategic Planning as an Integrative Device." Administrative Science Quarterly 49: 337–365.
- Koellinger, P. 2008. "The Relationship Between Technology, Innovation and firm Performance-Empirical Evidence from ebusiness in Europe." Research Policy 37: 1317–1328.
- Lee, C. P., G. G. Lee, and H. F. Lin. 2007. "The Role of Organizational Capabilities in Successful e-business Implementation." Business Process Management Journal 13: 677–693.
- Lim, J. H., V. J. Richardson, and T. L. Roberts. 2004. "Information Technology Investment and firm Performance: A Meta-Analysis." Proceedings of the 37th Hawaii International Conference on Systems Sciences, 1–11, Big Island, Hawaii, January 5–8.
- Lipitakis A. 2013. "E-Business Strategy Planning and Performance: A Comparative Study of the UK and Greece Strategic Management of E-Business and Performance Evaluation." Ph.D. Thesis, KBS, University of Kent at Canterbury, England.
- Lipitakis, A., and E. A. E. C. Lipitakis. 2012. "On the e-Valuation of Certain e-Business Strategies on Firm Performance by Adaptive Algorithmic Modelling: An Alternative Strategic Managerial Approach." Journal of Computer Technology and Application (JCTA) 3 (1): 38–46.
- Lipitakis, A., and E. A. E. C. Lipitakis. 2013. "E-Business Performance and Strategy Planning E-valuation Based on Adaptive Algorithmic Modelling Methods: Critical Factors Affecting e-valuation in Strategic Management Methodologies." Universal Journal of Management 2: 981–991.
- Mahmood, M. A., R. Kohli, and S. Devaraj. 2004. "Measuring Business Value of IT in e-business Environment." Journal of Management Information Systems 21 (1): 11–16.
- Miller, C. C., and L. B. Cardinal. 1994. "Strategic Planning and Firm Performance: A Synthesis of More than two Decades of Research." Academy of Management Journal 37: 1649–1665.
- Mintzberg, H. 1994. The Rise and Fall of Strategic Planning: Reconceiving the Roles for Planning, Plans, Planners. New York: Free Press, 458.
- Molinari, C., and J. Mingers. 2007. "An Evaluation of the Limitation of and Alternatives to, the Co-Plot Methodology." Journal of Operational Research Society 58: 874–886.
- National Statistical Service of Greece. 2012. Greece in Figures 2014. Statistical Information and Publication Division, Hellenic Statistical Authority. www.statistics.gr, www.tradingeconomics.com/Greece/gdp-gr.
- Nordqvist, M., and L. Melin. 2008. "Strategic Planning Champions: Social Craft persons, Artful Interpreters and Known Strangers." Long Range Planning 41: 326–344.
- ONS. 2011. Construction Statistics Annual 2011. London: Office for National Statistics.
- Osterwalder, A., and Y. Pigneur. 2002. "An eBusiness Model Ontology for Modeling eBusiness." In the Proceedings of the 15th Bled Electronic Commerce Conference – eReality: Constructing the eEconomy, Bled, Slovenia, June 17–19, 2002, 75–91.
- Osterwalder, A., and Y. Pigneur. 2005. "Clarifying Business Models: Origins, Present and Future of the Concept." Communications of the Association for Information Systems 16: 1–25.
- Osterwalder, A., and Y. Pigneur. 2010. Business Model Generation: A Handbook for Visionaries, Game Changers, and Challengers. Hoboken, NJ: John Wiley & Sons.
- Pai, J. C., and C. H. Yeh. 2008. "Factors Affecting the Implementation of E-Business Strategies: An Empirical Study in Taiwan." Management Decision 46: 681–690.

- Pateli, A. G., and G. M. Giaglis. 2004. "A Research Framework for Analysing e-Business Models." European Journal of Information Systems 13: 302–314.
- Pearce, J. A. II, E. B. Freeman, and R. B. Robinson Jr. 1987. "The Tenuous link between Formal Strategic Planning and Financial Performance." Academy of Management Review 12 (4): 658–675.
- The Pennsylvania State University. 2008. Strategic Indicators: Measuring and Improving University Performance, Current edition at http://www.psu.edu/president/pia/indicators/index.htm.
- Petrovic, O., C. Kittl, and R. D. Teksten. 2001. "Developing Business Models for e-Business." International Conference on Electronic Commerce 2001, Vienna, October 31–November 4.
- Phillips, P. A. 1996. "Strategic Planning and Business Performance in the Quoted UK Hotel Sector." International Journal of Hospitality Management 15: 347–362.
- Phillips, P. A. 2003. E-Business Strategy: Text and Cases. Maidenhead: McGraw-Hill.
- Phillips, P. A. 2007. "The Balanced Scorecard and Strategic Control: A Hotel Case Study Analysis." The Service Industries Journal 27 (6): 731–746.
- Phillips, P. 2010. "Organization Flexibility: The Seven Factors of Success in e-Business Environments." Procs of HERCMA 2009 Conference, Athens, Greece, September 24–26.
- Piercy, N. F., and N. A. Morgan. 1994. "The Marketing Planning Process: Behavioural Problems Compared to Analytical Techniques in Explaining Marketing Plan Credibility." Journal of Business Research 29: 167–178.
- Porter, M. 2001. "Clusters of Innovation: Regional Foundations of US Competitiveness, Strategy and the Internet." Harvard Business Review 79 (3): 63–78.
- Pun, K. F., and A. S. White. 2005. "A Performance Measurement Paradigm for Integrating Strategy Formulation: A Review of Systems and Frameworks." International Journal of Management Reviews 7: 49–71.
- Ramanathan, R. 2010. "E-Commerce Success Criteria: Determining which Criteria count most." Electronic Commerce Research Journal 10 (2): 191–208.
- Rigby, D., and B. Bilodeau. 2009. Management Tools and Trends 2009. Boston, MA: Bain.
- Riggins, F. J., and S. Mitra. 2007. "An e-valuation Framework for Developing net Enabled Business Metrics Through Functionality Interaction." Journal of Organizational Computing and Electronic Commerce 17: 175–203.
- Robinson, P. R., and J. A. Pearce. 1988. "Planned Patterns of Strategic Behaviour and their Relationship to Business-Unit Performance." *Strategic Management Journal* 9: 43–60.
- Rudd, J. M., G. E. Greenley, A. T. Beatson, and I. N. Lings. 2008. "Strategic Planning and Performance: Extending the Debate." Journal of Business Research 61: 99–108.
- Rust, R. T., and P. K. Kannan. 2003. "E-Service: A New Paradigm for Business in the Electronic Environment." Communications of the ACM 46 (6): 36–42.
- Sanders, N. R. 2007. "An Empirical Study of the Impact of E-Business Technologies on Organizational Collaboration and Performance." Journal of Operations Managements 25: 1332–1347.
- Shrader, C. B., L. Taylor, and D. Dalton. 1984. "Strategic Planning and Organizational Performance: A Critical Appraisal." Journal of Management 10: 149–171.
- Smith, W. K., A. Binns, and M. L. Tushman. 2010. "Complex Business Models: Managing Strategic Paradoxes Simultaneously." Long Range Planning 43: 448–461.
- Smith, J. L., and J. C. Linder. 2005. "The Power of Business Models." Business Horizons 48 (3): 199-207.
- Song, M., S. Im, H. V. D. Bij, and L. Z. Song. 2011. "Does Strategic Planning Enhance or Impede Innovation and firm Performance?" Journal of Product Innovation Management 28 (4): 503–520.
- Sriram, V., and R. Stump. 2004. "Information Technology Investment in Purchasing: An Empirical Investigation of Communications, Relationships and Performance Outcomes." Omega 32: 41–55.
- Teece, D. J. 2010. "Business Models, Business Strategy and Innovation." Long Range Planning 43: 172–194.
- Upadhaya, B., R. Munir, and Y. Blount. 2014. "Association between Performance Measurement Systems and Organisational Effectiveness." International Journal of Operations & Production Management 34 (7): 853–875.
- Venkatraman, N. 1994. "IT-Enabled Business Transformation: From Automation to Business Scope Redefinition." Sloan Management Review 35 (2): 73.
- Vering, R., and R. Matthias. 2002. The e-business Workplace: Discovering the Power of Enterprise Portals. New York: John Wiley & Sons.
- Whittington, R., and K. Cailluet. 2008. "The Crafts of Strategy: Introduction to Special Issue." Long Range Planning 41 (3): 241–247.
- Wirtz, B. W., O. Schilke, and S. Ullrich. 2010. "Strategic Development of Business Models: Implications of the Web 2.0 for Creating Value on the Internet." Long Range Planning 43 (2/3): 272–290.
- Yunus, M., B. Moingeon, and L. Lehmann-Ortega. 2010. "Building Social Business Models: Lessons from the Grameen Experience." Long Range Planning 43 (2–3): 308–325.
- Zeng, K., and X. Luo. 2011. "Performance Measurement Systems for e-business." Proceedings of the 6th International Forum on Strategic Technology, Harbin, China, August 22–24. Piscataway, NJ: IEEE, 1310–1313.
- Zhang, Q., L. Cheng, and R. Boutaba. 2010. "Cloud Computing: State-of-the-art and Research Challenges." Journal of Internet Services and Applications 1 (1): 7–18.

- Zhang, G., and J. Gai. 2005. "Strategic Choice for being e-Business." Procs of ICEC 2005 Conference, 184–187, Xian, China, August 15–17.
- Zhu, K., K. Kraemer, and S. Xu. 2003. "Electronic Business Adoption by European firms: A Cross-County Assessment of the Facilitators and Inhibitors." *European Journal of Information Systems* 12: 251–268.
- Zilman, M. P. 2005–2012. "Academic and Scholar Engines and Sources—An Internet MiniGuide Annotated Link Compilation." Virtual Private Library: 1–67. http://virtualprivatelibrary.blogspot.co.uk/Scholar.pdf.
- Zott, C., R. Amit, and L. Massa. 2011. "The Business Model: Recent Developments and Future Research." Journal of Management 37 (4): 1019–1042.