

# Deakin Research Online

*Deakin University's institutional research repository*

**This is the authors' final peer reviewed version of the item published as:**

Adam, Stewart, Vocino, Andrea and Bednall, David 2009, The world wide web in modern marketing's contribution to organisational performance, *Marketing intelligence & planning*, vol. 27, no. 1, pp. 7-24.

**Available from Deakin Research Online:**

<http://hdl.handle.net/10536/DRO/DU:30016666>

**Reproduced with the specific permission of the copyright owner.**

**Copyright** : 2009, Emerald Group Publishing

# **The world wide web in modern marketing's contribution to organisational performance**

**Stewart Adam, *Deakin University, Burwood, Australia***

**Andrea Vocino, *Deakin University, Burwood, Australia***

**David Bednall, *Deakin University, Burwood, Australia***

**Purpose** – The purpose of this paper is to provide a better understanding of the antecedents of organisational performance (OP), both financial and marketing, and the influence of holding a strategic market orientation (MO) where customer-base volatility is taken into account.

**Design/methodology/approach** – A sample of 167 marketing organisations in Australia was surveyed to test the hypothesised model. Structural equation modelling was employed in the data analysis.

**Findings** – Use of the world wide web (Web) reported by organisations in this study indicates that there is still separate use of the Web and that it has yet to be fully integrated into the marketing strategy of many organisations. The study finds that traditional marketing effort mediates the relationship between holding a MO and OP in terms of financial indicators.

**Research limitations/implications** – A major limitation of this study is that it surveys organisations from many industries rather than selected industries. This tends to mask some of the possible outcomes.

**Practical implications** – The findings in this study suggest that traditional and online elements of marketing effort each mediate the influence of holding a MO on OP, but differently. Innovation culture is found to influence both marketing practice and marketing performance, directly. A single measure of environmental turbulence – customer-base turbulence or churn – negatively affects marketing performance, and ultimately financial performance.

**Originality/value** – A major contribution of this study is the examination of use of the Web in marketing effort and how this usage influences financial and marketing performance.

**Keywords** : Marketing; Organizational performance; Online operations; Electronic commerce; Australia.

## **Introduction**

Following the first commercial use of the world wide web (Web) in 1994, researchers in marketing believed that this graphical face of the internet would be readily embraced in many organisations' marketing strategy (Hoffman and Novak, 1996). It remained to be seen, however, how marketing effort would embrace both traditional and online elements of marketing and how web-enabled marketing effort would influence both financial and non-financial (marketing) aspects of organisational performance (OP).

It can be argued that early attempts in the literature have tried to examine one dimension of online marketing effort (OME) by looking at how marketing practice employed newer database and internet technologies (Brodie *et al.*, 1997; Dholakia and Rego, 1998; Ho, 1997; Hofacker and Murphy, 1998). However, subsequent research (Adam *et al.*, 2002) suggested that OME comprised online marketing communication (OMC), online fulfilment processes (i.e. marketing channel transactions) and online relationship management (ORM). These authors also proposed that integrated use of the Web might be conceptualised as falling along a continuum. Such a perspective meant that marketing effort might involve wholly using components of OME, or wholly using their traditional equivalent, or indeed involve various permutations. For clarity's sake, Figure 1 shows a simplified example of a market-oriented organisation which is employing traditional marketing communication to draw customers to a web site in order to buy products (e.g. air travel tickets) and to engage them in dialogue and thereby develop binding relationships. The marketing activity portrayed is designed to lead to performance outcomes such as brand knowledge (i.e. marketing performance) and more importantly, sales and profits (i.e. financial performance).

Figure 1 does not intend to suggest that marketing effort only comprises the components proposed therein, but rather that it is convenient to examine the traditional equivalent of the online elements. Where such a view of marketing effort has been employed in research, it was noted that among other differences, there are between-country differences in how the Web is used in marketing. For instance, UK organisations exhibited greater strategic intent in their use than organisations in Australia and New Zealand, where it appeared that the Web was used simply because others in the same industry did so (Adam *et al.*, 2002).

The present study tests the propositions intimated by others, but not tested, that the relationship between holding a MO and OP is mediated by marketing practice that now includes use of the Web (Adam, 2002). The paper proceeds by developing a hypothesised model from the antecedent literature in the next section. This is followed by a section that presents the methodology employed and presents a profile of the respondents. This is, in turn, followed by a data analysis section. Next, follows the discussion and implications section. The paper closes with a discussion of future research that might be undertaken in an effort to overcome any deficiencies in the present reported study.

## **Theory and hypotheses**

This study examines the influence of MO, innovation culture (IC), customer-base volatility (CBV) and technological change (TC), on traditional marketing effort (TME), OME, OP – which is identified separately as non-financial organisational, or marketing organisational performance (MOP), and financial organisational performance (FOP). Thus, unless stated otherwise, OP is used to refer to both FOP and MOP.

### ***Antecedent studies***

Table I presents a summary of the main antecedent studies discussed in this section, and which underpin the constructs under investigation. While it might seem self-evident to some that marketing effort is expended by a market-oriented organisation, it is notable that little of the investigated literature has examined the role of marketing effort – or marketing practice as some prefer (Ellis, 2004) – on OP. Rather, such studies have tended to examine the influence of MO on OP, albeit with varying results. Arguably, MO and marketing effort are

intertwined. However, one is not synonymous with the other – a point that is made clearer in subsequent sections.

### ***Traditional and Web-based marketing effort***

The academic literature has been almost silent, until recently, on the role of marketing effort/practice in determining financial outcomes, and the appropriate metrics to use, even though much has been made of the often nebulous relationship between marketing practice and OP in trade literature. The matter has moved beyond being a topic of discussion in professional marketing groups such as the Australian Marketing Institute (AMI) in that a toolkit for industry use is under development (James, 2005). Like the professions, more recent academic investigation and discussion has turned to ascertaining which marketing metrics are used, and how relevant they are when examining the outcomes from marketing effort for practitioners, and in assessing the influence of MO on OP in the case of academic studies (Ambler *et al.*, 2004, 2001; Diamantopoulos and Hart, 1993; Ittner and Larker, 1998, 2003).

Given the increased use of the Web in marketing effort, one might think that traditional and online marketing programs have merged. For example, it is reported that use of the Web in marketing communication will soon overtake magazine advertising expenditure in Australia and that some A\$1.4-1.6 billion (12-13 per cent) of the A\$12 billion a year spent by Australian industry and government in marketing is spent on the Web (Bajkowski, 2008; Fadaghi, 2007; Shoebridge, 2007). However, Adam *et al.* (2002) found that this integration was not evident, leading us to test the following hypothesis:

*H1. TME and OME are separate marketing performance elements.*

In the process of examining the mediation of traditional and OME, Yaman's (2000) measures of marketing research usage were modified to enable measurement of traditional marketing communication effort – primarily mass, targeted and in-store promotional expenditure and marketing communication employee number changes in the past three years.

In the case of traditional fulfilment processes, no academic studies were found that employed multi-item inventories to examine marketing logistics. As a consequence, a set of operational objectives were used as scale items and which Bowersox and Closs (1996, p. 41) identified as “the primary determinants of logistical performance [...] rapid response, minimum variance, minimum inventory, movement consolidation, quality, and lifecycle support”.

When examining the nature of relationship management (RM) practices, the present study utilised scale items that Selnes (1998) employed, due to the reported reliability coefficients of the scales and the indicated discriminant validity. The items were adapted to enable self-reporting of managers, rather than responses which concerned the business suppliers to the organisation, e.g. “Our organisation is regarded by business customers and/or end-consumers as providing information that can be trusted.”

### ***Market orientation and organisational performance***

There are two seminal views of MO, which, while they may be considered to be compatible, are, nevertheless, different. Kohli and Jaworski (1990) saw the generation of marketing knowledge (e.g. from marketing research), its dissemination, and organisational response to

it, as key aspects of an organisation's MO, which may, in some circumstances, be a moderator of OP. Their multi-item inventory is referred to as MARKOR. Narver and Slater (1990, p. 21) inferred “that market orientation had three behavioural components – customer orientation, competitor orientation, and an interfunctional coordination – and two decision criteria – long-term focus and profitability” which they saw as consistent with the definition put forward by Kohli and Jaworski. Their multi-item inventory is known as MKTOR.

A detailed meta-analysis of MO studies by Ellis (2006) compares studies which used either or both of the MKTOR and MARKOR inventories and which adopted the correlation coefficient ( $r$ ) as their measure of the degree of the influence of MO on OP. The meta-analysis illustrates that “in practical terms the average correlation reveals that, globally, less than 7 per cent of the variation in firm performance is associated with market orientation” (Ellis, 2006, p. 1095). These differences led Ellis to search further for moderator effects from such sources as the multi-item inventories (MKTOR and MARKOR) themselves, objective versus subjective measures of performance, cultural distance from the USA, and the level of market development.

Like Oczkowski and Farrell (1998) before him, Ellis concludes that the MARKOR inventory provides a greater explanation of the influence of MO on OP, where various performance measures were employed. Like Harris (2001), he asserts that while there is a stronger correlation between MO and the performance reported by managers (subjective), this quite understandable outcome perhaps means that identical findings for the two measures are unlikely to be found. Akin to Homburg and Pflesser (2000), Ellis (2006) also affirms that MO influences both market (non-financial) and financial measures of OP.

Given the generally supported influence of holding a MO on OP, and our contention that traditional and OME might not yet be integrated, we stipulated the predictive power of holding a MO on traditional and OME as set out in the following hypotheses:

*H2.* Holding a MO predicts TME.

*H3.* Holding a MO predicts OME.

### ***Environmental aspects and innovation culture***

Not only may the organisational context influence the link between MO and OP, but so too may the environment. Arguably, the environment influences, directly, OP. Kohli and Jaworski (1990) theorised that the association between MO and performance was moderated by the environment, however, they subsequently failed to identify such moderation effects from market turbulence, technological turbulence, and competitive hostility (Jaworski and Kohli, 1993).

The influence of CBV, and TC are examined in the present study. CBV and TC are single items drawn from three environmental indicators previously used by Jaworski and Kohli (1993).

Where an organisation has an IC, it could be said to tolerate uncertainty, encourage inventiveness, make quick responses to changing market conditions and/or to competitor actions. In the present study, IC is a four-item inventory as shown in the Appendix. Three of

the items were drawn from (Menon and Varadarajan, 1992), while the fourth item identified rapidity of response to competitors' actions.

We examined the influence of the environmental and IC factors by stipulating the following hypotheses:

*H4.* Customer-based volatility directly influences marketing performance (MOP).

*H5.* IC influences TME.

*H6.* IC influences OME.

*H7.* TC influences TME.

*H8.* TC influences OME.

### ***Organisational performance – non-financial and financial***

Earlier studies have sometimes taken a relatively simplistic view of OP, e.g. sales revenue. Profit-oriented organisations are concerned with financial measures such as profit for distribution to shareholders, while non-profit organisations are concerned with surpluses to enable them to continue their purpose. In each case, they also use non-financial measures of performance, particularly when assessing outcomes from marketing effort such as attitudinal change and measures of brand personality and perceived brand quality.

The measures employed in the present study were drawn in their entirety from Ambler *et al.*'s (2001) study. These researchers report the top marketing metrics from their three-stage UK study, which sampled marketing and financial management from various industry sectors that included retail, consumer goods, consumer services, business-to-business goods, and business-to-business services companies. They indicate that financial management gave fewer mentions of financial measures than marketing management, and that apart from this, there is little difference between the two – other than the fact that marketers are more concerned with innovation.

Following Ambler *et al.*'s (2001) lead, the decision was made to include financial and non-financial, or marketing, measures, both overt behavioural and intermediate (in-the-mind). The present study also sought to equate expenditure on marketing effort over time (e.g. In the past three financial years, expenditure on web sites to communicate BRAND information has ...) with marketing performance using seven items employed by Ambler *et al.* (2001) in their stage two survey instrument. The present study also employed a modified Juster scale which is usually employed as a purchase probability scale (Gendall *et al.*, 1991; Wright *et al.*, 2002) to gain respondent information on the OP items identified by Ambler *et al.* The scale descriptors used in the present study are set out in the Appendix.

The following overarching hypotheses were developed from the literature concerning OP, primarily Ambler *et al.* (2001):

*H9.* TME predicts non-financial (marketing) organisational performance (MOP).

*H10.* OME predicts non-financial (marketing) organisational performance (MOP).

*H11.* TME predicts FOP.

*H12.* OME predicts FOP.

*H13.* Non-financial (marketing) organisational performance (MOP) predicts FOP.

In summary, at this point the hypotheses as shown in Figure 2, suggest that marketing effort is a mediator of non-financial and FOP and that there are no direct effects of holding a MO on OP evident – even though some antecedent studies suggest these exist, albeit with interaction effects from such as market turbulence. It is reiterated at this point that none of the antecedent studies examined marketing effort, and in particular, none examined the influence of the Web in both marketing and OP.

## **Research methods**

This section presents sample frame and respondent profile details.

### ***Sample***

The unit of analysis in this study is the marketing organisation. Top managers, including those responsible for the marketing function, were individually invited to respond via a self-administered online questionnaire. The sampling frame was a purchased list of top marketing management in 8,500 Australian organisations, each of whom was invited to respond to an online survey. An online questionnaire, secured by individual username and password was employed. The 11-point Likert type scales, and modified Juster scales were used with the multi-item inventories drawn from the literature summarised in Table I, and synthesised in the earlier section. The 11-point scale selection was based on prior experience with online survey respondents who were dependent on computer monitor resolution to discriminate scales in online questionnaires (McDonald and Adam, 2003), and due to the desire to maintain consistency with the modified Juster scales which were also employed. Data from 167 completed questionnaires were passed from respondents' Web browsers to a PostgreSQL database running on a Linux computer supporting Apache Web server software. Javascript was employed in the questionnaire to ensure there was no missing data.

The response level was lower than anticipated, which is reflective of falling online survey response levels generally (McDonald and Adam, 2003). This has been more noticeable since the introduction of the Spam Act 2003, even though non-commercial electronic messages such as the invitation to participate in this study are outside the ambit of the act. Arguably, the fact that no follow-up e-mails were sent in this study also contributed to the lower than anticipated response.

### ***Respondent profile***

Many industries are represented in the respondent database with 33 per cent from the Business and Finance sector. There is a spread of organisational size based on revenue in that 16 per cent had revenues of less than \$1 million (AUD); 47 per cent \$1-24.9 million; 20 per cent \$25-99.9 million; 9 per cent \$100-299.9 million and 8 per cent \$300 million and over.

When examining the marketing organisational structure of the respondent organisations, it was noted that 35 per cent employed a central marketing function. It was further noted that 11

per cent had a central as well as regional/divisional function; 7 per cent distributed the marketing function throughout the organisation; 38 per cent had no formal marketing department, but one or more people were assigned to the function; while only 9 per cent had no formally acknowledged marketing employees. There was also a spread in terms of business age, in that 16 per cent were less than ten years old, 40 per cent had been in existence for between 11 and 20 years, and 44 per cent were formed 20 or more years earlier.

Respondents reported that overall marketing budget responsibility lay with various levels within the organisations. In 66 per cent of cases, this responsibility lay with owner/operator/CEO/MD/SBU manager. In 30 per cent of organisations, marketing budget responsibility lay with the chief marketing officer or marketing manager, while in a further 4 per cent of cases, this lay with another senior manager.

Interestingly, marketing expenditure was toward the low end of the spectrum, with 77 per cent reporting annual expenditure of less than \$1 million, 16 per cent reporting expenditure of \$1-4.9 million, 3 per cent expenditure of \$5-9.9 million, and 4 per cent \$10 million or more. It might be the case that the 32 per cent not reporting marketing expenditure in the present study have larger budgets, but their policies do not permit such information to be divulged.

When examining respondents by positions held, it was noted that when three of the 22 “other senior managers” are included, since they claimed board member status, half of the respondents are members of top management. This rises to over 70 per cent when business unit managers and chief financial and marketing officers are included. Arguably, respondents were senior enough to be able to report knowledgeably on their organisations' inputs and performance.

Non-response bias was tested by comparing early and late respondents from sample two on the organisational demographics characteristics: years established, revenue, employee numbers and the major constructs involved. The sample was split and *t*-tests conducted to compare the means for respondents who completed the questionnaire on the first day, and those respondents who completed the questionnaire over the ensuing three weeks (Armstrong and Overton, 1977). No significant differences were found between the two groups, leading to the conclusion that non-response bias was not in evidence, although had non-respondent identities been available, or had the local version of SIC classifications been employed rather than a commercial classification scheme, other tests might have been used to provide greater confidence in this regard.

Data from the online survey phase was entered into SPSS 14.0 and analysed further with AMOS 7.0.

## **Data analysis and results**

Analysis of the data proceeded using a two-step approach suggested by Anderson and Gerbing (1988) and Kline (1998). Establishing unidimensionality of the single factor congeneric models preceded examination of reliability employing Cronbach's  $\alpha$  (Cronbach, 1951). Structural equation modelling (SEM) was employed in testing the fit of the model to the data.

### ***Single factor measurement models and SEM***

In the first instance, confirmatory factor analysis of each of the single constructs provided the results shown in Table II. Each of the constructs shown has four or more manifest (observable) variables following the trimming process. It is to be noted that in this study, the manifest variables are considered to be reflective of the constructs. In effect, removing variables which are not indicative of unidimensionality does not change the construct. In the case of each latent construct, there is a good fit of the model to the data as indicated by the goodness-of-fit statistics presented in Table II, suggesting unidimensionality in each case. The items for each construct, following purification, are presented in the Appendix.

As reported in Table II, TME is a composite of the three constructs mass media communication (MMC), marketing logistics networks (MLN) and RM, while OME is a composite of the three constructs OMC, online marketing logistics management (OMLN) and ORM.

The next step in the analysis entailed examination of the reliability of the constructs shown in Table II. For each multi-item construct shown in Table II, the Cronbach's  $\alpha$  was above 0.80, except in the case of MMC which was 0.65, thereby indicating acceptable reliability (Hair *et al.*, 1998).

The analyses showed that there is no statistically significant relationship between MO and OP, i.e.  $OP < -MO$ :  $R^2=0.14$ ,  $p=0.30$ . There is also no statistically significant relationship between MO and OME,  $R^2=0.13$ ,  $p=0.10$ , or between RM and ORM,  $R^2=0.16$ ,  $p=0.07$ .

This part of the analysis also meant determining whether TME and OME are discrete, as suggested in *HI*. To do this meant firstly examining the standardised covariances between each of the underlying constructs MMC-OMC; MLN-OMLN; and RM-ORM. The standardised covariances between the respective pairs were 0.70, 0.30 and 0.15, thereby indicating discriminant validity (where 0.85 indicates no discrimination). In addition, a  $\Delta\chi^2$  test between the constrained model (i.e. where the correlation is fixed to 1) to the unconstrained model (i.e. where the correlation is freely estimated) was also undertaken (Anderson and Gerbing, 1988; Bagozzi *et al.*, 1991). If the  $\Delta\chi^2$  is statistically significant this implies that the correlation is different from 1 and then the constrained model needs to be rejected. If the  $\Delta\chi^2$  is not statistically significant then the correlation is not different from 1 and the constrained model must not be rejected. The tests provided the following results: MMC-OMC, 78.10 (constrained) – 41.09 (unconstrained) =  $\Delta\chi^2$  37.01 for 1 df ( $p=0.000$ ); MLN-OMLN, 296.05 – 32.97 = 263.08; and RM-ORM, 426.33 – 41.92 =  $\Delta\chi^2$  384.41 for 1 df ( $p=0.000$ ). These tests also suggest that the traditional and online variables discriminate.

The final aspect of the analysis entailed developing a full structural model. We were concerned about the effects of random error that might bias the estimation of the structural paths in the SEM analyses. Concerns about the power and stability of the modelling in light of the sample size ( $N=167$ ), and the need to maintain a cases to free parameter ratio of 10:1 or greater (Kline, 2005), necessitated the formation of composites for each of the constructs including MO, FOP – financial, and MOP – marketing.

The composite inventories shown in Table II were developed as factor loading index weighted constructs rather than simply summing and/or averaging the factor loadings. TME and OME are treated as indices of the marketing elements shown in Table II. That is, unlike

the situation with the reflective indicator factors MO, IC, MOP and FOP, in the case of TME and OME, the formative indicators are treated as a cause of each index (Hair *et al.*, 2006).

The final model, which presents factor loadings, is shown as Figure 3. The implied covariance matrix is presented in Table III. In total, 23 per cent of the variance in marketing performance (MOP), and 18 per cent of financial performance (FOP), is explained by the model.

## Discussion and implications

Examination of the mediation effects of marketing practice as defined in the present study necessitates ascertaining that the components— TME and OME as defined – discriminate, as suggested in *H1*. Support for this contention is found, indicating that in the case of this sample, a lack of integration of these two elements of marketing practice. Moreover, support is found for *H2*, but not for *H3*, in that holding a MO only predicts TME. Why this is the case is not immediately obvious, however, it may be a function of the preponderance of smaller firms in mixed industries in the sample. These firms have been shown to be slower to adopt digital technologies than larger firms in single industries. As expected, customer-based volatility, or churn, negatively influences non-financial performance, thereby supporting *H4*. Support is also found for *H5* and *H6* in that the organisation's readiness to accept innovation influences both forms of marketing practice.

There is no support for *H7* but there is for *H8*, in that it appears that TC is more likely to influence OME. This is to be expected in that the developments in internet and Web technologies continue unabated and are increasingly seen to play their part in marketing, as evidenced by increasing expenditure in this form of marketing practice.

From Figure 3 and the underlying analyses, there is no support for *H9* while *H10* and *H11* are supported. It seems that OME is seen to predict marketing performance, while TME is seen to predict financial performance. This is perhaps a reflection that marketing managers implicitly connect more TME with financial performance, even though financial managers may not see this connection. Given that debate continues among practitioners concerning the role of the Web in financial performance, the respondents in this study see a connection between use of the Web and marketing outcomes. As one might hope, marketing performance plays a role in determining financial performance, thereby supporting *H13*.

The findings reported herein have ramifications for both the science of marketing and its practice, particularly in light of professional group commentaries concerning the poor job that marketing management have done to convince top management of the return on investment in marketing. Additional evidence for this lies in the fact that the AMI is working with academic researchers in developing a marketing metrics toolkit to assist practitioners with this task (Shoebridge, 2005) which will also assist in valuation of intangibles such as brand equity (Ambler and Neely, 2007).

While there have been many studies which examine the MO-OP relationship, none were identified where marketing effort was brought to account in the manner undertaken in the present study. In particular, no studies involving the Web in marketing practice were identified. The findings are an important step in understanding the contribution that marketing effort, where the Web is integrated, makes to OP for it is clear that despite claims concerning the integration of digital tools and technologies in marketing practice, particularly

marketing communication, the evidence from this study does not substantiate this. In this study, marketing (non-financial) performance is seen to be aided by OME and a culture where innovation is supported, but negatively affected by customer churn. TME is more closely aligned with holding a MO and is seen to directly influence financial outcomes.

However, it would be unwise to generalise from the results of this study to the world at large for a few reasons. Firstly, the findings may not hold where a different mix of industries, or where single industries are polled, no matter how large the sample of respondents. For example, Narver and Slater's (1990) findings were drawn from a study of one company with 140 SBUs in a single industry. Secondly, as Appiah-Adu (1998) indicated, in a developing market there are differences in the relationships between these variables relative to developed countries. Thirdly, when examining the strategic use of the Web in marketing, Australia was, and perhaps remains different to the UK in terms of business use of the Web (Adam *et al.*, 2002). Given the reported differences in consumer Web use between two countries with greater broadband penetration and higher data transfer speeds than Australia and New Zealand – USA and Korea (Park and Jun, 2002) – it is intuitively appealing to suggest that it will be some time into the future before Australian organisations will enjoy the productivity and revenue growth benefits that the internet and Web tantalisingly offer (Hanson, 2000).

Many Australian marketing practitioners have not yet drawn the Web into their marketing strategy, if this sample is indicative of the broader lack of activity reported in trade publications. This, despite the increasing use of the internet for marketing communication. However, marketing communication is but one use of the Web in marketing, as already discussed.

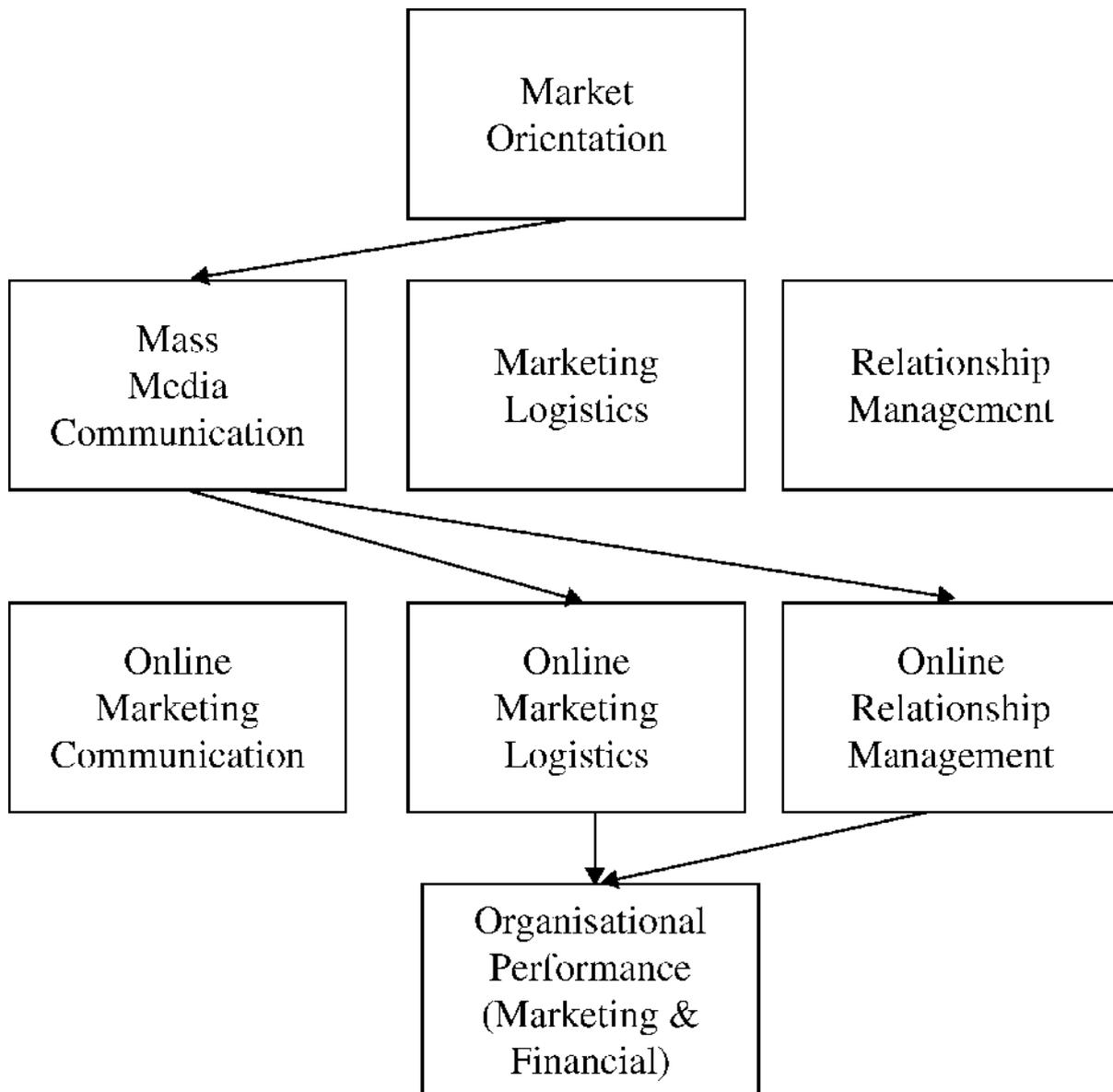
It is evident that the Web cannot be integrated into the operations of every organisation. It is even more pertinent to examine the extent to which those organisations which have integrated the Web into their marketing, in particular, have embraced database technology. That is, they have moved more closely towards what might be considered a direct marketing or subscriber-based model, and thereby take account of varying customer requirements, as well as the different values customers represent to any such organisation (Peppers *et al.*, 1999). This detail was not examined in the present study.

### **Limitations and future research directions**

Comparisons need to be made with regard to the extent to which countries such as Australia differ in their use of the Web from North America, and more importantly, why. It cannot simply be attributed to the paucity in bandwidth in Australia, as some internet service providers and government would have us believe.

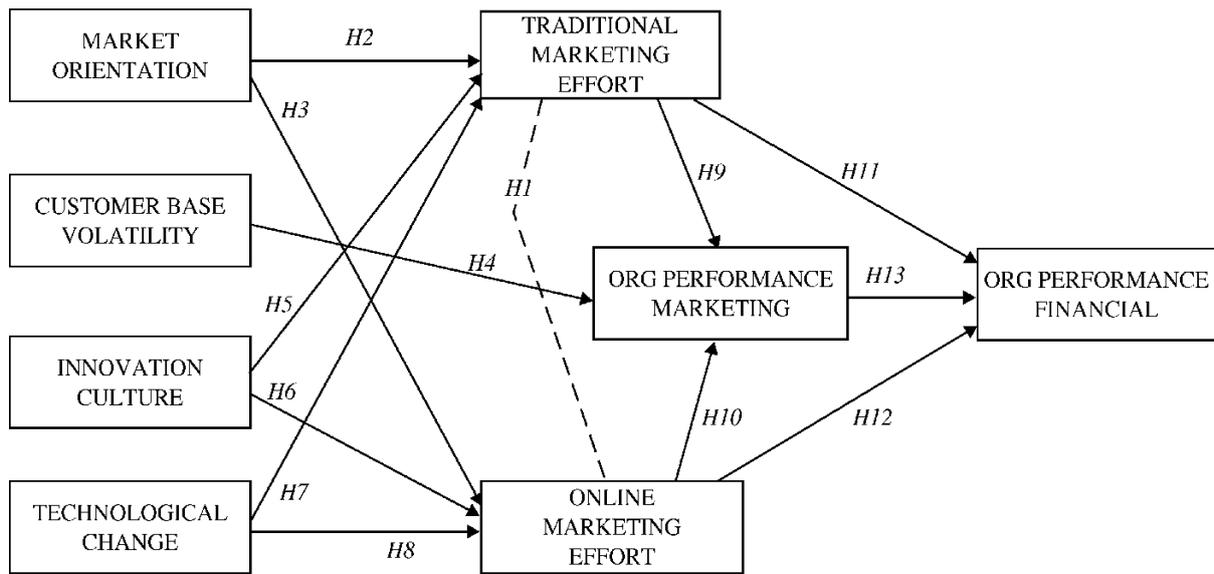
Marketing scientists may need to put aside definitional issues over what the term marketing embraces, e.g. transactional, relational and myriad other qualifying terms (Brodie *et al.*, 1997) that are used, and which, by and large serve little purpose. Researchers who simply see the Web as another tool, albeit offering the benefits of interactivity and lower research costs, have overlooked the new business models that are only possible because of the Web. Although some models may be transient (e.g. those based on so-called Web 2.0 social marketing tools – blogs, wikis, sharing sites, widgets and more – get-rich-quick schemes such as <Milliondollarhomepage.com> and monetisation of sites generally), overall there is a need for research into their entrepreneurial development and the network effects of such activities as Google's AdWords, and the rise of many entrepreneurial sites in response (e.g.

MensBowTies.com). Researchers are already active in trying to ascertain the most appropriate marketing metrics to be used in various countries, and this activity is set to continue for some time to come.

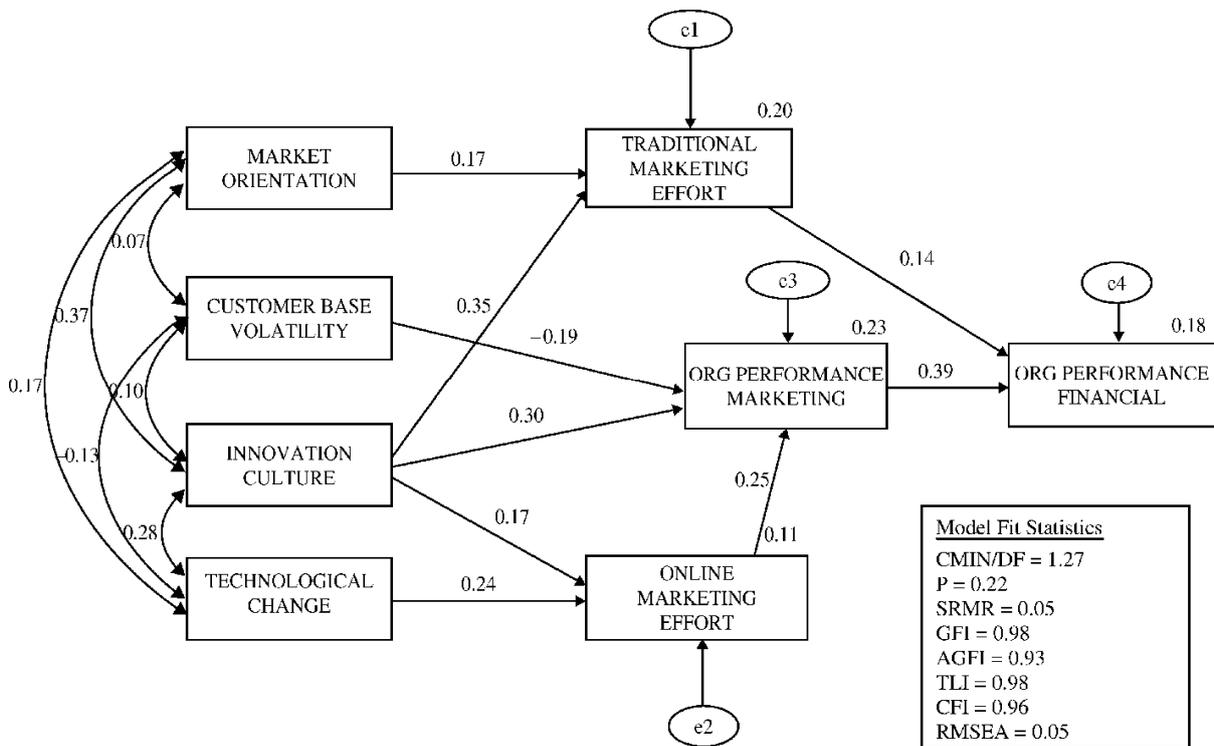


**Source:** After Adam (2002, p. 267)

*Figure 1* Conceptualisation of marketing effort employing the world wide web



**Figure 2** Hypothesising the mediating role of marketing effort on OP



**Figure 3** Non-recursive path model

<i>Exogenous variables</i>	<i>Pertinent antecedent studies</i>
Market orientation (MO)	Ambler <i>et al.</i> (2001), Harris (2001) and Narver and Slater (1990)
Customer-base volatility (CBV)	Jaworski and Kohli (1993)
Technological change (TEC)	Jaworski and Kohli (1993)
Innovation culture (IC)	Deshpandé <i>et al.</i> (1993)
<i>Endogenous variables</i>	
<i>Traditional marketing effort (TME)</i>	
Marketing communication (MMC)	Yaman (2000)
Marketing logistics networks (MLN)	Bowersox and Closs (1996)
Relationship management (RM)	Selnes (1998)
<i>Online marketing effort (OME)</i>	
Online marketing communication (OMC)	Adam and Deans (2000)
Online marketing logistics (OMLN)	Adam and Deans (2000)
Online relationship management (ORM)	Adam and Deans (2000)
<i>Organisational performance (OP)</i>	
Non-financial organisational performance (MOP)	Ambler <i>et al.</i> (2004, 2001)
Financial organisational performance (FOP)	Ambler <i>et al.</i> (2004, 2001)

**Table I.**  
Construct derivation

**Table I** Construct derivation

	MVs	CMIN/DF	P	SRMR	GFI	AGFI	TLI	CFI	RMSEA	Reliability
MO	5	0.66	0.65	0.03	0.98	0.98	1.01	1.00	0.00	0.85
<i>TME</i>										
MMC	5	1.34	0.24	0.04	0.98	0.95	0.96	0.98	0.05	0.65
MLN	5	1.24	0.29	0.02	0.99	0.96	0.99	1.00	0.04	0.87
RM	7	0.73	0.74	0.02	0.98	0.97	1.01	1.00	0.00	0.84
<i>OME</i>										
OMC	4	1.29	0.28	0.02	0.99	0.96	0.99	1.00	0.04	0.76
OMLN	5	0.83	0.53	0.02	0.99	0.97	1.01	1.00	0.00	0.81
ORM	4	1.48	0.23	0.02	0.99	0.96	0.99	1.00	0.05	0.89
FOP	5	1.16	0.33	0.01	0.99	0.96	1.00	1.00	0.03	0.91
MOP	7	0.94	0.50	0.02	0.98	0.96	1.00	1.00	0.00	0.87

**Table II.**  
Congeneric model  
fit statistics

**Table II** Congeneric model fit statistics

	TC	MO	CBV	IC	OME	MOP	TME	FOP
TC	5.811							
MO	0.604	2.264						
CBV	-0.902	0.284	8.099					
IC	1.315	1.078	-0.570	3.670				
OME	1.367	0.305	-0.276	0.893	3.858			
MOP	0.400	0.172	-0.599	0.662	0.589	0.848		
TME	0.310	0.457	-0.072	0.795	0.198	0.141	0.977	
FOP	0.318	0.205	-0.396	0.586	0.415	0.568	0.293	2.291

**Table III.**

Implied covariances

**Table III** Implied covariances

## References

Adam, S. (2002), "A model of web use in direct and online marketing", *EM: Journal of Electronic Markets and Business Media*, Vol. 12 No.4, pp.262-9.

Adam, S., Deans, K.R. (2000), "Online business in Australia and New Zealand: crossing a chasm", paper presented at AUSWEB2K: The Sixth Australian World Wide Web Conference, Cairns, Australia, .

- Adam, S., Mulye, R., Deans, K.R., Palihawadana, D. (2002), "E-marketing in perspective: a three country comparison of business use of the internet", *Marketing Intelligence & Planning*, Vol. 20 No.4/5, pp.243-51.
- Ambler, T., Neely, A.D. (2007), "Narrative reporting in company annual accounts", available at: <http://ssrn.com/abstract=1030724> (accessed 7 March 2008), .
- Ambler, T., Kokkinaki, F., Puntoni, S. (2004), "Assessing marketing performance: reasons for metrics selection", *Journal of Marketing Management*, Vol. 20 pp.475-98.
- Ambler, T., Kokkinaki, F., Puntoni, S., Riley, D. (2001), "Assessing market performance: the current state of metrics", Centre of Marketing, London Business School, London, working paper, .
- Anderson, J.C., Gerbing, D.W. (1988), "Structural equation modeling in practice: a review and recommended two-step approach", *Psychological Bulletin*, Vol. 103 No.3, pp.411-23.
- Appiah-Adu, K. (1998), "Market orientation and performance: empirical tests in a transition economy", *Journal of Strategic Marketing*, Vol. 6 pp.25-45.
- Armstrong, J.S., Overton, T. (1977), "Estimating non-response bias in mail surveys", *Journal of Marketing Research*, Vol. 14 pp.396-403.
- Bagozzi, R.P., Youjae, Y., Phillips, L.W. (1991), "Assessing construct validity in organizational research", *Administrative Science Quarterly*, Vol. 36 No.3, pp.421-58.
- Bajkowski, J. (2008), "Web payments in for shake-up", *The Australian Financial Review*, p. 1 and 38, Vol. 17.
- Bowersox, D.J., Closs, D.J. (1996), *Logistical Management: The Integrated Supply Chain Process*, McGraw-Hill, New York, NY, .
- Brodie, R.J., Covellio, N.E., Brookes, R.E., Little, V. (1997), "Towards a paradigm shift in marketing? An examination of current marketing practices", *Journal of Marketing Management*, Vol. 13 pp.383-406.
- Cronbach, L.J. (1951), "Coefficient alpha and the internal structure of tests", *Psychometrika*, Vol. 16 pp.297-334.
- Deshpandé, R., Farley, J.U., Webster, F.E. Jr (1993), "Corporate culture, customer orientation, and innovativeness in Japanese firms: a quadrad analysis", *Journal of Marketing*, Vol. 57 pp.23-7.
- Dholakia, U.M., Rego, L.L. (1998), "What makes commercial web pages popular? An empirical investigation of web page effectiveness", *European Journal of Marketing*, Vol. 32 No.7/8, pp.724-36.
- Diamantopoulos, A., Hart, S. (1993), "Linking market orientation and company performance: preliminary evidence on Kohli and Jaworski's framework", *Journal of Strategic Marketing*, Vol. 1 No.2, pp.93-121.

- Ellis, P.D. (2004), "Market orientation and marketing practice in a developing economy", *European Journal of Marketing*, Vol. 39 No.5/6, pp.629-45.
- Ellis, P.D. (2006), "Market orientation and performance: a meta-analysis and cross-national comparisons", *Journal of Management Studies*, Vol. 43 No.5, pp.1089-107.
- Fadaghi, F. (2007), "The unstoppable net", *Forbes Magazine*, BRW (Reprint from, Vol. 29 No.28, pp.40-3.
- Gendall, P., Esslemont, D., Day, D. (1991), "A comparison of two versions of the Juster scale using self-completion questionnaires", *Journal of the Market Research Society*, Vol. 33 No.3, pp.257-63.
- Hair, J.F. Jr, Anderson, R.E., Tatham, R.L., Black, W.C. (1998), *Multivariate Data Analysis*, 5th ed., Prentice-Hall, Upper Saddle River, NJ, .
- Hair, J.F. Jr, Black, W.C., Babin, B.J., Anderson, R.E., Tatham, R.L. (2006), *Multivariate Data Analysis*, 6th ed., Pearson Education, Upper Saddle River, NJ, .
- Hanson, W. (2000), *Principles of Internet Marketing*, South-Western College Publishing, Cincinnati, OH, .
- Harris, L.C. (2001), "Market orientation and performance: objective and subjective evidence from U.K. companies", *Journal of Management Studies*, Vol. 38 No.1, pp.17-43.
- Ho, J. (1997), "Evaluating the world wide web: a global study of commercial websites", *Journal of Computer-Mediated Communication*, Vol. 3.
- Hofacker, C.F., Murphy, J. (1998), "World wide web banner advertisement copy testing", *European Journal of Marketing*, Vol. 32 No.7/8, pp.703-12.
- Hoffman, D.L., Novak, T.P. (1996), "Marketing in hypermedia computer-mediated environments: conceptual foundations", *Journal of Marketing*, Vol. 60 pp.50-68.
- Homburg, C., Pflesser, C. (2000), "A multiple-layer model of market-oriented organizational culture: measurement issues and performance outcomes", *Journal of Marketing Research*, Vol. 37 pp.449-62.
- Ittner, C.D., Larker, D.F. (1998), "Are nonfinancial measures leading indicators of financial performance? An analysis of customer satisfaction", *Journal of Accounting Research*, Vol. 36 pp.1-35.
- Ittner, C.D., Larker, D.F. (2003), "Coming up short on nonfinancial performance measurement", *Harvard Business Review*, Vol. 81 No.11, pp.88-95.
- James, D. (2005), "Marketing's hardest sell", *BRW*, 20-26 October, pp.65.
- Jaworski, B.J., Kohli, A.K. (1993), "Market orientation: antecedents and consequences", *Journal of Marketing*, Vol. 57 pp.53-70.

Kline, R.B. (1998), *Principles and Practice of Structural Equation Modeling*, Guildford Press, New York, NY, .

Kline, R.B. (2005), *Principles and Practice of Structural Equation Modeling*, 2nd ed., Guildford Press, New York, NY, .

Kohli, A.K., Jaworski, B.J. (1990), "Market orientation: the construct, research propositions and managerial implications", *Journal of Marketing*, Vol. 54 pp.1-18.

McDonald, H., Adam, S. (2003), "A comparison of online and postal data collection methods in marketing research", *Marketing Intelligence & Planning*, Vol. 21 No.2, pp.85-95.

Menon, A., Varadarajan, R. (1992), "A model of marketing knowledge use within firms", *Journal of Marketing*, Vol. 56 pp.53-71.

Narver, J.C., Slater, S.F. (1990), "The effect of a market orientation on business profitability", *Journal of Marketing*, Vol. 54 pp.20-35.

Oczkowski, E., Farrell, M.A. (1998), "Discriminating between measurement scales using non-nested tests and two-stage least squares estimators: the case of market orientation", *International Journal of Research in Marketing*, Vol. 15 pp.349-66.

Park, C., Jun, J-K. (2002), "A cross-cultural comparison of online buying intention: effects of internet usage, perceived risks, and innovativeness", paper presented at AUSWEB 02: The Eighth Australian World Wide Web Conference, Sunshine Coast, QLD, .

Peppers, D., Rogers, M., Dorf, B. (1999), *The One to One Fieldbook*, Doubleday, New York, NY, .

Selnes, F. (1998), "Antecedents and consequences of trust and satisfaction in buyer-seller relationships", *European Journal of Marketing*, Vol. 32 pp.305-22.

Shoebridge, N. (2005), "Marketers' measure", *BRW*, 1-7 December, pp.63.

Shoebridge, N. (2007), "Net advances", *BRW*, 30 August, pp.35.

Wright, M., Sharp, A., Sharp, B. (2002), "Market statistics for the Dirichlet model: using the Juster scale to replace panel data", *International Journal of Research in Marketing*, Vol. 19 No.1, pp.81-93.

Yaman, H.R. (2000), "A conceptual model of knowledge acquisition and utilisation through marketing research in tourism: development and an empirical assessment", Victoria University, Melbourne, .

## **Appendix. Multi-item inventories following purification**

### **Marketing orientation (MO) (11-point scales, disagree strongly – agree strongly)**

Our organisation's objectives are driven by our commitment to serving customers (cneedstr).

Our strategy for competitive advantage is based on our understanding of customer needs (undscust).

Our organisation's objectives are driven primarily by customer satisfaction (cussatis).

We measure customer satisfaction systematically and frequently (meascsat).

Our organisation's strategies are driven by our beliefs about how we can create greater value for our customers (strvalue).

**Customer-base volatility (CBV) (11-point scales, disagree strongly – agree strongly)**

Our customer base has changed very little over the years (custbase).

**Technological change (TC) (11-point scales, disagree strongly – agree strongly)**

The technology in our industry is changing rapidly (techchg).

**Innovation culture (IC) (11-point scales, disagree strongly – agree strongly)**

Top management in this organisation encourage innovative decisions, even knowing that some will lead to poor outcomes (topmgr).

Our organisation is usually the first in our industry to adopt new technology (techadopt).

We respond rapidly to competitors' actions (rapidres).

Our organisation is usually the first in our industry to launch new products (newprods).

**Traditional marketing effort (TME)Marketing communication (MMC)**

In the last three financial years (defined), the expenditure on each of the MARKETING COMMUNICATION elements shown has: 0 – decreased 100 per cent; 1 – decreased 76-99 per cent; 2 – decreased 51-75 per cent; 3 – decreased 26-50 per cent; 4 – decreased 1-25 per cent; 5 – no change; 6 – increased 1-25 per cent; 7 – increased 26-50 per cent; 8 – increased 51-75 per cent; 9 – increased 76-99 per cent; 10 – increased by 100 per cent or more:

- Mass communication (mascomxp).
- Targeted communication (trgcomxp).
- In-store communication (strcomxp).
- One-to-one communication (o2ocomxp).

In the past three financial years, the number of employees engaged in the areas shown has: 0 – decreased 100 per cent; 1 – decreased 76-99 per cent; 2 – decreased 51-75 per cent; 3 – decreased 26-50 per cent; 4 – decreased 1-25 per cent; 5 – no change; 6 – increased 1-25 per cent; 7 – increased 26-50 per cent; 8 – increased 51-75 per cent; 9 – increased 76-99 per cent; 10 – increased by 100 per cent or more:

- Marketing communication (mkcomno).

**Marketing logistics networks (MLN) (11-point scales, disagree strongly – agree strongly)**

Top management in this organisation encourage an organisation-wide or HOLISTIC APPROACH to logistics management (logistic).

Our organisation is oriented towards postponing logistical operations to the latest possible time and then accomplishing RAPID DELIVERY of required inventory (rapres).

Top management MONITOR SYSTEM VARIANCE in our organisation's logistics systems so as to reduce the effects of time disruptions on customers (minvarnc).

Our organisation aims to MINIMISE INVENTORY deployed throughout the logistical system (mininvnt).

Top management in our organisation encourage innovative programs to achieve MOVEMENT CONSOLIDATION and thereby reduce transport costs (movcons).

**Relationship management (RM) (11-point scales, disagree strongly – agree strongly)**

Top management ensure that employees have KNOWLEDGE ABOUT THE MARKET AND MARKET TRENDS (suppknow).

Our organisation is regarded by business customers and/or end-consumers as providing INFORMATION THAT CAN BE TRUSTED (trustinf).

We provide INFORMATION to business customers and/or end-consumers if DELIVERY PROBLEMS occur (delvprob).

We provide INFORMATION to business customers and/or end-consumers if there are QUALITY PROBLEMS (qualprob).

Our organisation FULFILS PROMISES made to business customers and/or end-consumers (promise).

We MAKE ADJUSTMENTS to meet business customer and/or end-consumer needs (adjust).

Our organisation is FLEXIBLE when business customers change their production process (flxprocs).

We are good at SOLVING DISPUTES before they create problems in our working relationships with business customers and/or end-consumers (dispute).

We make sure that PROBLEMS DO NOT ARISE in our working relationships with business customers and/or end-consumers (noprobs).

Our REPRESENTATIVES HAVE THE ABILITY to openly discuss solutions with customers and/or end-consumers when problems arise (discuss).

**Online marketing effort (OME)Online marketing communication (OMC)**

Our organisation maintains one or more web sites to communicate specific PRODUCT information (webprod) (11-point scale, disagree strongly – agree strongly).

Our organisation maintains one or more web sites to communicate BRAND information, e.g. brand positioning (webbrand) (11-point scale, disagree strongly – agree strongly).

In the past three financial years, expenditure on web sites to communicate the ORGANISATION'S NAME and INTENT has (wborgnam): 0 – decreased 100 per cent; 1 – decreased 76-99 per cent; 2 – decreased 51-75 per cent; 3 – decreased 26-50 per cent; 4 – decreased 1-25 per cent; 5 – no change; 6 – increased 1-25 per cent; 7 – increased 26-50 per cent; 8 – increased 51-75 per cent; 9 – increased 76-99 per cent; 10 – increased by 100 per cent or more.

In the past three financial years, expenditure on web sites to communicate specific PRODUCT information has (wbprdnam): 0 – decreased 100 per cent; 1 – decreased 76-99 per cent; 2 – decreased 51-75 per cent; 3 – decreased 26-50 per cent; 4 – decreased 1-25 per cent; 5 – no change; 6 – increased 1-25 per cent; 7 – increased 26-50 per cent; 8 – increased 51-75 per cent; 9 – increased 76-99 per cent; 10 – increased by 100 per cent or more.

In the past three financial years, expenditure on web sites to communicate BRAND information has (wbbranam): 0 – decreased 100 per cent; 1 – decreased 76-99 per cent; 2 – decreased 51-75 per cent; 3 – decreased 26-50 per cent; 4 – decreased 1-25 per cent; 5 – no change; 6 – increased 1-25 per cent; 7 – increased 26-50 per cent; 8 – increased 51-75 per cent; 9 – increased 76-99 per cent; 10 – increased by 100 per cent or more.

**Online marketing logistics (OMLN) (11-point scales, disagree strongly – agree strongly)**

Our organisation uses the Web to SUPPORT SALES ENQUIRIES concerning orders placed through marketing channels other than the Web (servictr).

Our organisation uses the Web to PROVIDE LOGISTICAL INFORMATION (e.g. inventory, order-tracking) in real-time to customers (provinfo).

Our organisation uses the Web to REDUCE LOGISTICS COSTS (cutlgcos).

Our organisation's web site(s) are fully transactional and CONNECTED TO THE ORGANISATION'S BACK-END PROCESSES (e.g. billing and accounts payable) (backend).

**Online relationship management (ORM) (11-point scales, disagree strongly – agree strongly)**

Our organisation uses the Web to INTERACT with specific business customers and/or end-consumers (interact).

Our organisation uses the Web to provide CUSTOMER SERVICE, e.g. complaint handling (custserv).

Our web site(s) FACILITATE RELATIONSHIP development and maintenance with business customers and/or end-consumers (facilrel).

Our organisation uses the Web to LEARN about business customer and/or end-consumer requirements (learn).

### **Organisational performance (OP) Non-financial organisational performance (MOP)**

In the last three financial years, our organisation's performance on the measures shown has: 0 – decreased 100 per cent; 1 – decreased 76-99 per cent; 2 – decreased 51-75 per cent; 3 – decreased 26-50 per cent; 4 – decreased 1-25 per cent; 5 – no change; 6 – increased 1-25 per cent; 7 – increased 26-50 per cent; 8 – increased 51-75 per cent; 9 – increased 76-99 per cent; 10 – increased by 100 per cent or more:

- Competitive market measures (e.g. market share, share of voice, relative price, share of promotions) (compmeas).
- Consumer (end-user) behaviour (e.g. penetration/number of users/consumers and, user/consumer) (consmeas).
- Consumer (end-user) in-the-mind (e.g. awareness, attitudes, satisfaction, commitment, buying intentions and perceived quality) (eusrmeas).
- Direct (trade) customer (e.g. distribution/availability, customer profitability, satisfaction and service quality) (dircmeas).
- Innovativeness (e.g. number of new products, revenue generated from new products as a percentage of sales) (innvmeas).
- Main intangible asset(s) built by your organisation's marketing efforts (e.g. brand equity, goodwill, brand health, brand strength and reputation) (intanmeas).
- Financial measures (e.g. sales volume/turnover and profit contribution) (finmeas).

At least partly as a result of our marketing activity, our PERCEIVED QUALITY/ESTEEM in the last financial year increased compared to the previous year (percqual) (11-point scale, disagree strongly – agree strongly).

### **Financial organisational performance (FOP) (11-point scales, disagree strongly – agree strongly)**

At least partly as a result of our marketing activity, our SALES VOLUME (unit sales) in the last financial year increased compared to the previous year (unitsale).

At least partly as a result of our marketing activity, our SALES REVENUE in the last financial year increased compared to the previous year (salesrev).

At least partly as a result of our marketing activity, MARKET SHARE (SOM) in the last financial year increased compared to the previous year (mktshare).

At least partly as a result of our marketing activity, our GROSS MARGIN in the last financial year increased compared to the previous year (grossmrg).

At least partly as a result of marketing activity, our PROFIT in the last financial year increased compared to the previous year (mkprofit).

### **Corresponding author**

Stewart Adam can be contacted at: [stewart.adam@deakin.edu.au](mailto:stewart.adam@deakin.edu.au)