

Performance implications of market orientation, marketing resources, and marketing capabilities

Liem Viet Ngo, *The University of New South Wales, Australia*

Aron O'Cass, *University of Tasmania, Australia*

Abstract Drawing on the competitive capability theory, this paper examines how market orientation, marketing resources, and marketing capabilities contribute to firm performance. The empirical results show that being market oriented influences the level of marketing resources firms possess and the capability to deploy such resources. The findings show marketing resources and marketing capabilities are significant drivers of firm performance, and their impact is greater when they are complementary to each other.

Keywords market orientation; marketing resources; marketing capabilities; competitive capability theory

Introduction

A central objective of strategic marketing research has been to understand the effects of firm resources and capabilities on firm performance (Barney, 1991; Eisenhardt & Martin, 2000; R.B. Grant, 1991; Makadok, 2001; Morgan, Vorhies, & Mason, 2009; Teece, Pisano, & Shuen, 1997; Wernerfelt, 1984). One focus of this literature examines whether resource–capability or capability–capability complementarities exist and whether they help achieve superior firm performance (e.g. Menguc & Auh, 2006; Milgrom & Roberts, 1990; Moorman & Slotegraaf, 1999; Morgan et al., 2009). The underlying rationale for this stream of research is that the firms' effectiveness and efficiency can benefit from the complementarity of resources and capabilities, which refers to 'the degree to which the value of an asset is dependent on the level of other assets' (Moorman & Slotegraaf, 1999, p. 241). Milgrom and Roberts (1990, p. 514) state 'the defining characteristic of . . . complements is that if the levels of any subset of the activities are increased, then the marginal return to increases in any or all of the remaining activities rises'.

As such, firms exhibiting complementarities among resources and capabilities are more likely to restrict competitors from imitation, thus increasing firm effectiveness (Dierickx & Cool, 1989; Moorman & Slotegraaf, 1999). This complementary effect can occur in different forms such as resources–resources, resources–capabilities, and capabilities–capabilities. For example, research has examined the synergistic

performance impact of complementary marketing capabilities and technology capabilities (Moorman & Slotegraaf, 1999; Song, Droge, Hanvanich, & Calantone, 2005), market orientation (MO) and innovativeness (Menguc & Auh, 2006), and MO and marketing capabilities (Morgan et al., 2009).

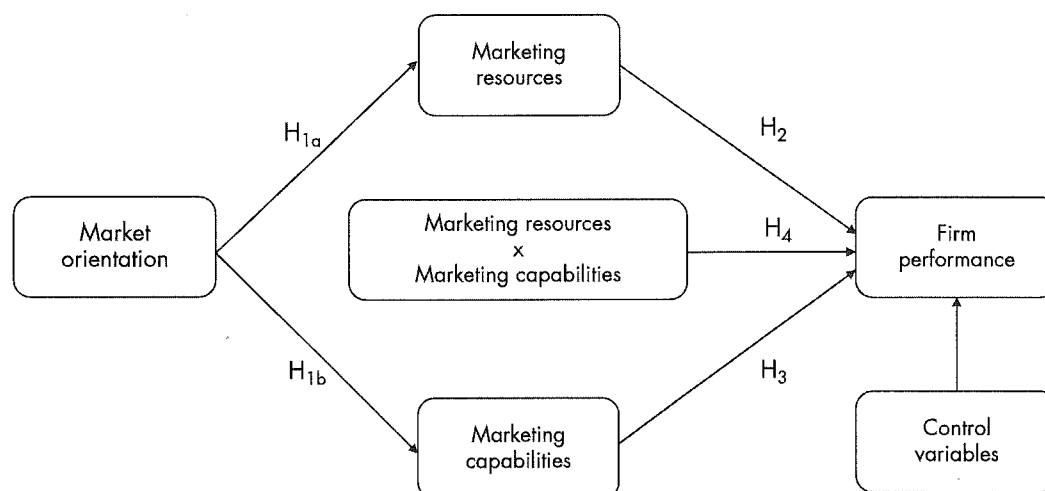
In contributing to this stream of research, this study addresses two issues that warrant attention in strategic marketing: (1) the relationship between MO, marketing resources, and marketing capabilities; and (2) the performance impact of the complementarity (i.e. interaction) between marketing resources and marketing capabilities (in addition to main effects). Specifically, this study makes two main contributions. First, this study sheds new light on the degree to which firms possess specific marketing resources and marketing capabilities to implement MO. We believe that MO is the market-sensing capability that provides a knowledge base upon which firms develop a distinctive combination of marketing resources and marketing capabilities in their efforts to outperform competitors (Menguc & Auh, 2006; Morgan et al., 2009; Zhou, Li, & Zhou, 2008; Zhou, Yim, & Tse, 2005). This configuration of MO, marketing resources, and marketing capabilities facilitates the linkage between what customers expect from the firms marketplace offerings and what is delivered to customers in marketplace offerings.

Second, this study illuminates the relationships between marketing resources, marketing capabilities, and their interaction effect on firm performance. We argue, and show empirically, that marketing resources and marketing capabilities are complementary and their interaction enhances firm performance. This view provides impetus for new empirical support for the contribution of resource possession and capability building to firm performance (see also Makadok, 2001).

Theoretical framework and hypotheses

Building on competitive capability theory (Day, 1994), this study develops a model shown in Figure 1 that links a firm's MO through marketing resources and marketing

Figure 1 Theoretical framework.



capabilities to specific firm performance outcomes. Specifically, this study examines how MO influences marketing resources and marketing capabilities, and how marketing resources, marketing capabilities, and their interaction contribute to firm performance.

MO, marketing resources, and marketing capabilities

Strategic orientations reflect the firm's philosophy of doing business through a deeply rooted set of beliefs that guide behaviours to create economic rents (Noble, Sinha, & Kumar, 2002; Zhou et al., 2005). For example, innovation orientation refers to the belief in the willingness to change, which encourages and fosters the adoption of new ideas throughout the firm (Amabile, Conti, Coon, Lazenby, & Herron, 1996; Hurley & Hult, 1998). On the other hand, production orientation focuses predominantly on production efficiencies, while selling orientation emphasises short-term sales maximisation (Noble et al., 2002). The focus here is on MO as a driver of resource possession and capability to deploy resources at the functional level. Specifically, drawing on Vorhies and Morgan (2005), this study focuses on marketing resources and marketing capabilities. Marketing resources refers to the extent to which a firm possesses knowledge and resources related to marketing mix activities (e.g. product, price, distribution, and marketing communication). On the other hand, marketing capabilities refers to a firm's ability to perform marketing routines (e.g. marketing mix activities) through which the firm transforms available resources into valuable outputs (Vorhies & Morgan, 2005).

Some researchers use MO as a building block for research identifying and studying firm-specific factors that explain firm performance differentials (Han, Kim, & Srivastava, 1998; Hooley, Greenley, Cadogan, & Fahy, 2005; Kirca, Jayachandran, & Bearden, 2005; Menguc & Auh, 2006; Zhou, Brown, & Dev, 2009; Zhou et al., 2008). In particular, capability-based proponents suggest examining the contribution of MO to firm performance via firm resources and capabilities (Hooley et al., 2005). MO is the organisation-wide generation, dissemination, and response to market intelligence pertaining to market participants (e.g. customers, competitors, and suppliers) and influencing factors (e.g. social, regulatory, and macroeconomic) (Jaworski & Kohli, 1993; Matsuno & Mentzer, 2000). Being market-oriented places the highest priority on staying close to the marketplace and creating superior customer value (Slater & Narver, 1998; Zhou et al., 2008).

To this end, MO provides a unique know-what information base for better serving target customers. As such, MO directs the possession and deployment of necessary resources for the creation and maintenance of superior customer value at the functional level (Zhou et al., 2005). As the underlying premise of MO's effect is the capacity to create customer value, the marketing function is driven by contributing to customer value (Hooley et al., 2005). Thus MO and the marketing function are both crucial for the creation of customer value. Where MO exists, high levels of marketing resources and the strong marketing capabilities for the implementation of MO are expected. Therefore, we hypothesise that:

- H1: MO is positively related to (a) higher levels of marketing resource possession and (b) superior marketing capability deployment.*

Marketing resources, marketing capabilities, and firm performance

Firm performance differentials can be the result of heterogeneity in resources across firms (Barney, Wright, & Ketchen, 2001). Indeed, firm-specific resources, which differ in value, rarity, inimitability, and non-substitute (VRIN), drive superior firm performance (Barney, 1991; Wernerfelt, 1984). Ultimately, the value of resources must be reflected in superior marketplace performance (Srivastava, Fahey, & Christensen, 2001). Fahy et al. (2000, p. 75) specify that 'variation in the development of marketing resources is an important issue in terms of firm-level performance'. As such, we believe that the acquisition and development of marketing resources are directed at achieving superior marketplace performance. These performance impacts of marketing resources are formed on the basis of superior marketing knowledge and resources accumulated to engage in marketing activities and marketing management (e.g. product, price, distribution, marketing communication, market intelligence management, and marketing planning). Therefore, we hypothesise that:

H2: Marketing resources are positively related to firm performance.

Despite the progress in explaining the resources–performance relationship, capability-based theorists argue that explaining performance differentials between firms is more than simple heterogeneity in firms' resource possession (Priem & Butler, 2001; Ray, Barney, & Muhanna, 2004). In fact, the capabilities by which firms' resources are deployed in ways that match firms' dynamic market environment explain variance in firm performance over time (Eisenhardt & Martin, 2000; Makadok, 2001; Morgan et al., 2009; Teece et al., 1997). Resource deployment facilitates the manipulation of resources into the rent creation process (Eisenhardt & Martin, 2000; Ray et al., 2004). In this sense, the impact of marketing capabilities on firm performance has been of significant interest to marketing scholars (e.g. Capron & Hulland, 1999; Day, 1994; Fahy et al., 2000; Krasnikov & Jayachandran, 2008; Slotegraaf & Dickson, 2004; Slotegraaf, Moorman, & Inman, 2003; Vorhies & Morgan, 2005; Woodside, Sullivan, & Trappey, 1999). Capron and Hulland (1999) find that the deployment of marketing expertise has a significant effect on market share and profitability. Similarly, Morgan et al. (2009) and Woodside et al. (1999) also find that distinctive marketing competencies influence firm performance. Marketing capabilities enable firms to create barriers to competitive imitation and acquisition, thus driving superior firm performance (Krasnikov & Jayachandran, 2008). Therefore, we hypothesise that:

H3: Marketing capabilities are positively related to firm performance.

Prior research acknowledges the importance of the interaction between firm resources and deployment capabilities (Grant, 1996; Morgan et al., 2009). For example, marketing capabilities produce greater improvement in firm performance when combined with other complementary resources and capabilities such as market-based knowledge assets (Day, 1994; Madhavan & Grover, 1998; Morgan et al., 2009) and technology capabilities (Moorman & Slotegraaf, 1999; Song et al., 2005). As well as emphasising the independent performance impacts of marketing resources and marketing capabilities, the present study also suggests that a firm may obtain performance advantage from the complementarity of both marketing

resources and marketing capabilities. The rationale for such an interaction is that marketing capabilities are market-related mechanisms through which firm resources (e.g. marketing resources) are deployed to generate economic rents (Morgan et al., 2009). In addition, Slotegraaf et al. (2003) find that market deployment is complementary with firms' marketing resources in enhancing sales volume. Therefore, complementarity between marketing resources and their deployment occurs when the returns associated with marketing resources increase in the presence of marketing capabilities. Therefore, we hypothesise that:

H4: The interaction between marketing resources and marketing capabilities positively influences firm performance (in addition to their main effect).

Methods

Sample and measures

An empirical study was designed to collect data from manufacturing and service firms in Australia. A sample of 1000 firms was selected from a National Business Database identifying senior executives in single-business firms with >20 employees. A self-administrated questionnaire was used as the primary means for data collection, which followed the procedure adopted by Jaworski and Kohli (1993). Senior managers were key respondents because of their specific knowledge and expertise of how their marketing resources and capability are managed. Contact was made with all identified key informants and their participation sought. A survey and personalised letter was then sent to each informant. After 14 days, a reminder letter was sent to all key informants. In total, 163 useable surveys were returned, producing a response rate of 16.3%. The sample consisted of 60% of firms that served only domestic markets and 40% that served international markets. Approximately 45% of the sample operated within the service sector and 55% within the manufacturing sector.

Building on Jaworski and Kohli (1993) and Matsuno and Mentzer (2000), 18 items were employed tapping to three components of MO (e.g. intelligence generation, intelligence dissemination, and responsiveness). Following Matsuno and Mentzer (2000), we broadened the domain of market factors as consisting of market participants (e.g. competitors, suppliers, and buyers) and influencing factors (e.g. social, cultural, regulatory, and macroeconomic factors). The respondents indicated the extent to which they agreed or disagreed with statements about the firm's market-oriented behaviour, with 1 = 'strongly disagree' and 7 = 'strongly agree'.

Drawing on Vorhies and Morgan (2005), we measured *marketing resources* by developing four items. The respondents indicated the extent to which they agreed or disagreed with the four statements about the availability of knowledge and skills, with 1 = 'strongly disagree' and 7 = 'strongly agree'. The instructions and items asked for the respondent to think in terms of the possession of the resources relative to their industry standard. This relative judgement, according to Slotegraaf and Dickson (2004), allows for the removal of distortions created by differences across industries.

Marketing capabilities was measured using five items adapted from Vorhies and Morgan (2005). The respondents indicated how well their firm performed marketing

mix activities relative to the industry standard. A seven-point scale was used, ranging from 1 = 'not very well' and 7 = 'very well'. *Firm performance* was measured using four items adapted from Jaworski and Kohli (1993), Matsuno and Mentzer (2000), and Moorman and Rust (1999). The respondents rated firm performance on sales, market share, profitability, and overall marketplace performance relative to their stated objectives. The response set for these items was a seven-point scale ranging from 1 = 'very poor' to 7 = 'very good'.

Analyses and results

We used partial least squares (PLS) to estimate the theoretical model. Hypotheses were tested following the procedure that Chin, Barbara, Marcolin, and Newsted (2003) recommend. First, we standardised indicators reflecting the constructs that form the interaction effect to reduce the risk of multicollinearity and make for a better interpretation (Aiken & West, 1991). An examination of the variance inflation factors shows a range from 1.43 to 2.20, which is less than the benchmark of 6 (Hair, Anderson, Tatham, & Black, 1998), indicating that multicollinearity among variables is not a concern. Second, we created product indicators reflecting the latent interaction construct by multiplying the two sets of indicators. Finally, the PLS procedure was then used to estimate both outer-measurement models and the inner structural model. We included industry type and firm size as control variables. Specifically, we dummy-coded firms as either manufacturing or service businesses, and calculated the logarithm of the number of total full-time employees for firm size.

We assessed common method bias using two tests that Podsakoff, MacKenzie, Podsakoff, and Lee (2003) and Lindell and Whitney (2001) recommend. First, we conducted a Harmon's single-factor test, producing seven factors that had eigenvalues >1. These factors together accounted for 74.38% of total explained variance, of which the first factor accounted for 37.10%. Second, we employed the marker variable technique (Lindell & Whitney, 2001; Malhotra, Kim, & Patil, 2006) and selected job title (marketing vs. non-marketing executives) as a marker variable to control for common method variance ($r_M = .07$, $p = .41$). The mean change in the correlations of the five key constructs ($r_U - r_A$) when partialling out the effect of r_M was .04, providing no evidence of common method bias.

As Table 1 shows, all the indicators in the outer-measurement models had acceptable bootstrap critical ratios (>1.96) with loadings (.65 to .92) greater than the recommended .5 (Hulland, 1999), thus demonstrating adequate individual item reliabilities. Average variance extracted (AVEs) values for all constructs were uniformly acceptable, ranging from .50 to .76. Market orientation demonstrates a marginal but acceptable AVE value of .45, which is consistent with similar benchmarks reported in the marketing literature (e.g. Green, Barclay, & Ryans, 1995).

We examined convergent validity using the internal consistency measure (composite reliability) that Fornell and Larcker (1981) recommend. This measure is a better choice than coefficient alpha (Shook, Ketchen, Hult, & Kacmar, 2004). The second column of Table 2 shows internal consistency values for all constructs. These values (ranging from .90 to .94) were above the threshold of .70 (cf. Nunnally, 1978).

Table 1 Measurement model results.

Constructs and manifest variables	Loading
<i>Market orientation (MO) AVE = .45</i>	
Please indicate how much you agree or disagree with each of the following statements. <i>Seven-point scale with 1 = 'strongly disagree' to 7 = 'strongly agree' scale anchors.</i>	
<i>Market intelligence generation AVE = .50</i>	
Our business has generated information about . . .	
1. its customers (e.g. feedback on delivered products and/or services, needs, product/service preference).	.72
2. its competitors (e.g. competitive products and/or services, pricing, promotion campaigns, strategic moves).	.66
3. its suppliers (e.g. manufacturing process, industry practices, clientele).	.69
4. general social and economic trends (e.g. environmental consciousness, emerging lifestyles).	.76
5. macroeconomic information (e.g. interest rate, exchange rate, gross domestic product, industry growth rate, inflation rate).	.76
6. regulation from government and regularly bodies (e.g. Department of Foreign Affairs and Trade, Parliament).	.65
<i>Market intelligence dissemination AVE = .62</i>	
Our business has disseminated information about . . .	
1. its customers (e.g. feedback on delivered products and/or services, needs, product/service preferences) throughout the business via a range of communication tools (e.g. circulated documents, cross-functional meetings).	.82
2. its competitors (e.g. competitive products and/or services, pricing, promotion campaigns, strategic moves, etc.) throughout the business via a range of communication tools (e.g. circulated documents, cross-functional meetings).	.75
3. its suppliers (e.g. manufacturing process, industry practices, clientele, etc.) throughout the business via a range of communication tools (e.g. circulated documents, cross-functional meetings).	.79
4. general social and economic trends (e.g. environmental consciousness, emerging lifestyles, etc.) throughout the business via a range of communication tools (e.g. circulated documents, cross-functional meetings).	.82
5. regulation (e.g. Department of Foreign Affairs and Trade, Parliament) throughout the business via a range of communication tools (e.g. circulated documents, cross-functional meetings).	.76
6. general macroeconomic information (e.g. interest rate, exchange rate, gross domestic product, industry growth rate, inflation rate, etc.) throughout the business via a range of communication tools (e.g. circulated documents, cross-functional meetings).	.81
<i>Responsiveness to market intelligence AVE = .61</i>	
Our business has responded to information about . . .	
1. customers that it generated and/or disseminated.	.76
2. competitors that it generated and/or disseminated.	.69
3. suppliers that it generated and/or disseminated.	.74
4. general social and economic trends that it generated and/or disseminated.	.88

(Continued)

Table 1 (Continued).

Constructs and manifest variables	Loading
5. regulatory policies that it generated and/or disseminated.	.78
6. macroeconomic information that it generated and/or disseminated.	.83
<i>Marketing resources (MR) AVE = .76</i>	
How strongly do you agree or disagree with each of the following statement about your marketing resources relative to industry standard? Seven-point scale with 1 = 'strongly disagree' to 7 = 'strongly agree' scale anchors.	
1. We have sufficient knowledge to engage in marketing activities (product, price, distribution, and marketing communication).	.84
2. We have sufficient resources to engage in marketing activities (product, price, distribution, and marketing communication).	.88
3. We have sufficient knowledge to engage in marketing management (market intelligence management, marketing planning).	.87
4. We have sufficient resources to engage in marketing management (market intelligence management, marketing planning).	.90
<i>Marketing capabilities (MC) AVE = .68</i>	
Relative to the industry standard, how well has your firm performed on the following activities:	
1. Product development (quantities, design, etc.).	.87
2. Target market development (who, where, when, and in what quantity).	.84
3. Pricing.	.83
4. Distribution channels.	.80
5. Marketing communication.	.79
<i>Firm performance (FP) AVE = .69</i>	
Relative to your firm's stated objectives, how well has your firm performed on:	
1. Sales.	.84
2. Market share.	.73
3. Profitability.	.81
4. Overall marketplace performance.	.92

We assessed the discriminant validity of the four constructs following a procedure suggested by Gaski and Nevin (1985) that satisfactory discriminant validity among constructs is attained when the correlation between two composite constructs is not higher than their respective reliability estimates. As Table 2 shows, no individual correlations (.33 to .72) were higher than their respective reliabilities (.90 to .94), thus indicating satisfactory discriminant validity of all constructs.

Table 2 Construct-level measurement statistics and correlation matrix.

Constructs	Internal consistency	Market orientation	Marketing resources	Marketing capabilities
Market orientation	.94			
Marketing resources	.93	.52		
Marketing capabilities	.92	.53	.72	
Firm performance	.90	.33	.44	.45

Hypotheses tests

With confidence in measurement models, we examined main effects by estimating Model A (non-interaction model). Results indicate that the predictive relevance of Model A, examined via the average variance accounted for (AVA) was of acceptable magnitude at .26, as Table 3 shows. H_{1a} , which argues that MO positively influences marketing resources, is supported ($\beta = .52$, $t = 8.06$). Similarly, MO positively influences marketing capabilities ($\beta = .53$; $t = 8.83$), supporting H_{1b} . Marketing resources does significantly influence firm performance ($\beta = .25$; $t = 2.59$). Thus H_2 is supported. H_3 , which predicts a positive effect of marketing capabilities on firm performance is supported ($\beta = .27$; $t = 2.57$).

Second, we included the interaction variable in addition to main effects and estimated Model B (interaction model). Specifically, we created product indicators of the interaction variable (marketing resources $\times$ marketing capabilities) by multiplying standardised indicators of marketing resources and that of marketing capabilities, as in regression analysis. The results show that the interaction term positively influence firm performance ($\beta = .18$; $t = 1.78$), thus supporting H_4 . The predictive relevance of Model B (AVA) was of acceptable magnitude at .27. Using procedures that Tabachnick and Fidell (2007) suggest, the R^2 increase (ΔR^2) attributable to the interaction effect is statistically significant at .05 ($F_{1, 160} = 6.49 > F_{critical} = 3.84$).

Model fit

We used the goodness-of-fit index (GoF) to assess the fit of both outer-measurement and inner-structural models to the data simultaneously (see Tenenhaus, Vinzi, Chatelin, & Lauro, 2005). The GoF is a compromise between communality and redundancy in which the communality index measures the quality of the measurement model for each construct and the redundancy index measures the quality of the structural model for each endogenous construct taking into account

Table 3 Partial least squares results for theoretical model.

Hypothesised path	Model A (non-interaction)				Model B (interaction)			
	Variance				Variance			
	Path weights	due to path	R^2	Critical ratio	Path weights	due to path	R^2	Critical ratio
Hypothesis 1a: MO $\rightarrow$ MR	.52	.27 ^a	.27	8.06 ^b	.52	.27 ^a	.27	8.21 ^b
Hypothesis 1b: MO $\rightarrow$ MC	.53	.28 ^a	.28	8.83 ^b	.53	.28 ^a	.28	8.63 ^b
Hypothesis 2: MR $\rightarrow$ FP	.25	.11 ^a	.23	2.59 ^b	.31	.14 ^a	.26	3.02 ^b
Hypothesis 3: MC $\rightarrow$ FP	.27	.12 ^a		2.57 ^b	.26	.12 ^a		2.48 ^b
Hypothesis 4: MR*MC $\rightarrow$ FP					.18	.01 ^a		1.78 ^c
<i>Controls</i>								
Firm size $\rightarrow$ FP	.02	.00		.24	.03	.00		.39
Industry type $\rightarrow$ FP	.09	.00		1.35	.07	.00		1.51
AVA			.26				.27	

Note: MO, market orientation; MR, marketing resources; MC, marketing capabilities; FP, firm performance. ^aExceeds minimum acceptable level .01; ^{b,c}exceeds minimum acceptable level 1.96 and 1.65, $p < .01$ and .05 respectively.

to the measurement model (Tenenhaus et al., 2005). The GoF is computed by taking the square root of the product of the average communality of all constructs and the average R^2 value of the endogenous constructs as: $GoF = \sqrt{\text{communality} \times \overline{R^2}}$. The computed GoF for the non-interaction and interaction models were .45 and .46 respectively, indicating good fit of the models to the data (see Schepers, Martin, & de Ruyter, 2005). Further, the analysis includes Q^2 predictive relevance (i.e. predictive sample reuse technique), as Stone (1974) provides. Q^2 represents a measure of how well the model reconstructs the observed values. Using this procedure and with omissions distances between 5 and 15, the Q^2 value for the non-interaction and interaction models were .33 and .26, indicating satisfactory predictive relevance of the models.

Discussion and directions for future research

Contributions to theory

This study makes two main contributions to marketing theory, specifically strategic marketing. First, we contribute to a better understanding of the relationship between MO, marketing resources, and marketing capabilities. Second, we contribute to a clearer understanding of the performance impact of the complementarity between marketing resources and marketing capabilities. Specifically, this study sheds light on the extent that firms possessing specific marketing resources and marketing capabilities are better able to implement MO. We show that MO acts as the market-sensing capability that provides a knowledge base upon which firms develop a distinctive combination of marketing resources and marketing capabilities in their efforts to outperform competitors. This configuration of MO, marketing resources, and marketing capabilities facilitates the linkage between what customers expect from a firm's marketplace offerings and what is delivered to customers in specific marketplace offerings.

Further, this study offers new insight into marketing theory by highlighting the relationships between marketing resources, marketing capabilities, and their complementary effect on firm performance. The results of this study show that marketing resources and marketing capabilities are complementary and that complementarity enhances firm performance. The results provide new knowledge of how complementary resource possession and capability work together in enhancing firm performance.

Our findings indicate that being market oriented influences the degree to which firms possess marketing resources and the capability of deploying these resources via marketing capabilities. These findings provide further support to an emerging theoretical contention that MO is a pivotal resource that influences a firm's operation, but the potential value of MO should complement with other firm resources and capabilities (Menguc & Auh, 2006; Morgan et al., 2009; Zhou et al., 2008; Zhou et al., 2005). In addition, the findings are also in line with the growing body of work that suggests studying MO within broader models, rather than simply linking MO directly with firm performance (Han et al., 1998; Hult, Ketchen, & Slater, 2005; Zhou et al., 2008).

This study is perhaps among the first to test empirically the theoretical proposition that marketing resources and marketing capabilities have a direct and synergistic effect on firm performance. Specifically, the findings indicate that marketing resources and marketing capabilities contribute to superior firm performance. Importantly, the findings show that the firm performance impact is greater with the presence of the complementarity between marketing resources and marketing capabilities. This finding provides new empirical support for the competitive capability theory concerning whether resource possession and capability building are complementary or substitutable for each other in explaining performance differentials between firms (Hitt, Hoskisson, Ireland, & Harrison, 1991; Makadok, 2001). While the extant literature has given attention to the possession of resources within the setting of resource picking or the entrepreneurial phase of resources with resource discovery, what is missing is the performance impact of the interaction between resource possession (i.e. the acquisition of marketing resources) and capability building (i.e. marketing capabilities to deploy resources). Thus this study joins an emerging body of research that places attention on the synergistic performance impact of complementary resources and capabilities (Menguc & Auh, 2006; Moorman & Slotegraaf, 1999; Morgan et al., 2009; Song et al., 2005).

Managerial implications

Our findings provide managers with a deeper understanding of how to achieve superior firm performance via MO, marketing resources, and marketing capabilities. First, past research indicates that outside-in processes, such as MO, play an important role in creating and sustaining superior firm performance (Day, 1994; Jaworski & Kohli, 1993). By showing that MO influences the firm's marketing resources and marketing capabilities, which in turn influence performance, our study reinforces the need to manage not only the resources and capabilities within the firm but also their complementarity. We show managers that MO plays an equally important role in resource-allocation decisions as well as capability development. Importantly, managers should recognise that effective resource-allocation decisions should take into account the firm's need for both outside-in processes (e.g. MO) and inside-out processes (e.g. marketing resources and marketing capabilities). In particular, resource-allocation decisions on marketing resources and marketing capabilities are of primary importance in establishing future sales, market share, and profitability, and such decisions should be guided by the firm's unique know-what information about changing market requirements. This configuration of MO, marketing resources, and marketing capabilities is necessary because it facilitates the linkage between what customers expect from the firm's marketplace offerings and what is delivered to customers in marketplace offerings.

Second, studies indicate that realising potential value of strategic resources requires alignment with other important organisational elements. Our study supports this perspective and shows managers that firm performance is impacted via the complementarity between marketing resources and marketing capabilities. This finding confirms the possibility of obtaining synergy through resources-capability complementarity. Managers who search for synergistic performance impact should understand that marketing resources do offer synergistic effects with marketing capabilities in influencing sales, market shares, and profitability.

Limitations and directions for further research

The present study has several limitations. Although the use of subjective measures is common in the marketing literature, the interpretation of the findings is limited because of the self-reported measures. Future studies can benefit from using objective measures to complement self-reports in measuring firm performance as well as marketing resources and its deployment. Acknowledging the limitation of single-source data, this study also suggests that using multiple informants might provide additional insights on the relationships investigated and further facilitate the generalisability of the findings in future research. In line with Ethiraj, Kale, Krishnan, and Singh (2005) and Ray et al. (2004), future research may focus not only on a firm's business orientation (e.g. innovation orientation, production orientation, selling orientation) and business processes (e.g. innovation, production, and selling), when exploring the resource–capability logic at business process level, but also on context specific issues, as not all resources and capabilities equally contribute to firm performance (Ethiraj et al., 2005).

This study contributes to the literature through the resource–capability logic of firm performance that specifies the complementary strategic fit between a resource and a set of capabilities in explaining performance differential. The focus on the resource–capability logic at the business process level and in the context of marketing using MO, marketing resources, marketing capabilities, and specific marketplace performance as such helps advance understanding of the role of intangible market-based assets and complementary capabilities.

References

- Aiken, L.S., & West, S.G. (1991). *Multiple regression: Testing and interpreting interactions*. Newbury Park, CA: Sage.
- Amabile, T.M., Conti, R., Coon, H., Lazenby, J., & Herron, M. (1996). Assessing the work environment for creativity. *Academy of Management Journal*, 39, 1154–1184.
- Barney, J.B. (1991). Firm resources and sustained competitive advantage. *Journal of Management*, 17, 99–120.
- Barney, J.B., Wright, M., & Ketchen, D.J. (2001). The resource-based view of the firm: Ten years after 1991. *Journal of Management*, 27, 625–641.
- Capron, L., & Hulland, J. (1999). Redeployment of brands, sales forces, and general marketing management expertise following horizontal acquisitions: A resource-based view. *Journal of Marketing*, 63, 41–54.
- Chin, W., Barbara, W., Marcolin, L., & Newsted, P.R. (2003). A partial least squares latent variable modeling approach for measuring interaction effects: Results from a Monte Carlo simulation study and electronic-mail emotion/adoption study. *Information System Research*, 14, 189–217.
- Day, G.S. (1994). The capabilities of market-driven organizations. *Journal of Marketing*, 58, 37–52.
- Dierickx, I., & Cool, K. (1989). Asset stock accumulation and sustainability of competitive advantage. *Management Science*, 35, 1504–1511.
- Eisenhardt, K.M., & Martin, J.A. (2000). Dynamic capabilities: What are they? *Strategic Management Journal*, 21, 1105–1121.
- Ethiraj, S.K., Kale, P., Krishnan, M.S., & Singh, J.V. (2005). Where do capabilities come from and how do they matter? A study in the software services industry. *Strategic Management Journal*, 26, 25–45.

- Fahy, J., Hooley, G., Cox, T., Beracs, J., Fonfara, K., & Snoj, B. (2000). The development and impact of marketing capabilities in Central Europe. *Journal of International Business Studies*, 31(1), 63–81.
- Fornell, C., & Larcker, D.F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research*, 18, 39–50.
- Gaski, J.F., & Nevin, J. (1985). The differential effects of exercised and unexercised power sources in a marketing channel. *Journal of Marketing Research*, 22, 130–142.
- Grant, R.B. (1991). A resource-based theory of competitive advantage: Implications for strategy formulation. *California Management Review*, 33(4), 114–135.
- Grant, R.M. (1996). Toward a knowledge-based theory of the firm. *Strategic Management Journal*, 17, 109–122.
- Green, D.H., Barclay, D.W., & Ryans, A.B. (1995). Entry strategy and long-term performance: Conceptualization and empirical examination. *Journal of Marketing*, 59(4), 1–16.
- Hair, J.F., Anderson, R.E., Tatham, R.L., & Black, W.C. (1998). *Multivariate data analysis*. Englewood Cliffs, NJ: Prentice Hall.
- Han, J.K., Kim, N.K., & Srivastava, R.K. (1998). Market orientation and organizational performance: Is innovation a missing link? *Journal of Marketing*, 62, 30–45.
- Hitt, M.A., Hoskisson, R.E., Ireland, R.D., & Harrison, J.S. (1991). Are acquisitions a poison pill for innovation? *Academy of Management Executive*, 5, 22–34.
- Hooley, G.J., Greenley, G.E., Cadogan, J.W., & Fahy, J. (2005). The performance impact of marketing resources. *Journal of Business Research*, 58, 18–27.
- Hulland, J. (1999). Use of partial least squares (PLS) in strategic management research: A review of four recent studies. *Strategic Management Journal*, 20(2), 195–204.
- Hult, G.T.M., Ketchen, D.J., & Slater, S.F. (2005). Market orientation and performance: An integration of disparate approaches. *Strategic Management Journal*, 26, 1173–1181.
- Hurley, R., & Hult, G.T.M. (1998). Innovation, market orientation, and organizational learning: An integration and empirical examination. *Journal of Marketing*, 62, 42–54.
- Jaworski, B.J., & Kohli, A.K. (1993). Market orientation: Antecedents and consequences. *Journal of Marketing*, 57, 53–71.
- Ketchen, D.J., Hult, G.T.M., & Slater, S. (2007). Toward greater understanding of market orientation and the resource-based view. *Strategic Management Journal*, 28, 961–964.
- Kirca, A.H., Jayachandran, S., & Bearden, W.O. (2005). Market orientation: A meta-analytic review and assessment of its antecedents and impact on performance. *Journal of Marketing*, 69, 24–41.
- Krasnikov, A., & Jayachandran, S. (2008). The relative impact of marketing, research-and-development, and operations capabilities on firm performance. *Journal of Marketing*, 72, 1–11.
- Lindell, M.K., & Whitney, D.J. (2001). Accounting for common method variance in cross-sectional research designs. *Journal of Applied Psychology*, 86, 114–121.
- Madhavan, R., & Grover, R. (1998). From embedded to embodied knowledge: New product development as knowledge management. *Journal of Marketing*, 62(4), 1–12.
- Makadok, R. (2001). Toward a synthesis of the resource-based and dynamic-capability views of rent creation. *Strategic Management Journal*, 22, 387–401.
- Malhotra, N.K., Kim, S.S., & Patil, A. (2006). Common method variance in IS research: A comparison of alternative approaches and a reanalysis of past research. *Management Science*, 52, 1865–1883.
- Matsuno, K., & Mentzer, J.T. (2000). The effects of strategy type on the market orientation–performance relationship. *Journal of Marketing*, 64, 1–16.
- Menguc, B., & Auh, S. (2006). Creating a firm-level dynamic capability through capitalizing on market orientation and innovativeness. *Journal of the Academy of Marketing Science*, 34, 63–73.
- Milgrom, P., & Roberts, J. (1990). The economics of modern manufacturing: Technology, strategy, and organization. *American Economic Review*, 80, 511–528.

- Moorman, C., & Rust, R.T. (1999). The role of marketing. *Journal of Marketing*, 63, 180–197.
- Moorman, C., & Slotegraaf, R.J. (1999). The contingency value of complementary capabilities in product development. *Journal of Marketing Research*, 36, 239–257.
- Morgan, N.A., Vorhies, D.W., & Mason, C.H. (2009). Market orientation, marketing capabilities, and firm performance. *Strategic Management Journal*, 30, 909–920.
- Noble, C.H., Sinha, R.K., & Kumar, A. (2002). Market orientation and alternative strategic orientations: A longitudinal assessment of performance implications. *Journal of Marketing*, 66, 25–39.
- Nunnally, J.C. (1978). *Psychometric theory*. New York: McGraw-Hill.
- Podsakoff, P.M., MacKenzie, S.B., Podsakoff, N.P., & Lee, J.Y. (2003). The mismeasure of management and its implications for leadership research. *The Leadership Quarterly*, 14, 615–656.
- Priem, R.L., & Butler, J.E. (2001). Is the resource-based ‘view’ a useful perspective for strategic management research? *The Academy of Management Review*, 26, 22–40.
- Ray, G., Barney, J.B., & Muhanna, W.A. (2004). Capabilities, business processes, and competitive advantage: Choosing the dependent variable in empirical tests of the resource-based view. *Strategic Management Journal*, 25, 23–37.
- Schepers, J., Martin, W., & de Ruyter, K. (2005). Leadership styles in technology acceptance: Do followers practice what leaders preach? *Managing Service Quality*, 15, 496–508.
- Shook, C.L., Ketchen, D.J., Hult, G.T.M., & Kacmar, K.M. (2004). An assessment of the use of structural equation modeling in strategic management research. *Strategic Management Journal*, 25, 397–404.
- Slater, S.F., & Narver, J.C. (1998). Customer-led and market-oriented: Let’s not confuse the two. *Strategic Management Journal*, 19, 1001–1006.
- Slotegraaf, R.J., & Dickson, P.R. (2004). The paradox of a marketing planning capability. *Journal of the Academy of Marketing Science*, 32, 371–385.
- Slotegraaf, R.J., Moorman, C., & Inman, J.J. (2003). The role of firm resources in returns to market deployment. *Journal of Marketing Research*, 40, 295–309.
- Song, M., Droge, C., Hanvanich, S., & Calantone, R. (2005). Marketing and technology resource complementarity: An analysis of their interaction effect in two environmental contexts. *Strategic Management Journal*, 26, 259–276.
- Srivastava, R.K., Fahey, L., & Christensen, H.K. (2001). The resource-based view and marketing: The role of market-based assets in gaining competitive advantage. *Journal of Management*, 27(6), 777–802.
- Stone, M. (1974). Cross-validatory choice and assessment of statistical predictions. *Journal of the Royal Statistical Society*, 36(2), 111–133.
- Tabachnick, B.G., & Fidell, L.S. (2007). *Multivariate statistics* (5th ed.). Boston: Allyn and Bacon.
- Teece, D.J., Pisano, G., & Shuen, A. (1997). Dynamic capabilities and strategic management. *Strategic Management Journal*, 18, 509–535.
- Tenenhaus, M., Vinzi, V.E., Chatelin, Y., & Lauro, C. (2005). PLS path modelling. *Computational Statistics and Data Analysis*, 48, 159–205.
- Vorhies, D.W., & Morgan, N.A. (2005). Benchmarking marketing capabilities for sustainable competitive advantage. *Journal of Marketing*, 69(1), 80–94.
- Wernerfelt, B. (1984). A resource-based view of the firm, *Strategic Management Journal*, 5(2), 171–180.
- Woodside, A.G., Sullivan, D.P., & Trappey, R.J. (1999). Assessing relationships among strategic types, distinctive marketing competencies, and organizational performance. *Journal of Business Research*, 45(2), 135–146.
- Zhou, K.Z., Brown, J.R., & Dev, C.S. (2009). Market orientation, competitive advantage, and performance: A demand-based perspective. *Journal of Business Research*, 62(11), 1063–1070.

- Zhou, K.Z., Li, J.J., Zhou, N., & Su, C. (2008). Market orientation, job satisfaction, product quality, and firm performance: Evidence from China. *Strategic Management Journal*, 29, 985–2008.
- Zhou, K.Z., Yim, C.K., & Tse, D.K. (2005). The effects of strategic orientations on technology- and market-based breakthrough innovations. *Journal of Marketing*, 69, 42–60.

About the authors

Liem Viet Ngo is a lecturer in marketing at the Australian School of Business, the University of New South Wales, Australia. His research interests include competitive strategies, business orientations, operant resource-based capabilities, customer value, and brand management. He has published in *British Journal of Management*, *Industrial Marketing Management*, *Journal of Business Research*, and *European Journal of Marketing*.

Corresponding author: Dr Liem Viet Ngo, Australian School of Business, The University of New South Wales, Sydney, NSW 2052, Australia.

T +61 (2) 9385 3605
E liem.ngo@unsw.edu.au

Aron O'Cass is the professor of marketing at the School of Management, Faculty of Business, University of Tasmania. Professor O'Cass has published more than 120 research papers on various issues in both consumer behaviour and strategic marketing. His publications appear in *British Journal of Management*, *Industrial Marketing Management*, *Journal of Business Research*, *European Journal of Marketing*, *Journal of Economic Psychology*, *Journal of Product and Brand Management*, *Journal of Vacation Marketing*, *Journal of Advertising*, *the Journal of Consumer Behaviour*, among others.

T +61 0417771360
E aron.ocass@utas.edu.au