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Market Segmentation Strategy, Competitive Advantage, and Public Policy: Grounding Segmentation Strategy in Resource-Advantage Theory

Shelby D. Hunt & Dennis B. Arnett

Abstract

Market segmentation is one of the most widely accepted concepts in marketing. Its fundamental thesis is that, to achieve competitive advantage and, thereby, superior financial performance, firms should (1) identify segments of demand, (2) target specific segments, and (3) develop specific marketing "mixes" for each targeted market segment. However, understanding the competitive circumstance in which segmentation strategy will work requires an understanding of the process of competition. That is, segmentation must be grounded in competition theory. This article examines the nature of market segmentation strategy and identifies the characteristics that a theory of competition must possess if it is to provide a theoretical foundation for it. The criteria are argued to be that a grounding theory must (1) provide for the existence of demand heterogeneity, (2) justify why firms would choose to produce and market a variety of market offerings, and (3) explicate a mechanism by which a market segmentation strategy can lead to superior financial performance. This article argues that resource-advantage theory, a process theory of competition, meets these criteria and, therefore, provides a theoretical foundation for market segmentation strategy. Furthermore, it argues that the use of market segmentation promotes public welfare by prompting the innovations that foster firm-level, industry-level, and societal-level productivity.

Keywords: Segmentation, Competitive advantages, Resource-Advantage theory

1. Introduction

All marketing strategies involve a search for competitive advantage (Bharadwaj and Varadarajan 1993; Day and Wensley 1988; Varadarajan and Cunningham 1995). For market segmentation strategy, the fundamental thesis is that the achievement of competitive advantage and, thereby, superior financial performance results from firms (1) identifying segments of demand, (2) targeting specific segments, and (3) developing specific marketing "mixes" for each targeted market segment (Dibb, Simkin, Pride, and Ferrell 1994; Hunt 2002b). Although market segmentation is accepted as a viable strategy for gaining competitive advantage, extant theories of competition in mainstream economics are inhospitable to segmentation strategy. Indeed, the dominant theories of competition in mainstream economics, that is, neoclassical perfect competition and monopolistic competition, view the competitive advantages gained from segmenting markets as detrimental to societal welfare because market segments represent the artificial fragmentation of homogeneous demand, which implies that "segmentation is viewed as an imperfection in the structure of markets" (Frank, Massy, and Wind 1972, p. 6). Therefore, neoclassical, static-equilibrium theories serve poorly those researchers and practitioners who are interested in studying and/or implementing market segmentation strategies.[1] In contrast, Hunt and Morgan (1995, 1996, 1997) have developed an interdisciplinary, process theory of competition, labeled resource-advantage theory (hereafter, R-A theory), that is claimed to be a positive theory of competition that is capable of providing a theoretical foundation for normative marketing strategies, such as relationship marketing and market segmentation (Hunt 2002b).

Why is grounding market segmentation strategy important? First, positive theories capable of grounding marketing theories increase our understanding of marketing through the explanation and prediction of

marketing phenomena. In doing so, they also provide a basis for better decision models (i.e., normative theories or strategies), for "Good normative theory is based on good positive theory" (Hunt 2002b, p. 238). Therefore, a theory capable of grounding market segmentation strategy can guide both researchers and practitioners concerning the study and practice of market segmentation strategy. Second, grounding market segmentation strategy in a theory of competition contributes to the development of the macro dimensions of marketing, as Layton (2002) has so forcefully argued:

A number of marketing scholars have written on the problems faced by the individual manager, seeking to guide managers in the choices they face. However, it is the macro consequences of market related choices that also matter a great deal and which need to be addressed through social and economic policy choices, including regulation – and for this we need more than the narrow insights of the economists; we need sound macro marketing theory if the shaping of such policies is to lead on balance to benefit rather than cost for society as a whole (p. 10; italics added).

In this paper, we explore – using Black & Decker as a continuing example – whether R-A theory can provide a theoretical foundation for market segmentation strategy and, as a result, better inform the study and use of such strategies. First, our article examines the nature of market segmentation strategy and argues that, for a theory of competition to provide a theoretical foundation for such a strategy, it must (1) provide for the existence of demand heterogeneity, (2) justify why firms would choose to produce and/or market a variety of market offerings, and (3) explicate a mechanism by which a market segmentation strategy can lead to superior financial performance. Second, we provide an overview of R-A theory. Third, we illustrate that R-A theory can ground market segmentation strategy. Fourth, we show how R-A theory can inform the study and practice of market segmentation strategy. Fifth, we argue that market segmentation strategy promotes social welfare.

2. Market Segmentation Strategy

Market segmentation, in its tactical sense, often refers to such things as the use of particular statistical techniques for identifying groups of potential customers who have different needs, wants, tastes, and preferences. In contrast, market segmentation *strategy,* as used here, is a broad concept that refers to the strategic *process* that includes (1) identifying bases for segmentation, (2) using

the bases to identify potential market segments, (3) developing combinations (portfolios) of segments that are strategic alternatives, (4) ascertaining the resources necessary for each strategic alternative, (5) assessing existing resources, (6) selecting an alternative that targets a particular market segment or segments, (7) securing the resources necessary for the target(s), (8) adopting positioning plans for the market offerings for the segments, and (9) developing marketing mixes appropriate for each segment.

All market segmentation strategies are premised on three basic assumptions. (1) Many markets are significantly, but not completely, heterogeneous regarding consumers' needs, wants, use requirements, tastes, and preferences, and, therefore, can be divided into smaller, meaningful, relatively homogeneous segments of consumers.[2] (2) A firm's market offerings (here, including price, promotion, and channels) can often be designed to meet the needs, wants, tastes, and preferences of such segments. And (3), for many firms, a strategy of targeting specific segments can lead to competitive advantages in the marketplace and, in turn, superior financial performance.

Consider, for example, how Black & Decker (hereafter, B&D) used a global market segmentation strategy to reverse the performance of its power tools division in the 1990s. As Table 1 shows, B&D segments users of power tools into three groups. The first segment consists of homeowners/do-it-yourselfers and is characterized by people who: (1) use power tools occasionally, (2) are price sensitive, and (3) tend to buy power tools at low price retailers (e.g., Kmart). The second segment, "weekend warriors," contains people who: (1) use power tools on a regular basis, (2) are less price sensitive, and (3) tend to buy tools at home centers (e.g., Bunnings Warehouse). The third segment, professional users, consists of people who: (1) use power tools on a daily basis, (2) are willing to pay more for their power tools, and (3) tend to buy power tools from vendors that cater to professional contractors (e.g., Bunnings Warehouse, Aussie Weld, and Spinefex).

To target each segment, B&D uses specific products lines with different brand names. For example, power tools sold under the B&D brand name are geared toward the homeowners/do-it-yourselfers, the Firestorm line of products is designed for weekend warriors, and the DeWalt line is meant for professional users. As Table 1 illustrates, B&D's strategy is not just a product strategy. Rather, it uses a complete marketing mix strategy for

Table 1:
The Market Segmentation Strategy of the Black & Decker Corporation

Market Segment	Product Line	Product Strategy	Price Strategy	Promotion Strategy	Place Strategy*
Homeowners/ Do-it-yourselfers	Black & Decker	Quality adequate for occasional use	Lower price	TV ads during holidays	Kmart, Bunnings Warehouse, Mitre 10 (lower tier stores), etc.
Weekend Warriors	Firestorm	Quality adequate for regular use	Higher priced than B&D brand	Ads in DIY magazines/ shows	Bunnings, Warehouse, etc.
Professional Users	DeWalt	Quality adequate for daily use	Highest price	Sales reps call on job sites	Bunnings Warehouse, Mitre 10 (top tier stores),etc.

* Note: Bunnings Warehouse sells to both professional contractors and the general public. Mitre 10 uses a four tier store model. The upper tier stores cater to professional contractors, while the lower tier stores do not.

Source: Based on Black & Decker (2001).

each line of power tools. Consider the Firestorm products. Targeted at weekend warriors, they are: (1) engineered to be used more often than B&D tools, but less often than DeWalt tools, (2) priced higher than the B&D products, but lower than the DeWalt products, (3) sold by retailers that cater to weekend warriors (e.g., Bunnings Warehouse), and (4) promoted in magazines and on televisions shows that target "serious" do-it-yourselfers. B&D's market segmentation strategy has allowed it to become one of the most successful producers of power tools in the world (Sternthal and Tybout 2001).

Success stories such as Back & Decker's have resulted in market segmentation strategy being a well-accepted component of marketing strategy (Dibb 1995, 2001). Indeed, market segmentation strategy is "one of the most widely held theories in strategic marketing" (Piercy and Morgan 1993 p. 123), is "considered one of the fundamental concepts of modern marketing" (Wind 1978, p. 317), is "the key strategic concept in marketing today" (Myers 1996, p. 4), and is one of the basic "building blocks" of marketing (Layton 2002, p. 11). The acceptance of market segmentation strategy as a key dimension of marketing strategy traces to Chamberlin's (1933/1962) argument that intra-industry heterogeneity of demand is natural and to Smith's (1956, p. 6) seminal article that argues: "market segmentation may be regarded as a force in the market that will not be denied."

2.1 The Nature of Market Segments

Although scholars agree that market segments can and do exist, they tend to disagree as to why they exist. Research influenced by neoclassical, static-equilibrium economics tends to view market segmentation strategy as an artificial fragmentation of the market brought about by the efforts of suppliers (e.g., Bergson 1973; Cowling and Mueller 1978; Samuelson and Nordhaus 1995; Siegfried and Tieman 1974). From this perspective, marketing efforts by firms create "market imperfections"

and, therefore, should be viewed as attempts to gain monopoly power. Market segmentation is seen as a variation on the theory of price setting by monopolists and is usually discussed under the topic of price discrimination (Frank, Massy, and Wind 1972). The influence of this school of thought is evident in articles describing price discrimination as the goal of market segmentation strategies. For example, Anderson and Simester (2001, p. 316) maintain that "firms often search for distinguishing traits that they may use to price discriminate between segments." In this view, market segmentation is customarily interpreted as a mechanism that allows firms to take advantage of consumers. For example, Glass (2001, p. 549) argues that segmentation strategies allow firms to "collude to price discriminate." Glass (2001, p. 550) maintains that, since consumers differ in how much they value quality improvements, producers are able to "set prices that induce consumers types to separate" (i.e., producers' pricing strategies fracture markets into artificial segments). Neoclassical economics tends to view this type of price discrimination as detrimental to society because it results in welfare losses (Bergson 1973; Stigler 1957). For example, U.S. estimates of welfare losses due to price discrimination commonly range from .1% to 13% of GDP (Bergson 1973; Cowling and Mueller 1978; Siegfried and Tieman 1974). Therefore, according to this view, society should discourage firms from using market segmentation strategies because it fosters price discrimination.

In contrast, other researchers, including most *marketing* researchers, maintain that heterogeneity of demand is natural (e.g., Alderson 1957, 1965; Allenby, Arora, and Ginter 1998; Chamberlin 1933/1962; McCarthy 1960; Smith 1956). As Allenby, Arora, and Ginter (1998, p. 384) point out, "demand heterogeneity is a critical element of marketing." Smith's (1956, p. 4) seminal article argued that a "lack of homogeneity on the demand side may be based upon different customs, desire for variety, or desire for exclusivity or may arise from basic differences in user needs." He suggested that it is attributable to consumers' desires for more precise satisfaction of their varying wants. As Sawhney (1998, p. 54) emphasizes, "Customers are becoming very sophisticated and are demanding customized products and services to match individual preferences and tastes." Similarly, Lancaster (1990) maintains that the existence of product variety can be a result of consumers seeking variety in their own consumption and/or different consumers wanting different variants because tastes differ. From this perspective, firms using market

segmentation strategies are actually benefiting consumers and society by providing them with market offerings that better satisfy individual wants and needs. Consequently, firms wishing to provide superior value to consumers should try to develop market offerings that are well suited to specific market segments. Furthermore, society should encourage firms to use market segmentation strategies.

2.2 Implications for Marketing Strategy and Public Policy

The debate over the nature of market segments (i.e., whether they are natural or artificial) has significant implications for marketing strategy and public policy. If market segments are artificial, as neoclassical economic theory maintains, then firms in the same industry should all produce exactly the same market offerings because demand homogeneity requires supply homogeneity. If firms produce market offerings that satisfy homogeneous industry demand, then the market offerings produced will be fundamentally uniform, and any perceived differences among them would be purely fictitious creations of firms or be the result of either consumer ignorance or irrational consumer preferences (Chamberlin 1950). Consistent with this view, Galbraith (1967) argues that marketing efforts by firms (e.g., advertising) distort consumer demand. Furthermore, the product differentiation that results from distorting consumer demand (i.e., the artificial segmentation of markets) leads to welfare losses in the form of higher prices, lower quantities, excess capacity, inferior products, and the exploitation of the factors of production (Chamberlin 1933/1962; Stigler 1957). [3]As a result, this view argues that to protect the public's welfare, firms should be discouraged (or, if necessary, prevented) from practicing market segmentation strategies.

In contrast, if intra-industry demand is heterogeneous, "differences in tastes, desires, incomes, and locations of buyers, and differences in the uses which they wish to make of commodities all indicate the need for variety" (Chamberlin 1933/1962, p. 214). As Chamberlin's (1950) later work suggests, such differences are natural because human beings are individuals. Following this line of reasoning, firms in the same industry are capable of producing products that have *meaningful* differences. As Frank, Massy, and Wind (1972) argue, because of improved production techniques and methods of handling information, product diversity exists that is based on meaningful differences. This argument is consistent with the view that market offerings should be considered

bundles of characteristics, and that consumers attempt to choose products that are closest to their "ideal" set of characteristics (Lancaster 1990, 1991).

Returning to the B&D example, though the main utilitarian function of a power drill is to bore holes in objects, power drills differ on many dimensions, such as reliability, price, torque, and power source (i.e., an electric cord or a battery). Because consumers desire different bundles of characteristics, different power drills, with different bundles, are produced. Consumers search for power drills that come closest to matching their desired sets of characteristics (i.e., sets that contain the desired characteristics in the desired proportions). For example, people who plan on using a power drill only occasionally require different characteristics than do professional users. For occasional users, price might be the most important characteristic, while torque is of less importance. For that reason, they may choose to buy a B&D brand power drill (see Table 1). On the other hand, because professional users may consider torque to be

most important, with price less so, they may choose a DeWalt power drill (see Table 1). Therefore, market offerings may differ because (1) consumers seek variety and/or (2) satisfying the differing needs, wants, and use requirements of consumers requires offerings that have different bundles of characteristics. [4]Therefore, marketplace characteristics suggest that firms should try to develop multiple market offerings (e.g., different models of power drills) for a single "market" (e.g., the "power drill market"), with each targeted toward a different set of consumers, if the market offerings do indeed represent different bundles of attributes that are desired by consumers.

Which view is more accurate? Are most markets significantly homogeneous and, therefore, most segments are *artificial?* Or, are most markets substantially heterogeneous and, therefore, most segments are *natural?* For neoclassical economics, all market offerings (e.g., power drills, automobiles) can be considered commodities that can be modeled by means

Table 2:
The Foundational Premises of R-A Theory

P_1: Demand is heterogeneous across industries, heterogeneous within industries, and dynamic.

P_2: Consumer information is imperfect and costly.

P_3: Human motivation is constrained self-interest seeking.

P_4: The firm's objective is superior financial performance.

P_5: The firm's information is imperfect and costly.

P_6: The firm's resources are financial, physical, legal, human, organizational, informational, and relational.

P_7: Resource characteristics are heterogeneous and imperfectly mobile.

P_8: The role of management is to recognize, understand, create, select, implement, and modify strategies.

P_9: Competitive dynamics are disequilibrium-provoking, with innovation endogenous.

Caveat: The foundational propositions of R-A theory are to be interpreted as descriptively realistic of the general case. Specifically, P_1, P_2, P_5 and P_7 for R-A theory are *not* viewed as idealized states that anchor end-points of continua.
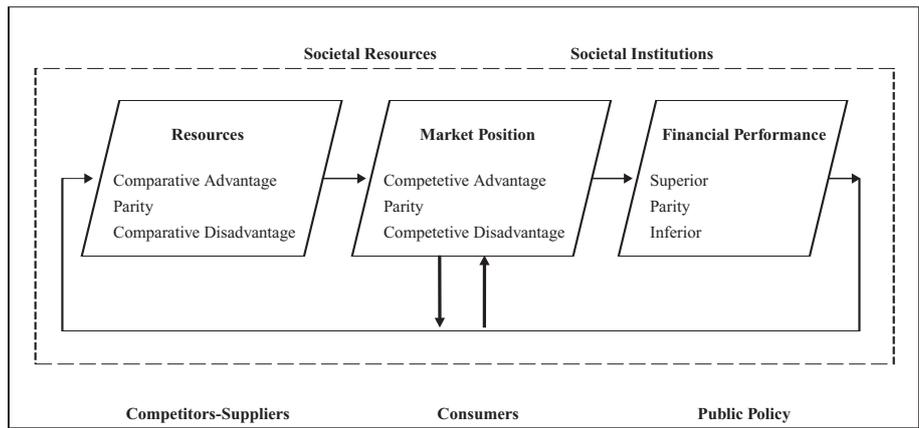

Source: Hunt and Morgan (1997).

Figure 1: A Schematic of Resource-Advantage Competition

Read: Competition is the disequilibrating, ongoing process that consists of the constant struggle among firms for a comparative advantage in resources that will yield a marketplace position of competitive advantage and, thereby, superior financial performance. Firms learn through competition as a result of feedback from relative financial performance "signaling" relative market positon, which, in turn signals relative resources.

Source: Adapted from Hunt and Morgan (1997).
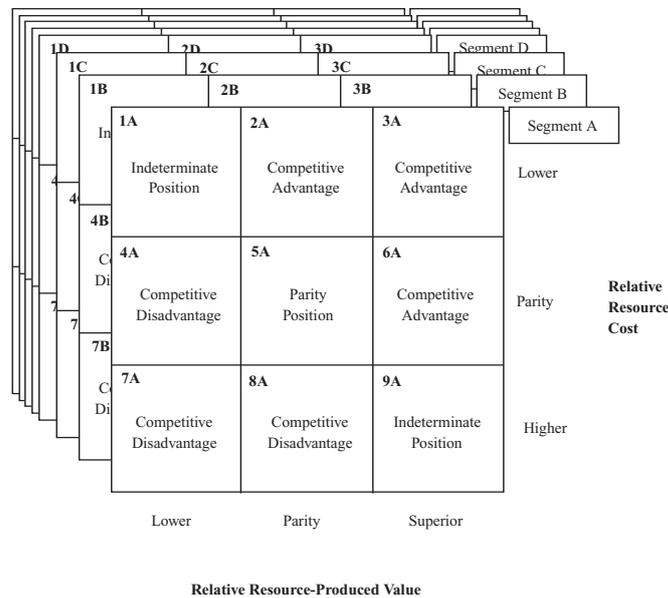
Figure 2: Competitive Position Matrix

Read: The marketplace positon of competitive advantage identified as Cell 3A, for example, in segment A results form the firm, relative to its competitors, having a resource assortment that enables it to produce an offering that (a) is perceived to be of superior value by consumers in that segment and (b) is produced at lower costs than rivals.

Note: Each competitive position matrix constitutes a different market segment (denoted as segment A, segment B…).
Source: Adapted from Hunt and Morgan (1997).

of "industry" demand and supply curves that yield an equilibrium price. This view traces to the classic work of Joan Robinson (1933). She defines a "commodity" as a "consumable good, *arbitrarily* demarcated from other kinds of goods, but which may be regarded for practical purposes as homogeneous within itself" (Robinson 1933, p. 17; italics added). Therefore, she argues that the tastes, preferences, and use requirements of consumers of automobiles may be regarded "for practical purposes" as homogeneous. However, this view is in stark contrast to empirical evidence that suggests that the demand in most markets is substantially heterogeneous (Blattberg and Sen 1976; Kamakura and Russell 1989). Indeed, as Allenby, Arora, and Ginter (1998) maintain, heterogeneity of demand may be even *more* prevalent than most research suggests. Therefore, the view that demand in most industries is homogeneous (or "close enough" to being homogeneous) is descriptively inaccurate. To ignore that consumers differ substantially in their wants and needs in such markets as power tools or automobiles, invites strategic failures. In the "automobile industry," for example, Ford Motor Company is involved in the manufacturing and marketing of over 40 distinctly different market offerings (using seven different brand names). Similarly, as our continuing example shows, B&D offers a wide variety of power tools that are designed specifically to meet the needs of different market segments. Strategically, therefore, firms in the "automobile industry" or "power tool industry" should not try to develop market offerings that are designed to meet simultaneously the needs of *all* potential consumers. Rather, a market segmentation strategy seems required, and society should *encourage* firms in such industries to use segmentation approaches.

2.3 Market Segmentation and Firm Performance

When is a particular segmentation strategy likely to succeed? For a firm, a market segmentation strategy makes sense only if it impacts positively its financial performance. The nine-step process outlined earlier of designing and implementing market segmentation strategies is complex. As a result, successful market segmentation strategies often require substantial amounts of resources. Therefore, particular segmentation strategies will be successful only when the benefits of engaging in such strategies outweigh the costs. As Weinstein (1994, p. 2; italics added) maintains, "The objective of segmentation research is to analyze markets, find niche opportunities, and capitalize on a superior competitive position." From an efficiency standpoint,

successful segmentation strategies lead to better planning and more effective use of firm resources because they allow firms to focus their resources on segments of consumers that are more likely to purchase their market offerings (Mahajan and Jain 1978; Rangan, Moriarty, and Swartz 1992). The continued use of market segmentation strategies by firms suggests that firms believe that such strategies are profitable. Therefore, not only will market offerings differ (i.e., contain different bundles of attributes) because of differences in consumer demand, market offerings will also differ because firms can increase profits by manufacturing a variety of market offerings tailored for specific market segments. Therefore, because segmentation strategies allow some firms to compete more efficiently and/or effectively, they are viable strategic options for firms.

The preceding discussion implies that providing a theoretical foundation for market segmentation strategy requires a theory of competition that permits a market segmentation strategy to be successful and contributes to explaining when and why such a strategy will be successful. Specifically, a grounding theory must (1) provide for the existence of demand heterogeneity, (2) justify why firms would choose to produce and market a variety of market offerings, and (3) explicate a mechanism by which a market segmentation strategy can lead to superior financial performance. We argue that resource-advantage (R-A) theory possesses these characteristics.

3. An Overview of R-A Theory

R-A theory is a general theory of competition that describes the process of competition. As a result, exploring its implications does not involve solving sets of equations, as in neoclassical economics (Hunt and Arnett 2001). As Burt (1992, pp. 5-6) emphasizes:

Competition is a process not a result. With important exceptions, most theories of competition concern what is left when competition is over. They are an aside in efforts to answer the practical question of how to maximize producer profit. The alternative is to start with the process of competition and work toward its results. This is a less elegant route for theory, but one that veers closer to the reality of competition as we experience it.

Therefore, explications of R-A theory use a descriptive approach that "veers closer to realty."

R-A theory has been developed and applied in a variety of disciplines, including marketing (Hunt 1997a, 1999,

2000b, c, 2001a, 2002b; Hunt and Arnett 2001, 2003; Hunt Lambe, and Wittmann 2002; Hunt and Morgan 1995, 1996, 1997), management (Hunt 1995, 2000a, d; Hunt and Lambe 2000), economics (Hunt 1997b, c, d, 2002a), ethics (Arnett and Hunt 2002), and general business (Hunt 1998; Hunt and Duhan 2001; O'Keeffe, Mavondo, and Schroder 1998). Figures 1 and 2 provide a schematic depiction of R-A theory's key constructs, and Table 2 provides its foundational premises. Our overview follows closely the theory's treatment in Hunt (2000b).

3.1 The Structure of R-A Theory

Using Hodgson's (1993) taxonomy, R-A theory is an evolutionary, disequilibrium-provoking, process theory of competition, in which innovation and organizational learning are endogenous, firms and consumers have imperfect information, and in which entrepreneurship, institutions, and public policy affect economic performance. Evolutionary theories of competition require units of selection that are (1) relatively durable, that is, that can exist, at least potentially, through long periods of time, and (2) heritable, that is, that can be transmitted to successors. For R-A theory, both firms and resources are proposed as the heritable, durable units of selection, with competition for comparative advantages in resources constituting the selection process.

At its core, R-A theory combines heterogeneous demand theory (Alderson 1957, 1965; Chamberlin 1933/1962) with the resource-based theory of the firm. The resource-based theory of the firm, which traces to Penrose (1959), Wernerfelt (1984), Conner (1991), and Barney (1991), parallels, if not undergirds, what Foss (1993) calls the "competence perspective" in evolutionary economics and the "capabilities" approaches of Teece and Pisano (1994) and Langlois and Robertson (1995). Priem and Butler (2001a, p. 35) suggest that in order for the resource-based view "to fulfill its potential in strategic management, its ideas must be integrated with an environmental demand model." They point out that R-A theory's incorporation of heterogeneous demand theory is a step in the right direction. We agree.

Contrasted with perfect competition, heterogeneous demand theory views intraindustry demand as significantly heterogeneous with respect to consumers' tastes and preferences. Therefore, viewing products as bundles of Lancasterian (1966) attributes, different market offerings or "bundles" are required for different market segments within the same industry. Contrasted with the view that the firm is a production function that combines homogeneous, perfectly mobile factors of production, the resource-based view holds that the firm is a combiner of heterogeneous, imperfectly mobile factors, which are labeled "resources." These heterogeneous, imperfectly mobile resources, when combined with heterogeneous demand, imply significant diversity as to the sizes, scopes, and levels of profitability of firms within the same industry. As diagramed in Figures 1 and 2, R-A theory stresses the importance of (1) market segments, (2) heterogeneous firm resources, (3) a comparative advantage/disadvantage in resources, and (4) marketplace positions of competitive advantage/disadvantage.

In brief, market segments are defined as intra-industry groups of consumers whose tastes and preferences with regard to an industry's output are *relatively* homogeneous. Resources are defined as the tangible and intangible entities available to the firm that enable it to produce efficiently and/or effectively a market offering that has value for some marketing segment(s). Thus, resources can be categorized as financial (e.g., cash resources and access to financial markets), physical (e.g., plants and equipment), legal (e.g., trademarks and licenses), human (e.g., the skills and knowledge of individual employees), organizational (e.g., competences, controls, policies, and culture), informational (e.g., knowledge from consumer and competitive intelligence), and relational (e.g., relationships with suppliers and customers). Each firm in the marketplace will have a set of resources that is in some ways unique (e.g., knowledgeable employees, efficient production processes…) that could potentially result in a competitive advantage in the marketplace. Just as international trade theory recognizes that nations have heterogeneous, immobile resources, and it focuses on the importance of a comparative advantage in resources to explain the benefits of trade, R-A theory recognizes that many of the resources of firms within the same industry are significantly heterogeneous and relatively immobile. Therefore, analogous to nations, some firms will have a comparative advantage and others a comparative disadvantage in efficiently and/or effectively producing particular market offerings that have value for particular market segments.

Specifically, as shown in Figures 1 and 2, when firms have a comparative advantage (disadvantage) in resources, they will occupy marketplace positions of competitive advantage (disadvantage). Marketplace positions of competitive advantage (disadvantage) then result in superior (inferior) financial performance.

Therefore, firms compete for comparative advantages in resources that will yield marketplace positions of competitive advantage for some market segment(s) and, thereby, superior financial performance. As Figure 1 shows, how well competitive processes work is significantly influenced by five environmental factors: The societal resources on which firms draw, the societal institutions that form the "rules of the game" (North 1990), the actions of competitors and suppliers, the behavior of consumers, and public policy decisions.

Consistent with its Schumpeterian heritage (Schumpeter 1950), R-A theory places great emphasis on innovation, both proactive and reactive. The former is innovation by firms that, though motivated by the expectation of superior financial performance, is not prompted by specific competitive pressures—it is genuinely entrepreneurial in the classic sense of *entrepreneur*. In contrast, the latter is innovation that is directly prompted by the learning process of firms' competing for the patronage of market segments. Both proactive and reactive innovation contribute to the dynamism of R-A competition.

As the feedback loops in Figure 1 show, firms learn through competition as a result of the feedback from their relative financial performance signaling relative market position, which, in turn, signals relative resources. When firms competing for a market segment learn from their inferior financial performance that they occupy positions of competitive disadvantage (see Figure 2), they attempt to neutralize and/or leapfrog the advantage firm(s) by acquisition and/or innovation. That is, they attempt to acquire the same resource as the advantage firm(s), and/or they attempt to innovate by imitating the resource, finding an equivalent resource, or finding (creating) a superior resource. Here, "superior" implies that the innovating firm's new resource enables it to surpass the previously advantaged competitor in terms of either relative efficiency, or relative value, or both.

Firms occupying positions of competitive advantage can continue to do so if (1) they continue to reinvest in the resources that produced the competitive advantage and (2) rivals' acquisition and innovation efforts fail. Rivals will fail (or take a long time to succeed) when an advantage firm's resources are either protected by such societal institutions as patents or the advantage-producing resources are causally ambiguous, socially complex, tacit, or have time compression diseconomies.

Competition, then, is viewed as an evolutionary, disequilibrium-provoking process. It consists of the constant struggle among firms for comparative advantages in resources that will yield marketplace positions of competitive advantage and, thereby, superior financial performance. Once a firm has a competitive advantage in some market segment(s), competitors attempt to neutralize and/or leapfrog the advantaged firm through acquisition, imitation, substitution, or major innovation. Barney (2001) agrees with Priem and Butler (2001a) that a dynamic analysis using the resource-based view of the firm is important for the further development of strategic business research. Specifically, Barney (2001) cites R-A theory as an example of an evolutionary approach that incorporates the necessary dynamics. R-A theory is, therefore, inherently dynamic. Disequilibrium, not equilibrium, is the norm. In the terminology of Hodgson's (1993) taxonomy of evolutionary economic theories, R-A theory is nonconsummatory: it has no end-stage, only a never-ending process of change. The implication is that, though market-based economies are moving, they are not moving toward some final state, such as a Pareto-optimal, general equilibrium.

4. R-A Theory and Market Segmentation Strategy

As discussed, the fundamental strategic thesis of market segmentation is that, to achieve competitive advantage and superior financial performance, firms should (1) identify segments of industry demand, (2) target specific segments of demand, and (3) develop specific marketing "mixes" for each targeted market segment. To theoretically ground market segmentation strategy, a positive theory of competition must meet three criteria. The theory must: (1) allow for the existence of demand heterogeneity, (2) justify why firms would choose to produce and market a variety of market offerings, and (3) explicate a mechanism by which market segmentation can lead to superior performance.

Addressing criterion one, consider P1 in Table 2: demand is heterogeneous across industries, heterogeneous within industries, and dynamic. "Heterogeneous within industries" implies that demand in the overwhelming majority of industries is *substantially* heterogeneous (Hunt 2002b). Hence, assuming the demand for most market offerings in most industries to be homogenous is descriptively inaccurate. While demand in a limited number of industries, for example, corn (ANZSCC #012.02.76), gold ore (#142.14.12), and industrial sand (#153.11.01), is somewhat homogeneous; the majority of industries are more similar to the "power tool industry" (ANZSCC #442.22), or the "motor vehicle industry" (#

491.03.01), or the "book publishing industry" (#322.01.02), where demand is characterized by a vast array of consumer tastes, preferences, and use requirements. As a result, companies in these industries tend to (and *should*) follow segmentation strategies.

Addressing criterion two, R-A theory's acceptance that intra-industry demand is substantially heterogeneous in most industries implies that a firm is confronted with major challenges: "how many market offerings, composed of which attributes, at what attribute levels, targeted at which market segments should it produce?" (Hunt 2000b, p. 54). R-A theory suggests that firms will deal with these challenges in different ways because each firm possesses a set of resources that is in some ways unique. Some firms' resources sets may be more consistent with a strategy of offering limited numbers of market offerings, and, therefore, they will choose to focus on a single market segment (or a few market segments) by producing fairly homogeneous market offerings. For example, AM General Corporation, which manufacturers the Humvee, chooses to focus on marketing its vehicle to a single market segment (i.e., governments for military purposes). Rather than adapt its market offering to other segments, AM General chooses to license the look of their Humvee vehicle (i.e., the grill configuration) and the name "Hummer" to General Motors. In contrast, because General Motors produces a number of different vehicles designed to meet the needs of a wide variety of market segments, the addition of the Hummer line allows it to focus on a fairly new market segment (i.e., consumers desiring luxury, all terrain vehicles). Thus, AM General and General Motors follow different marketing strategies because each believes that its resource set is better suited for its particular strategy. Therefore, R-A theory's treatment of firm resources provides an explanation for why some firms choose to produce and market numerous different market offerings, while others do not.

Addressing criterion three, consider the concept of market offering. For R-A theory, a market offering is a distinct entity that is (1) comprised of a bundle of attributes, which (2) may be tangible or intangible, objective or subjective, and that (3) may be viewed by some potential buyer(s) as a want satisfier (Hunt 2000b). Most market offerings have blends of tangible (e.g., a power drill's motor and casing) and intangible attributes (e.g., a power drill's warranty and reliability). If tangible attributes predominate, market offerings are referred to as goods; if intangibles predominate, they are services.

Attributes are considered to be relatively more objective or subjective depending on the degree of uniformity across buyers as to (1) the importance weights given to different attributes, (2) the extent to which different market offerings have or do not have different attributes, and (3) the extent to which different offerings have different levels of attributes. In all cases, consumer perceptions – that is, subjective factors – are dispositive. The result is that market offerings *perceived* by consumers to be closer to their ideal constellation of attributes are, indeed, more valuable.

Now consider the nature of R-A competition. For R-A theory, as shown in Figures 1 and 2, competition consists of the constant struggle among firms for comparative advantages in resources that will yield marketplace positions of competitive advantage for some market segment(s) and, thereby, superior financial performance. Therefore, R-A theory views the basic unit of competition as market *segments*. Firms compete with each other on a segment-by-segment basis rather than on an industrywide basis. Market segmentation provides a mechanism by which firms can more effectively and/or efficiently use their resources (Mahajan and Jain 1978; Rangan, Moriarty, and Swartz. 1992). As Piercy and Morgan (1993, p. 124) maintain, "the logic of market segmentation suggests that designing marketing strategies around target segments allows a closer alignment between customer needs and the organization's marketplace offering, leading to increased customer satisfaction and loyalty and to building a stronger and more durable competitive position." R-A theory maintains that firms that are successful in developing market offerings that provide more value to consumers in specific market segments and/or provide market offerings at a lower cost (relative to their competitors) will occupy marketplace positions of competitive advantage. In turn, positions of competitive advantage lead to superior financial performance.

Consider the competitive matrix for segment A in Figure 2. A firm will have a marketplace advantage in this segment, if it can produce: (1) a market offering perceived as having superior value compared to rivals' marketing offerings at a lower cost than rivals (cell 3A), (2) a market offering perceived as having superior value compared to rivals' marketing offerings at the same cost as rivals (cell 6A), or (3) a market offering perceived as having value equal to rivals' marketing offerings at a lower cost than rivals (cell 2A). These positions of competitive advantage (cell 3A, cell 6A, and cell 2A) lead to superior financial

performance. In contrast, firms that fail to develop market offerings that have value for some market segment and/or do not have resource costs that are below those of rivals will occupy marketplace positions of competitive disadvantage. Specifically, a firm will have a disadvantage in a given segment, if it produces (1) a market offering perceived as having lower value compared to rivals' market offerings at the same cost as rivals (cell 4A), a market offering perceived as having lower value compared to rivals' market offerings at a higher cost than rivals (cell 7A), or a market offering perceived as having value equal to rivals' marketing offerings at a higher cost than rivals (cell 8A). Positions of competitive disadvantage lead to inferior financial performance.

Two additional competitive positions are possible. Firms can produce: (1) a market offering perceived as having lower value compared to rivals' market offerings at a lower cost than rivals (cell 1A) or (2) a market offering perceived as having superior value compared to rivals' market offerings at a higher cost than rivals (cell 9A). In these two marketplace positions, a firm's financial performance is dependant upon the ratio of resource-produced value (rpv) to resource costs (rc) of its market offering compared to those of rivals. Firms with market offerings that have greater ratios (compared to rivals) will have superior financial performance. In contrast, firms with market offerings that have smaller ratios (compared to rivals) will have inferior financial performance. Therefore, R-A theory shows how market segmentation strategies impact firm performance.

In summary, R-A theory permits the success of market segmentation strategy. (1) The theory's foundational premises view intra-industry demand as inherently heterogeneous. (2) The theory, by means of its treatment of resources, accounts for the behaviors of firms that often choose to produce and market a variety of market offerings in the same industry. (3) The theory, by means of the marketplace position matrix, explicates the mechanism by which a market segment strategy can lead to superior financial performance.

5. The Study and Practice of Market Segmentation

To be useful for researchers and practitioners, R-A theory must provide guidance as to when a market segmentation strategy will be successful. Our discussion concerning R-A theory's ability to provide a theoretical foundation for market segmentation strategy suggests that a market segmentation strategy will be more successful (or more likely to be successful) when (1)

intra-industry demand is substantially heterogeneous, (2) the target segment demand is relatively large (or has a large growth potential), (3) a firm's market offering is well-tailored to a target segment's tastes and preferences, (4) competitors' offerings are not well-tailored to each segment, and (5) given that a firm's market offerings are viewed as equal to or better than rivals' market offerings, the firm's resource costs (relative to competitors) do not push the firm into cells 8A or 9A in Figure 2.

Regarding point one, recall that a market segmentation strategy assumes that, though a market is substantially heterogeneous regarding consumers' needs, wants, tastes, and use requirements, it can be divided into smaller, meaningful, homogeneous segments of consumers. In markets that are inherently homogenous, segmentation strategies are ill-advised. That is, segmenting markets in which consumers' needs, wants, tastes, and preferences differ very little would constitute an inefficient use of firm resources. Furthermore, in this situation a segmentation strategy can make a firm more vulnerable to the actions of competitors. For example, if firm A chooses to concentrate on just a subset of the consumers in an inherently homogeneous market, other firms (firm B, firm C, etc.) could enter the market and benefit from economies of scale by choosing to focus on the market as a whole. The cost savings could allow firm B, for example, to produce a market offering at a lower cost than firm A, which could, in turn (if the market offering was perceived by consumers as being at least as valuable as firm A's market offering), allow it to occupy a position of competitive advantage (cell 2A or cell 3A in Figure 2). At best, firm A could occupy an indeterminate position, in the marketplace (cell 9A in Figure 2), where financial performance is less certain. However, this would only be possible if consumers perceived firm A's market offerings to be more valuable than firm B's market offering. Therefore, it is ill-advised to engage in a segmentation strategy (i.e., focus on a subset of consumers), if, regardless of the segmentation strategy used, no distinct segments exist.

In contrast, markets that are substantially heterogeneous (e.g., the market for power tools, as in the B&D example) do not lend themselves to a "one product fits all" strategy. Although firms can choose to produce a single market offering targeted to a specific market segment (i.e., a niche strategy), it is unlikely that a "general purpose" market offering could be close enough to all the constellations of attributes desired by consumers in a market that is substantially heterogeneous. For example,

if B&D decided to market a *single* "general purpose" power drill to all potential buyers of power tools, success would require it to develop a power drill that appealed to (i.e., matched closely the constellation of attributes of) all consumers concomitantly, including price sensitive consumers, those needing increased performance, and those desiring durability. It is extremely unlikely that B&D would be able to compete effectively against rivals by targeting a single market offering to all power tool users. That is, no single power drill can be expected to be close enough to the many constellations of attributes desired by all consumers of power tools concomitantly. As a result, a firm that chooses to follow such a strategy would be vulnerable to rival firms that produce market offerings tailored to specific market segments. Therefore, markets that are characterized by large degrees of heterogeneity regarding consumers' wants and needs provide strategic opportunities for firms that use segmentation strategies. Indeed, in many industries (e.g., power tools and automobiles), segmentation strategies are essential to organizational success.

Regarding point two, to be profitable, a segment must be, at least, potentially capable of providing a firm with enough revenue to cover the costs of producing market offerings tailored specifically for the segment. As Wind (1978, p. 328) emphasizes, "the selection of a segmentation design cannot be done in isolation from cost considerations." Research suggests that size and expected growth rate of demand are two important characteristics that make segments more attractive (Abratt 1993; Dibb 1995; Hlavacek and Reddy 1986). For example, Frank, Massy, and Wind (1972) maintain that to provide a reasonable target market for firms, the size of a market segment must be "substantial" (i.e., large enough to cover the incremental, absolute costs that firms face when developing and producing market offerings designed for specific segments). Therefore, a market segmentation strategy cannot succeed, even if a firm's relative costs for a market offering would potentially allow it to occupy a marketplace position of competitive advantage, when the size of the market segment is not adequate to generate sufficient revenue to cover the absolute costs of such a strategy.

Regarding points three and four, marketplace positions are partially the result of how consumers perceive the value of existing market offerings. Firms that provide market offerings that are better tailored to the wants/needs of a particular market segment(s) have an advantage over rivals. As can be seen in Figure 2, when

consumers perceive that a firm's market offerings are more valuable than rivals' market offerings, they are often able to occupy marketplace positions of competitive advantage (cell 3A and cell 6A in Figure 2). In contrast, when consumers perceive that a firm's market offerings provide less value than competitors' market offerings, they often find themselves in marketplace positions of competitive disadvantage (cell 4A and cell 7A in Figure 2). Therefore, when deciding whether to adopt a *particular* market segmentation strategy, firms should consider carefully the marketplace positions (or potential marketplace positions) of competitors. As Hlavacek and Reddy (1986, p. 18; italics in original) maintain, "it is imperative that a producer be able to determine whether his offering has a *demonstrable competitive advantage* in a defined market segment." Note, however, this concept is different from the idea of looking at the level of competition (Frank, Massy, and Wind 1972; Piercy and Morgan 1993). A market segment that is characterized by a high level of competition may still represent a viable new market for a firm that has the potential to provide more value to consumers and/or has a cost advantage over existing firms (i.e., firms that have the potential to occupy either cell 2A or cell 3A or cell 6A in Figure 2). As Rangan, Moriarty, and Swartz (1992) find, even in mature markets characterized by intense competition, market segmentation strategies are often still viable.

With regard to point five, for example, consider firms X and Y, both competing in the same industry, which is characterized by at least three market segments (segments A, B, and C in Figure 2). Firm X chooses not to follow a market segmentation strategy and, therefore, produces a single "general purpose" market offering. In contrast, Firm Y chooses a market segmentation strategy and decides to produce three different market offerings, each one tailored closely to a different segment. As a result, firm Y's market offerings are perceived by members of each segment as being more valuable than the "general purpose" market offering sold by firm X. If firm Y is able to maintain overall costs at a level comparable to those of firm X, it will occupy cells 6A, 6B, and 6C in Figure 2. In comparison, firm X will occupy cells 4A, 4B, and 4C. In this situation, R-A theory predicts that, due to its more favorable marketplace position, firm Y will be rewarded with superior financial performance. Conversely, firm X will experience inferior financial performance (see Figure 1).

Given other circumstances, the results could be much

different. For example, suppose firm X's resource costs are substantially lower than those of Y (because, for example, of the production efficiencies in producing only one standard offering) and firm X's offering is viewed by segments A and B as "good enough" and by segment C as "not nearly good enough." Under these circumstances, firm X would occupy cells 2A, 2B, and 1C, respectively, for the three segments, and Y would occupy cells 8A, 8B, and 9C, respectively. Therefore, firm X would occupy positions of competitive advantage in segments A and B, while Y would occupy positions of competitive disadvantage in the two segments. Concerning segment C, given the information that we have concerning the two firms costs and consumers' perceptions, firm Y might have an advantage over X because of its higher ratio. That is, since firm X's market offering is viewed as having little value ("not nearly good enough") its ratio of resource-produced value to resource costs is close to zero (i.e., as $rpv \rightarrow 0$, $rpv/rc \rightarrow 0$). In comparison, firm Y's ratio would be larger than firm X's because consumers perceive its market offering to be superior to the one offered by firm X (i.e., > 0, because firm Y's rpv $>$ firm X's rpv). Therefore, firm Y would have a competitive advantage in segment C.

R-A theory suggests that, to be successful, firms must examine the nature of competition in the segments that they target (or are considering targeting). Because firms can occupy different competitive positions in each of the segments in which they compete, firms must understand how their market offerings compare to those of their rivals on a *segment-by-segment* basis. Two important factors determine a firm's marketplace position: (1) consumers' perceptions regarding the value of market offerings compared to those of rivals and (2) the cost (relative to competitors) of the resources used to produce the market offerings. Firms will have competitive advantages over rivals when they produce more valuable market offerings and/or produce market offerings more efficiently than rivals.

5.1 Resource Set and Market Segmentation Strategy Fit

Research suggests that the fit between a firm and its strategy is one of the key factors influencing successful strategy implementation (McKee, Varadarajan, and Pride 1989; Vorhies and Morgan 2003). That is, firms whose resource sets match more closely those required by a specific segmentation strategy are more likely to be successful. Therefore, to be successful firms must (1) understand what resources are available to them and (2)

recognize whether these resources are appropriate for the segmentation strategy that the firm desires to implement. However, because each firm possesses a set of resources that is in some ways unique, the task of identifying a firm's resources set and its appropriateness for a particular segmentation strategy is complex (Walker and Ruekert 1987).

Vorhies and Morgan (2003) suggest a method by which firms can measure the configuration of their organizations. For them (p. 1), an organization's configuration is "the multidimensional constellation of the strategic and organizational characteristics of a business." They recommend that marketing managers use a profile deviation approach for determining which configurations are best suited for particular market strategies. That is, managers should compare their firms' configuration to that of an "ideal" configuration. Firms that differ significantly from the "ideal" configuration for a particular segmentation strategy are likely to experience implementation problems, and those that match closely the "ideal" configuration will likely enjoy superior performance (i.e., increased effectiveness and/or efficiency). What are the important strategic and organizational characteristics of a business? R-A theory suggests that it is firm *resources* that constitute the important characteristics that result in marketplace positions of competitive advantage and, thereby, enable firms to experience superior financial performance. Therefore, firms should engage in resource analyses prior to strategy selection.

A resource analysis should proceed in three steps. First, an ideal configuration of resources should be identified. As Vorhies and Morgan (2003) suggest, this can be accomplished by either examining extant theory or by identifying firms that have successfully implemented a particular segmentation strategy and studying their resource sets (i.e., by benchmarking successful firms). For example, firms that manufacturer power tools could decide to implement a strategy similar to B&D's. Because of B&D's success, they could decide to use B&D as a basis for the ideal configuration. The resource categorization schema outlined by R-A theory can serve as an important organizational tool. Recall that R-A theory divides resources into seven basic categories: financial, physical, legal, human, organizational, informational, and relational. In addition, the theory suggests that firms are capable of combining these resources into complex, higher order resources. These categories provide marketing managers with a

conceptual framework that can be used to identify important resources.

Second, the firm should perform a resource analysis on itself to identify its resource configuration. Using R-A theory's resource categorization schema as a guide, the firm should identify its (presently) available resources. However, not all of a firm's resources will be important elements in the strategy implementation process. Therefore, firm resources should only be included in the analysis if they aid in the implementation of the desired segmentation strategy. For example, one key resource that was available to B&D prior to implementing its current segmentation strategy for power tools was the DeWalt brand name. (The DeWalt name had been a well-respected name among professionals who used power tools prior to its use in B&D's segmentation strategy.) Therefore, the brand equity in "DeWalt" implied that any resource analysis pertaining to B&D's segmentation strategy for power tools should include the highly valued DeWalt brand name. However, the DeWalt brand would not be included as a resource when it comes to implementing a segmentation strategy for home appliances. (The B&D name is used for home appliances.) Therefore, resource analyses will most likely include only a subset of a firm's resources because not all firm resources aid in the implementation of a given segmentation strategy.

Third, the firm should compare its resource configuration to the "ideal" resource configuration. Differences would indicate areas that the firm needs to address prior to implementing the strategy. For example, a power tool manufacturer desiring to implement a segmentation strategy similar to B&D's strategy may find that they do not have access to a strong brand name that can be used in the professional power tool segment. If management perceives that its configuration differs significantly from the "ideal" configuration, they may choose to (1) not implement the segmentation strategy, (2) acquire the needed resources (e.g., B&D purchased the DeWalt brand in the 1960s), or (3) devise a way to gain access to the desired resource (e.g., a firm could license a brand name for use with its products—B&D licenses its brand name to Applica Consumer Products, Inc. Applica uses the B&D brand name on its line of small appliances such as blenders and toasters.). Therefore, managers are able to make better-informed decisions by using a profile deviation approach based on R-A theory.

6. Market Segmentation, Social Welfare, and R-A Theory

Returning to the macromarketing issues raised by Layton (2002), recall the concerns of some researchers regarding the effects of the "artificial" fragmenting of markets. They argue that market segmentation strategies distort consumer demand and lead to welfare losses in the form of higher prices, lower quantities, excess capacity, inferior products, and the exploitation of the factors of production. As discussed, common estimates by neoclassical economists as to the welfare losses related to segmentation strategies range from .1% to 13% of U.S. GDP. Given that most markets are substantially heterogeneous, and, therefore, market segmentation strategies do not artificially fracture the market, what are the implications for society? Are, despite the fact that market segments are naturally occurring phenomena, market segmentation strategies still harmful to the welfare of society?

Because society benefits from wealth creation, productivity (i.e., efficiency and effectiveness), and economic growth, we argue that market segmentation strategies have a positive impact on the welfare of society. Recall that, for R-A theory, (1) firms compete on a segment-by-segment basis, (2) competition is a process characterized by firms striving constantly to find/develop resources that allow them to occupy marketplace positions of competitive advantage because such positions lead to superior financial performance, and (3) firms that learn, from marketplace signals, that they occupy marketplace positions of competitive disadvantage attempt to neutralize and/or leapfrog the advantage firm(s) by acquisition and/or innovation. Therefore, if allowed by a society's institutions to flourish, R-A competition "prompts the proactive and reactive innovations that create the new tangible, intangible, and higher order resources that ultimately result in productivity and economic growth" (Hunt and Arnett 2002, p. 23). That is, segment-by-segment competition leads to increases in productivity and economic growth, and market segmentation strategies often result in market offerings that better satisfy consumers' wants/needs, such strategies have a positive effect on public welfare. The concerns of neoclassical economics about segmentation strategies are unfounded. Such strategies should be promoted by public policy.

7. Conclusion

Although market segmentation strategy is a well-accepted component of marketing strategy and a fundamental concept of modern marketing, extant theories of competition in neoclassical economics do not

provide theoretical foundations for it. Indeed, theories of competition from mainstream economics view market segmentation as detrimental to societal welfare. Therefore, neoclassical theories of competition cannot guide researchers and practitioners who are interested in studying and/or implementing market segmentation strategies. However, R-A theory can provide a theoretical foundation for market segmentation strategy because it (1) provides for the existence of demand heterogeneity, (2) justifies why firms often choose to produce and market a variety of market offerings in the same industry, and (3) explicates a mechanism by which market segmentation can lead to superior financial performance.

Specifically, R-A theory recognizes that, because demand is substantially heterogeneous within most industries, firms are able to engage in segmentation strategies. Furthermore, R-A theory maintains that, because consumers look for market offerings that match closely the constellations of attributes they desire, it often makes sense for firms to develop different market offerings, with each tailored to match closely the constellations of attributes desired by a given segment of consumers. Finally, R-A theory shows how market segmentation strategies can lead to superior financial performance. That is, firms will be rewarded with superior financial performance` when they are able to develop market offerings that match (more closely than rivals) the needs of a specific market segment and, therefore, they occupy a marketplace position of competitive advantage.

Because R-A theory provides a theoretical foundation for market segmentation strategy, the theory can be used to guide market segmentation theory and practice. R-A theory suggests that market segmentation strategies will be more successful when: (1) intra-industry demand is substantially heterogeneous, (2) the target segment demand is relatively large (or has a large growth potential), (3) a firm's market offering is well-tailored to a target segment's tastes and preferences, (4) competitors' offerings are not well-tailored to each segment, and (5), given that a firm's market offerings are viewed as equal to or better than rivals' market offerings, the firm's resource costs (relative to competitors) do not increase to the point it would occupy an indeterminate marketplace position (cell 9A in Figure 2) or disadvantageous marketplace position (cell 8A in Figure 2). In addition, R-A theory provides managers with conceptual tools (e.g., its classification schema for resources) that aid in the implementation of market

segmentation strategies. Finally, when firms use segmentation strategy to compete on a segment-by-segment basis, the resulting competition prompts both proactive and reactive innovations. These innovations, in turn, promote increases in firm-level, industry-level, and societal-level productivity. Because these increases in productivity foster wealth creation and economic growth, the use of market segmentation is not just good, firm-level *strategy,* the promotion of such use is also excellent, societal-level, public *policy.*

Notes

1. Perfect competition theory is a central part of the knowledge content of the neoclassical research tradition in economics. Other key components include demand theory, general equilibrium theory, the theory of the firm, and a predisposition toward equilibrium analyses and mathematics as the preferred language of discourse. Nelson and Winter (1982) point out that the neoclassical research tradition dominates mainstream economics, and they explore whether the neoclassical tradition has become an "orthodoxy," that is, whether it provides a "narrow set of criteria that are conventionally used as a cheap and simple test for whether an expressed point of view on certain economic questions is worthy of respect" (p. 6). They conclude: "Our own thought and experience leave us thoroughly persuaded that an orthodoxy exists…and that it is quite widely enforced" (p. 6). For more on the implications of the neoclassical research tradition and how R-A theory differs from it, see Hunt (2000b) and Hunt and Arnett (2001).

2. An alternative process-oriented conceptualization is *aggregation,* as opposed to *partitioning.* In this view, the market is assumed to be completely (not just substantially) heterogeneous (i.e., each and every consumer has a set of needs and wants that is in some ways unique). Firms then categorize consumers into groups, based on (relatively) similar needs, wants, and behaviors, and produce market offerings tailored to the resulting groups. (We thank John Branch of Washington University for suggesting this alternative conceptualization to us through personal correspondence.)

3. See Hunt (2000b, pp. 39-49) for a discussion of Chamberlin's views of product differentiation and how those views changed through time.

4. The phrase "variety seeking," for many authors, connotes the view that it is consumer whimsy that drives demand heterogeneity. While it is true that differences at

times are whimsical, we maintain that genuine differences in consumer needs, wants, and use requirements are the primary factors driving demand heterogeneity.

5. The "practical purposes" she had in mind included the drawing of demand and supply curves for the "automobile market." Homogeneity is required in such cases for the determination of equilibrium prices and quantities. Analyses in the neoclassical tradition continue to follow Robinson's (1933) example. Chamberlin's (1954) later work disagreed strongly with the suggestion that the automobile industry, for the "practical purposes" of generating demand and supply curves, could be viewed as homogeneous.

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Biographies

Shelby D. Hunt is the Jerry S. Rawls and P. W. Horn Professor of Marketing at Texas Tech University, Lubbock, Texas. A past editor of the Journal of Marketing (1985-87), he is the author of numerous books, including Foundations of Marketing Theory: Toward a General Theory of Marketing (M.E. Sharpe, 2002), Controversy in Marketing Theory: For Reason, Realism, Truth, and Objectivity (M.E. Sharpe, 2003), and A General Theory of Competition: Resources, Competences, Productivity, Economic Growth (Sage Publications, 2000). One of the 250 most frequently cited researchers in economics and business (Thompson-ISI), he has written numerous articles on competitive theory, macromarketing, ethics, channels of distribution, philosophy of science, and marketing theory. Three of his Journal of Marketing articles, "The Nature and Scope of Marketing" (1976), "General Theories and Fundamental Explananda of Marketing" (1983), and, with Robert M. Morgan, "The Comparative Advantage Theory of Competition" (1995), won the Harold H. Maynard Award for the "best article on marketing theory." His 1985 Journal of Business Research article with Lawrence B. Chonko, "Ethics and Marketing Management," received the 2000 Elsevier Science Exceptional Quality and High Scholarly Impact award. His 1989 article, "Reification and Realism in Marketing: in Defense of Reason," won the Journal of Macromarketing Charles C. Slater Award. His 1994, "Commitment and Trust," Journal of Marketing article, with Robert M. Morgan, is the most highly cited article

in economics and business in the 1993-2003 decade (Thomson-ISI). For his contributions to theory and science in marketing, he received the 1986 Paul D. Converse Award from the American Marketing Association, the 1987 Outstanding Marketing Educator Award from the Academy of Marketing Science, the 1992 American Marketing Association/Richard D. Irwin Distinguished Marketing Educator Award, and the 2002 Society for Marketing Advances/Elsevier Science Distinguished Scholar Award.

Dennis B. Arnett is an assistant professor of marketing at Texas Tech University, Lubbock, Texas USA. He holds degrees in mathematics and education and a Ph.D. in marketing. He has written numerous articles on competitive theory and identity theory that have appeared in such journals as the Journal of Marketing, Journal of Public Policy & Marketing, Journal of Retailing, Journal of Marketing Theory and Practice, Business Ethics Quarterly, Journal of Leisure Research, International Journal of Sports Marketing & Sponsorship, Journal of Hospitality & Tourism Research, Competitive Intelligence Review, and the Cornell Hotel and Restaurant Administration Quarterly.

Correspondence Addresses

Shelby D. Hunt, The Jerry S. Rawls and P.W. Horn Professor of Marketing, Texas Tech University, Department of Marketing, Lubbock, Texas 79409-2101, Telephone: (806) 742-3436, Facsimile: (806) 742-2199, E-mail: sdh@ba.ttu.edu; Dennis B. Arnett, Assistant Professor of Marketing, Texas Tech University, Department of Marketing

A Commentary on Hunt and Arnett's Paper

**Market Segmentation Strategy, Competitive Advantage, and Public Policy:
Grounding Segmentation Strategy in Resource-Advantage Theory**

Jack Cadeaux

Market segmentation has both strategic and operational dimensions. As a strategic decision, segmentation involves the determination of the characteristics and number of segments for which to develop distinct marketing programs for a product market entry. As an operational decision, segmentation involves the allocation of resources across these segments so as to optimise some objective (eg, profit or sales). In principle, both of these decisions can be treated as static policy choices or as more dynamic processes. In principle, either strategic or operational market segmentation from either a static or dynamic standpoint could be "grounded" in some theory of competition. The problem is to match the right class of segmentation decision with the right class of competition "theory." There are a number of possible candidates for a useful theory of competition in this context. The essay in this issue of ***amj*** by Hunt and Arnett considers two of these: 1) the implicit competition theory found in the neoclassical theory of market heterogeneity and product differentiation along with its closely related cousin, the theory of price discrimination and 2) the resource-advantage (R-A) theory of competition. Their essay broadly critiques the grounding value of the former candidate and broadly favours the candidature of the latter, that is, the R-A theory. Although there are a number of potentially more valuable alternative candidates (eg, game theoretic models as well as dynamic multiple competitive reaction models), since Hunt and Arnett (2004) choose to position R-A theory as a superior alternative *only* in comparison to neoclassical economic perspectives, this commentary will similarly restrict its scope to that particular debate in this marketplace of ideas.

Hunt and Arnett (2004) review the basic arguments and conditions that favour a market segmentation strategy. They use three brand lines from Black and Decker as a continuing example. They try to argue that market segmentation, to be effective, must be "grounded" in some theory of competition and find the R-A theory of competition to be particularly appropriate for this purpose. Many of the observations about market segmentation raised in their article reflect mainstream thinking in marketing and probably will come as no surprise to most marketing scholars. Nevertheless, their article seems to have two implicit objectives for extending our understanding of segmentation phenomena. The first is to "ground" some basic segmentation principles in a relevant competition theory, here R-A theory. The second is to argue against neoclassical economics' tendency to downplay market heterogeneity and to characterise segmentation policies that attempt to capitalise on heterogeneity (particularly with regard to explicit or implicit price discrimination) as having adverse welfare effects.

Hunt and Arnett (2004) claim that neoclassical economics tends to view heterogeneous demand as largely an artificial creation of marketers whilst marketing theory treats such heterogeneity as naturally occurring and as eliciting socially beneficial marketing efforts to satisfy diverse segments of customer demand. The resulting *caricaturisation* depicts neoclassical economics as condemning sellers' efforts to capitalise on demand heterogeneity particularly via price discrimination. But few if any marketing scholars now subscribe to the idea that price discrimination is a crude "indicator" of monopoly power and, as such, somehow anti-competitive and anti-social. On the contrary, segmentation, when viewed specifically as the potential to extract consumer surplus across segments with differing demand (and valuations), can quite reasonably be viewed as a distinct source of (or mechansim for achieving) competitive advantage (see, for example, Davis and Devinney 1997). And there is little support amongst, for example, American marketing scholars for archaic and infrequently enforced anti-price discrimination legislation (such as the

US Robinson-Patman law). In these senses, Hunt and Arnett's (2004) depiction of the neoclassical view comes across as a bit of a straw man.

The more serious question Hunt and Arnett raise for marketing scholars is whether and how the R-A theory of competitive advantage adds value to any basic theory of segmentation. Yet, many of their observations do not venture beyond basic principles regarding segment size, market heterogeneity, distinctive product offering value, and cost. These principles can be found in most basic textbook checklists. Thus, for example, in Section 5, Hunt and Arnett state that

…a market segmentation strategy will be more successful… when (1)…demand is substantially heterogeneous, (2) the target segment demand is relatively large (or has a large growth potential), (3) a firm's market offering is well-tailored to a target segment's taste and preferences, (4) competitor's offerings are not well-tailored to each segment, and (5) given that a firm's market offerings are viewed as equal or better than the rival's market offerings…the firms resource costs… [are lower than competitors]

It is difficult to imagine how anyone would argue with such well-accepted principles. Thus, there is a serious question as to whether R-A theory, as used by Hunt and Arnett (2004), constitutes a worthwhile theory of *competition* and *competitive* advantage or amounts to little more than a rather trivial set of principles about market *demand,* resource *cost* and *comparative* advantage. Rather confusingly, in section 3, Hunt and Arnett claim that "...when firms have a *comparative* advantage (disadvantage) in resources, they will occupy marketplace positions of *competitive* advantage (disadvantage)." (emphases mine). Yet, arguably, for cost to be a sustainable basis for competitive advantage, it is insufficient for it to be based on a static comparison of resources but rather on unique and non-imitable economies of scale, scope, or experience (an issue discussed at some length in Davis and Devinney 1997).

More to the point with regard to market segmentation, the classic treatise by Frank, Massy and Wind (1972) and subsequent work by Massy and Weitz (1977) clearly show that it is mix tool response heterogeneity that is the conceptual basis for a normative theory of market segmentation. Such a theory clearly and explicitly incorporates optimal allocation rules in a manner analogous to rules for optimal price discrimination. However, as such, that theory wasn't really a theory of segmentation as a *strategy* but was simply an operational theory of cross-segment resource allocation (since strategic choices by definition are not subject to optimisation rules). Nor, of course, was it based on a theory of competition. Thus, Hunt and Arnett (2004) are quite correct that we could need a better theory of segmentation as strategy, particularly one with a competitive strategy basis. While this is an admirable research agenda, the particular proposal presented in their article seems to fall short of this ambition. The "competitive matrix" presented by Hunt and Arnett and the application of R-A theory don't seem to have enough power to truly "ground" segmentation theory, although this itself is a rather amorphous objective. There are probably several reasons why. One may be that R-A theory is a theory of firm resources and corporate competitive advantage whilst market segmentation theory is a theory of marketing strategy at the level of the product market entry. Thus links between the two will yield only fairly superficial generalisations. It is not surprising, therefore, that Hunt and Arnett tend to make fairly trivial and even trite conclusions ("a firm will have a disadvantage in a given segment, if it produces (1) a market offering perceived as having lower value compared to rivals' market offerings at the same cost as rivals…" (Section 4). They inadequately and too casually treat the admittedly slippery R-A concept of "competitive advantage" and too simplistically apply it to segmentation policy. For example, they assert that

R-A theory maintains that firms that are successful in developing market offerings that provide more value to consumers in specific market segments and/or provide market offerings at a lower cost (relative to competitors) will occupy marketplace positions of competitive advantage. In turn, positions of competitive advantage lead to superior financial performance. (Section 4)

These sweeping yet apparently plausible assertions could fail to capture the essence of "competitive advantage" even from an R-A perspective. Most analysts argue that for a resource to be strategically valuable and to yield a sustainable competitive advantage, it should be unique and nonimitable, and may further benefit from such important (R-A) characteristics as path dependency and rent appropriability (by the owning firm). To simply offer superior value to a "target segment" at lower cost than competitors is such a widely held yet elusive aspiration that it fails to meet such criteria. It is hardly a unique or nonimitable competitive strategy. It's not even clear that it is a strategy at all.

Finally, by using the Black and Decker example, Hunt and Arnett (2004) implicitly obfuscate the distinctions between target market selection, competitive positioning, and market segmentation. Arguably, one could more productively and realistically view the three brand lines (B&D, Firestorm, and DeWalt) as being targeted at three distinct markets (not "segments" as such) and as having three distinct positionings relative to competitors within in these same three product markets. That is, B&D has a certain positioning within the DIY market (against other DIY brands) and DeWalt has its own positioning within the "Professionals" market (against other professional brands). The choice of competitive positionings within these markets is certainly a matter of competition-based segmentation strategy. But these two markets are not in competition with each other. Competition occurs within them. For example, in a recent print advertisement in Australia, a power drill in the professional DeWalt range is advertised at a price of over *ten times* that of a typical DIY model. That kind of difference isn't simply a price point distinction aimed at extracting consumer surplus from market segments with differing mean reservation prices. More likely, it indicates that the two product ranges are developed for two totally distinct underlying target markets (and, hence, compete in two distinct competitive product markets). Thus, the so-called "strategy" of having three brand lines competing in three product markets is not a competitive strategy as such. It is simply a product-market portfolio choice. Furthermore, a pure (non-competition based, product-tool level) segmentation "strategy" for, say, the DeWalt line would involve policies about the number of variants in the line (eg, price points of drills) within that brand range rather than policies about the portfolio of *non-competing* brands. Unfortunately, such obfuscation of strategic levels of analysis is quite common if not endemic in some circles. It permeates far too many of our marketing textbooks. To that extent, Hunt and Arnett can be forgiven. However, any incrementally useful "grounding" of segmentation theory in a theory of competition must operate at the level of marketing strategy for a product market entry, not at the well-worn and fairly well-understood level of a business's portfolio of branded product market entries itself.

Furthermore, Hunt and Arnett's discussion (Section 5.1) on resource set and segmentation strategy fit appears to be really concerned with market selection or entry because the only "segmentation strategy" considered is whether to enter particular markets. A discussion of target market selection or entry would be quite fine if

that were the scope of their article and its claims, but, unfortunately, it clearly is not. Instead, they claim to be treating segmentation (quite properly) as the development of different mixes for different segments (which they must be, in the first instance, to be consistent with their welfare discussion of price discrimination). But segmentation in the latter sense is vastly different from (target) market selection or entry. Thus, for example, it is rather surprising that the authors assert in their conclusion that segmentation (multiple mixes) induces innovation (in some entrepreneurial sense). This conclusion is not supported by any plausible arguments or evidence in their article. In fact it is probably quite wrong. Rather, the kind of resource set that fits a segmentation strategy (specifically for multiple product segmentation) is one of flexible manufacturing rather than product innovation, precisely because flexible manufacturing allows the firm to get a cost advantage otherwise available to competitors with higher share and scale pursuing a mass market (ie, non-segmentation) product strategy. But as one analyst argues,

Flexible manufacturing is not new product introduction or target market selection; once implemented, it does not affect product market structure. The management of diversity is not the creation of change.

...the selection by a firm of target markets to pursue involves the selection of customers and customer uses to satisfy; such selection is quite strategic and entrepreneurial. (Cadeaux, 1997, p. 777)

In the latter sense, target market selection, in contrast to product segmentation, does involve the dynamic process of matching changing assortments of products and services with changing arrays of customer wants (Alderson 1957, 1965, Reekie and Savitt, 1982, Dickson 1992). In that sense, target market selection has already been "grounded" in something quite close to an R-A theory of competition (that is, Alderson's dynamic marketing theory and Dickson's theory of "competitive rationality"). In that sense, and in contrast to market segmentation, target market selection, as an entrepreneurial action, could, in and of itself, be a pure source of competitive advantage. Importantly, Hunt and Arnett (2004) argue that R-A theory accepts as its premise that intra-industry demand is heterogeneous. This assumption has also been the basis for the so-called "Austrian" approach to entrepreneurial theory in marketing (Reekie and Savitt 1982). In that sense, R-A theory along with neo-Austrian approaches (such as Dickson 1992 and others) does in fact "ground"

competition theory in a theory of market heterogeneity (or segmentation), but by doing so it does not say anything about the implied converse: that is, it does not, in itself, help "ground" a theory of market segmentation in a theory of competition.

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Biography

Jack M. Cadeaux is a Senior Lecturer in Marketing at the School of Marketing at the University of New South Wales. He holds a PhD in Marketing from the University of California at Berkeley. His research lies in distribution channels, retailing, macromarketing, and marketing strategy. He has authored articles published in the European Journal of Marketing, Journal of Macromarketing, Journal of Business Research, Journal of Business and Industrial Marketing, Journal of Nonprofit and Public Sector Marketing, Journal of Marketing Channels, International Journal of Retail and Distribution Management, and the International Review of Retail, Distribution, and Consumer Research. He serves on the Editorial Review Board of the Australasian Marketing Journal and on the Editorial Policy Board of the Journal of Macromarketing.

Correspondence Address

Jack M. Cadeaux, School of Marketing, University of New South Wales, Sydney, NSW 2052. Telephone: +61 (2) 9385 1436. Facsimile: +61 (2) 9663 1985. E-mail: j.cadeaux@unsw.edu.au

A Commentary on Hunt and Arnett's Paper

Market Segmentation Strategy, Competitive Advantage, and Public Policy:
Grounding Segmentation Strategy in Resource-Advantage Theory

Grahame R. Dowling

In the late 1980s and early 1990s a number of papers in the field of corporate strategy extolled the idea that firms with a comparative advantage in resources often developed a marketplace advantage (see the Barney 1991, Conner 1991, Wernerfelt 1986 references in Hunt and Arnett). This theory gained traction in the discipline of marketing because it defined "resources" in such a way that intangibles like brand equity and customer relationships could, and many marketers said *should,* be included in a firm's asset portfolio. Shelby Hunt and a number of his associates have been instrumental in 'bringing this theory across' to marketing. The story-line they used to sell the resource-advantage (R-A) theory to marketers was to compare it with some simple notions of competition from neoclassical economics. This comparison is repeated in this paper.

Many businesspeople often refer to economics as "the dismal science" – in part because it struggles to offer practical advice about how to compete. One significant contribution of marketing, and a point of difference with economics, is the explicit recognition that for many products and services, in both B2B and B2C markets, customers are heterogeneous – in their needs, preferences, decision-making, et cetera. Hunt and Arnett use this idea of customer segments as a central tenet in their paper. As they state, few marketers would disagree that creating segments of customers has facilitated the more efficient and effective design of marketing programs. That is, segmentation is a key part of the competitive strategy of many organizations. Marketers often refer to this approach as STP Marketing – segmentation, targeting and positioning.

Hunt and Arnett's thesis is that R-A theory "permits the success of market segmentation strategy" (p. 17). That is, R-A theory "provides the theoretical foundation for market segmentation strategy" (p. 7). My interpretation of these statements is that R-A theory is one of the

parents, or grandparents of segmentation. This is an interesting idea – but one that I think traces segmentation to the wrong branch of the family tree. I would like to briefly outline the source of this confusion and its possible resolution.

Without going through the full argument advanced by Hunt and Arnett, let me focus on one of its central propositions:

"When firms have a comparative advantage (disadvantage) in resources, they will occupy marketplace positions of competitive advantage (disadvantage)." (p. 14)

Now, at first glance, this seems to be an eminently sensible idea. The better endowed a firm is, the more advantageous this is. However, it overstates the case. And it is this overstatement that leads to confusion about the linage and thus the potential inter-dependent roles of R-A theory and market segmentation in corporate strategy.

Not all firms with a comparative advantage in resources realise a competitive advantage in the markets in which they choose to compete. It depends on how well, or poorly the firm's assets are actually *deployed.* Executive managers make decisions about how, and where these resources will, or will not be used. (For example, a current clarion call in many strategic planning sessions is to "sweat the assets".) Thus, it is both the resource base (type and configuration) and its deployment that leads to a realized competitive advantage. Consider a mining company that has exploration leases and/or untapped reserves, or a professional service firm that does not fully utilise the skills and capabilities of its employees. Both these organisations could have a (un-tapped) resource advantage but may not have a realised competitive advantage.

A contingency version of R-A theory says that the deployment of resources is just as important as their

acquisition. In this version of the theory, the question becomes "what is the role of segmentation?" My argument is that segmentation is one of the ways that organisations seek to deploy their resources. As Hunt and Arnett suggest in their paper, when customers (markets) are heterogeneous (as empirically determined), then forming customer segments and targeting the best ones with different marketing programs is the most efficient and effective way to enhance profitability. Each such program is a unique combination of the firm's resources. If the segmentation is done well, then the resources can be deployed to create marketing programs that will deliver a marketplace advantage.

If we re-formulate Hunt and Arnett's version of R-A theory into a contingency model, then STP marketing is no longer a direct descendent of R-A theory. It is more like a spouse's relative – one who can help other family members to better manage their affairs. From this perspective, segmentation becomes a very useful tool in the strategist's toolkit, as opposed to a derivative of a currently popular approach to formulating corporate strategy. In fact, segmentation is one of the factors that makes R-A theory 'work'.

Segmentation also plays a role in other models of strategy. For example:

- When customers are homogeneous *economies of scale* are important to pursue; however, when they are heterogeneous, segmentation suggests that *economies of scope* and *focus* should come into play.

- Customer heterogeneity that is well analysed to produce insightful segments can be used to focus *innovation* – in new product and service development.

- In Michael Porter's *five-forces* model of *rivalry,* segmentation allows us to fine tune our understanding of industry-based competition by 'unpacking' the buyers.

- When the *shared beliefs* of managers play a crucial

role in formulating strategy, segmentation both suggests and helps to achieve a better customer focus.

- In a *stakeholder* model of strategy, one of the key groups is customer segments.

- In the *value-net* model of strategy, segmenting customers will offer more insight into who is a complementor and a competitor.

The point being made here is that segmentation is not subservient to any theory of corporate strategy. It is one of the few 'big ideas' marketing has formulated to help organisations incorporate customers into their overall strategy. And herein lies my major criticism of Hunt and Arnett's paper – it gives segmentation the second billing, whereas I would give it first or at least equal billing.

The thesis advanced in this paper is that segmentation should guide the implementation of R-A based, and many other types of strategic thinking - if for no other reason than it is customers who have the final say about whether a strategy will succeed of fail. Hunt and Arnett may well say that their paper accommodates this thesis. However, my reading of their paper suggests that the balance of their argument is that R-A theory guides segmentation – as evidenced by the statement in the Conclusion that "the theory can be used to guide market segmentation theory and practice." (p. 21).

Biography

Grahame R. Dowling is Professor of Marketing at the Australian Graduate School of Marketing (AGSM). His principal research interests lie in the areas of corporate reputation, marketing of professional service firms, adoption and diffusion of innovations, and customer relationship management (CRM) programs.

Correspondence Address

Grahame R. Dowling, Professor of Marketing, Australian Graduate School of Management, UNSW, Sydney, NSW, 2052. Telephone:+61 (2) 9931 9369, E-mail: grahamed@agsm.edu.au

A Response to Cadeaux and Dowling

Market Segmentation Strategy and Resource-Advantage Theory

Shelby D. Hunt and Dennis B. Arnett

Our article, "Market Segmentation Strategy, Competitive Advantage, and Public Policy: Grounding Segmentation Strategy in Resource-Advantage theory," discusses the nature of market segmentation strategy and identifies the characteristics that a positive theory of competition must possess if it is to provide a theoretical foundation for normative segmentation strategy. The article then discusses resource-advantage theory and argues that R-A theory, by meeting the criteria, provides a theoretical foundation for market segmentation strategy, that is, R-A theory can "ground" segmentation strategy. Furthermore, it argues that competition involving the use of market segmentation promotes public welfare by prompting innovations that foster firm-level, industry-level, and societal-level productivity.

Professors Cadeaux and Dowling provide comments on our article, and we thank them for taking the time to read and evaluate the arguments we present. Most of the issues that they raise in their comments result from a lack of familiarity with R-A theory. Because some readers may, similarly, not understand the nature of the theory, our reply will focus on the questions readers may have after reading our original article and the comments.

Questions Raised by Dowling

Is R-A theory a theory of the firm? Professor Dowling entitles his comment "Market Segmentation and the Resource-Advantage *Theory of the Firm*" (italics added). He claims that "Shelby Hunt and a number of his associates have been instrumental in 'bringing this theory across' to marketing from the "field of corporate strategy." As readers familiar with R-A theory will note, both of these claims are false. The claims confuse the "resource-based view of the firm" in the field of corporate strategy with the "resource-advantage theory of competition" that has been developed in marketing, management, and economics. The "resource-based view" is a positive theory of the *firm*, which has normative

implications for strategy. In contrast, R-A theory is a positive theory of *competition,* which also has normative implications for strategy. It is true that the resource-advantage theory of competition adopts a resource-based theory of the firm, as reflected in foundational premises P_6 and P_7 in Table 2 of our original article. However, as is appropriate for a theory of *competition,* R-A theory has seven additional premises in Table 2, which focus on demand and other competitive dimensions. Also, as shown in Figures 1 and 2, the theory makes additional claims about how the process of competition *works.* For readers interested in reviewing the affinities and differences between R-A theory and the resource-based view of the firm, see Hunt (2000b, pp. 84-87, 2002, Chapter 9) and Hunt and Derozier (2004).

Is R-A theory one of the "parents" of segmentation? Dowling claims that our article argues that "R-A theory is one of the parents or grandparents of segmentation," and he maintains that this "traces segmentation to the wrong branch of the family tree." However, our article makes no claims about the ancestry of segmentation theory. What we do claim is that market-based economies are premised on independently owned and managed firms *competing* with each other. Consequently, because market segmentation strategy is a firm-level strategy, it takes place within the *context* of competition. Therefore, we argue that R-A theory, a theory of competition, can provide a grounding for segmentation strategy. For readers interested in the ancestry of segmentation theory, see Hunt (2000b, pp. 39-52). For those interested in the ancestry of R-A theory, see Hunt (2000b, pp. 17-104).

Does R-A theory ignore issues in resource deployment? Dowling maintains that "not all firms with a comparative advantage in resources realize a competitive advantage in the markets in which they choose to compete." For him, "competitive advantage depends on how well or poorly the firm's assets are actually *deployed* " (p. 30).

However, Dowling's criticism reflects a misunderstanding as to how R-A theory conceptualizes resources. For R-A theory, resources are defined as the tangible and intangible entities available to the firm that enable it to produce efficiently and/or effectively a market offering that has value for some marketing segment(s). Therefore, all "assets" on a firm's balance sheet are not necessarily resources, and all resources -- including some of the most important ones -- are not balance-sheet assets.

Furthermore, R-A theory distinguishes between basic and "higher order" resources. For example, the theory views organizational *competences* as "higher order" resources, that is, "as socially complex, interconnected, combinations of tangible basic resources (e.g., specific machinery) and intangible basic resources (e.g., specific organizational policies and procedures and the skills and knowledge of specific employees) that fit coherently together in a synergistic manner" (Hunt 2000, p. 144). Therefore, R-A theory does not ignore the deployment of what Dowling calls "assets." Rather, R-A theory posits that firms may have an organizational competence in proficiently deploying the basic resources that are available to the firm. For more on how R-A theory incorporates competences of all kinds see Hunt (2000 a and b, pp. 87-89) and Hunt and Derozier (2004).

Should R-A theory be re-formulated into a contingency theory? Dowling states: "if we re-formulate Hunt and Arnett's version of R-A theory into a contingency model, then STP marketing is no longer a direct descendant of R-A theory" (p. 31). However, there is no need to "re-formulate" R-A theory into a contingency theory, for the theory is already a contingency theory. As readers who are familiar with the development of R-A theory will recall, the article by Hunt and Morgan (1995) that first articulated the theory specifically pointed out that entities, including many "assets," become *resources* only contingently: "an asset that is a resource in one environment can become a nonresource in another if it no longer contributes to the creation of value in the firm's market offering. Even more seriously, something that was previously a resource can become what we label a 'contra-resource' and actually inhibit the creation of value in the firm's market offering" (p. 12). In the original article, we used the policy of "permanent employment" to illustrate how an entity may be a resource in one environment and a nonresource or contra-resource in another environment. Because resources are conceptualized in a contingency manner,

R-A theory is already a contingency theory and need not be re-formulated.

Is segmentation one of the factors that makes R-A theory work? Dowling maintains that "segmentation is not subservient to any theory of corporate strategy. It is one of the few 'big ideas' marketing has formulated to help organisations incorporate customers into their overall strategy" (p. 31). However, nothing in our article implies that segmentation is subservient to anything. As we state in our article, R-A theory is a theory of competition. It provides explanations and predictions regarding the *process of competition.* One aspect of that process involves the various strategies (e.g., market segmentation strategies) that firms employ and their effects on the firms that employ them, other rival firms, and consumers. Therefore, R-A theory, as a theory of competition, should be able to explain how such theories influence the process of competition. That is, R-A theory must be capable of providing theoretical foundations for them. We agree with Dowling that segmentation strategy is (or ought to be) an important component of a firm's overall strategy. However, we note that it is only one of many factors that influence the process of competition.

Questions Raised by Cadeaux

Is our discussion of neoclassical perfect competition and its implications for market segmentation a "caricaturisation" (p. 26) and a "straw man" (p. 27)? Cadeaux maintains that we compare R-A theory with a "caricaturisation [that] depicts neoclassical economics as condemning sellers' efforts to capitalise on demand heterogeneity" (p. 26). Furthermore, the "depiction of the neoclassical view comes across as a bit of a straw man" (p. 27) and we should have compared R-A theory with "potentially more valuable alternative candidates (e.g. game theoretic models, as well as dynamic multiple competitive reaction models)" (p. 26). In response, we first point out that Cadeaux provides no evidence that our discussion of the neoclassical view of market segmentation is anything other than accurate. We suggest that the reason no evidence is provided is that none exists. Second, neoclassical perfect competition theory still dominates public policy discussions concerning antitrust laws and their enforcement, at least in the United States. If neoclassical perfect competition theory is a straw man, it is the most influential straw man ever seen, as the numerous firms charged with antitrust violations each year will attest. For a more complete discussion of antitrust laws and R-A theory, see Hunt (2000 b, pp. 247-256) and Hunt and Arnett (2001).

Third, we would welcome the efforts of theorists to compare and contrast R-A theory with other theories. However, the theories to which it should be compared are theories of competition. Needless to say, "game theory," contra-Cadeaux, is *not* a theory of competition. Rather, game theory is a collection of formal modeling techniques that have been found to be useful in understanding the strategic choices of participants when they are placed in a game situation involving, at the minimum, players, strategies, and payoffs. As Baird, Gertner, and Picker (1994, p. 7), themselves advocates of game theory, put it, "game theory, like all economic modeling, works by simplifying a given social situation and stepping back from the many details that are irrelevant to the problem at hand. The test of a model is whether it can hone our intuition by illuminating the basic forces that are at work but not plainly visible when we look at an actual case in all its detail." In short, game theory may inform us as to what choices competitors might adopt in highly stylized, game-like circumstances, but game theory itself is not a theory of competition against which R-A theory can be compared.

Is R-A theory confused about competitive advantage? Cadeaux (p. 27 states: "rather confusingly, in section 3, Hunt and Arnett claim that when firms have a *comparative* advantage (disadvantage) in resources, they will occupy marketplace positions of *competitive* advantage (disadvantage). Yet, arguably, for cost to be a sustainable basis for competitive advantage, it is insufficient for it to be based on a static comparison of resources but rather on unique and non-imitable economies of scale, scope, or experience" (p. 27). However, those familiar with R-A theory will quickly note that the theory isn't confused at all. Readers should note that R-A theory, with its emphasis on renewal competences, proactive innovation, and reactive innovation is a dynamic theory of competition (see Hunt 2000b, pp. 135-153). Therefore, the theory does not rely on a "static" analysis.

Furthermore, R-A theory clears up the confusion that has resulted from writers using "competitive advantage" as a generic descriptor of all kinds of advantage. Indeed, a major advantage of R-A theory is that it-- and only it, to our knowledge -- draws sharp distinctions among three concepts that clear thinking requires should be kept separate: (1) marketplace positions of *competitive* advantage at a point in time, (2) *comparative* advantages in resources at a point in time, and (3) positions of competitive advantage that are *sustainable* through some

extended period of time. First, firms pursue marketplace positions of competitive advantage because such positions lead to superior financial performance (see Figure 1 in our original article). These marketplace positions of competitive advantage may be based on lower relative costs or superior perceived value, or both (see Figure 2 in the original article). Second, R-A theory posits that the reason why firms occupy marketplace positions of competitive advantage is that they have some comparative advantage in resources. Therefore, the theory explains why some firms have positions of advantage (and disadvantage). Third, marketplace positions of competitive advantage will tend to be more long-lived (i.e., more *sustainable*) when the comparative advantages in the resources that produce the marketplace positions of competitive advantage result from resources that are relatively immobile, highly complex, interconnected, exhibit mass efficiencies, or tacit, or exhibit time compression diseconomies. Furthermore, for R-A theory, the advantages are more long-lived when there is there is causal ambiguity as to why consumers favor the advantaged competitor's market offering or causal ambiguity as to the nature of the resources that are being used by a competitor to produce the offering that occupies the position of competitive advantage. In short, rather than confusing these constructs, R-A theory shines bright light on issues related to competitive advantage.

Does competition involving segmentation strategy prompt innovation? Cadeaux maintains "that the authors assert in their conclusion that segmentation (multiple mixes) induces innovation (in some entrepreneurial sense). This conclusion is not supported by any plausible arguments or evidence in their article. In fact it is probably wrong" (p. 28). Readers familiar with R-A theory will quickly note that our discussion related to innovation is correct. First, what, indeed, did we claim? We claimed in our final paragraph that "when firms use segmentation strategy to compete on a segment-by-segment basis, the resulting competition prompts both proactive and reactive innovations" (p. 21). Second, to see how competition using segmentation strategy prompts innovation, we invite readers to re-read our definition of market segmentation *strategy:*

Market segmentation strategy, as used here, is a broad concept that refers to the strategic process that includes (1) identifying bases for segmentation, (2) using the bases to identify potential market segments, (3) developing combinations (portfolios) of segments that are strategic alternatives, (4) ascertaining the resources

necessary for each strategic alternative, (5) assessing existing resources, (6) selecting an alternative that targets a particular market segment or segments, (7) securing the resources necessary for the target(s), (8) adopting positioning plans for the market offerings for the segments, and (9) developing marketing mixes appropriate for each segment (p. 8).

There are numerous times when firms implement the process of segmentation in a manner that prompts innovation. For example, when (1) a firm analyzes a marketplace and spots a market segment that has been poorly served and/or not served at all in the past, and (2) the firm proceeds to develop a new product and other elements of the marketing mix for that particular segment, then (3) the firm has engaged in *innovation.* Our position was correct.

Does our article obfuscate the distinction between market selection, competitive positioning, and market segmentation? Cadeaux suggests, "Arguably, one could more productively and realistically view the three named lines (B&D, Firestorm, and DeWalt) as being targeted at three distinct markets (not "segments" as such) and as having three distinct positionings relative to competitors within these *same* three product markets" (p. 28). He argues further that these "markets" are not in competition with each other and, therefore, competition occurs within them, not between them. Therefore, what is described by our Black & Decker example "is simply a product-portfolio choice" (p. 28).

Are the three groups of consumers described in our Black & Decker example (homeowners/do-it-yourselfers, weekend warriors, and professional users) market segments or distinct markets? As Wilkie (1994, p. 244) suggests, "Consumer categorization provides the basis for competition in the marketplace. It will determine in which kinds of 'evoked sets' our product will appear as a candidate for purchase." A reexamination of the three groups reveals that they are, indeed, *segments* rather than *markets.* That is, rather than being "distinct" markets, each segment is comprised of consumers "whose tastes and preferences with regard to an industry's output are *relatively* homogeneous" (p. 13). If they were "distinct" markets, then they would be *totally* homogenous and no cross-over sales would occur. For example, if the markets for DeWalt products are distinct, they should not enter the evoked sets of homeowners/do-it-yourselfers. Yet, many owners of DeWalt products, though not professional power tool users, prefer and purchase DeWalt products. (Indeed, the

authors of this article both own DeWalt products, and we are certainly not professionals.)

Furthermore, even though Black & Decker targets different consumers with its different brands, it recognizes that consumers often choose to purchase brands that are not targeted specifically to them. That is, even though Black & Decker expends a great deal of effort steering its professional power tool consumers away from its other brands, it recognizes that to some extent its three brands compete with each other (Black & Decker 2001). Therefore, our use of the Black & Decker example does not obfuscate the distinction between market selection, competitive positioning, and market segmentation. Rather, the Black & Decker example illustrates how R-A theory can ground market segmentation strategy.

In conclusion, we thank Professors Dowling and Cadeaux for taking the time to read our article and provide comments on it. We hope that our reply has clarified the role that the resource-advantage theory of competition can play in grounding market segmentation strategy. This is one reason, among several others, that Hunt (2002) argues that R-A theory is "toward" a general theory of marketing. We invite readers to consider this claim.

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An Asian Perspective on Airline Industry eMarkets

Mark Neill & Sharon Purchase

Abstract

eMarkets allow buyers and sellers to conduct their business relationships within an electronic environment, yet companies are not participating in them as expected. This research investigates the buyer's perception of key success factors for eMarkets. The results indicated that both basic enablers and differentiators were perceived as a given. The implication for marketing strategy is that new differentiators need to be developed to position eMarkets relative to their competition. eMarket-makers also need to consider the impact of external environmental factors on the marketing strategies they develop.

Keywords: eMarketing, Asia, eCommerce

1. Introduction

Business-to-Business (B2B) eMarkets provide value by connecting buyers and suppliers within a virtual environment. The basic concept is similar to that of traditional (off-line) markets which bring buyers and sellers together in a central place such as a shopping mall, village fete or garage sale to trade goods and services, but with the use of Internet protocols within an electronic environment (Lennstrand, Frey and Johansen, 2001; Eng 2004). In addition, eMarkets utilise the power of the Internet by allowing companies to connect and transact on a 'global' basis without having to change their geographic location (Kandampully 2003).

In January 2000, GartnerGroup predicted that worldwide electronic B2B trade would grow from $145 billion in 1999 to $7.29 trillion in 2004 (GartnerGroup, 2000a). Many other analysts at that time presented similar forecasts for rapid growth in B2B e-commerce. However, a few months later, the B2B hype started to diminish. The news articles changed focus from success stories to reports on lay-offs and restructuring were expected to survive. AMR Research predicted in April 2000 that only 50-100 of the 600 venture capital-backed eMarkets would survive through year 2001. Only one or two huge eMarkets per industry were supposed to survive in the long run (Latham, 2000). During 2001/2002, the problems met by eMarkets became more obvious. Accenture (2001) reported that only 10 per cent of surveyed eMarkets had converted registered customers to actual, repeat traders. McKinsey (2002a) estimated that over 70 percent of launched public eMarkets had either ceased to exist or had modified their business model.

Although there was a dramatic decline in the number of eMarkets, organisations have continued to remain optimistic that B2B electronic commerce initiatives will continue to grow. One of the reasons for continued growth is the value that organisations obtain through participating in eMarkets. Such optimism is confirmed with the rapid rise of consortia and private eMarkets. McKinsey (2002b) found that 15% of Fortune 2000 companies have set up private eMarkets, with this number rising over the next few years.

This paper looks at the development of eMarkets in the Asia Pacific Region, which is seen as an area for rapid future growth (IDC, 2001a). B2B technology is also viewed as a new competitive weapon for Asian firms, helping them to overcome issues caused by their geographic distance, time zone and language differences from key economies such as US and Europe (Michael and Sutherland, 2001).

Nonetheless, the uptake of B2B technology by Asian organisations has been rather slow, especially in comparison with companies from more developed countries (Michael and Sutherland, 2001). The key objective of this paper is to evaluate the Key Success Factors (KSF's), which should be focused upon by eMarket-makers for the effective development of services in the Asia Pacific region.

The paper uses results from field interviews with senior management from airlines and aviation service providers in Asia, to highlight major success factors for the effective development of eMarkets in Asia.

2. The eMarket Concept

An eMarket can be defined as an inter-organisational information system (Choudhury, Hartzel and Konsynski, 1998) through which multiple buyers and sellers interact to accomplish one or more of the following market-making activities:

1) *Identification* – of potential trading partners, i.e. to buy from and/or sell to.

2) *Selection* – of a specific partner, based upon the individual company's trading criteria (price, delivery, service levels, etc).

3) *Execution* – of a transaction, i.e. the completion of an on-line trade.

4) *Monitoring/Management* – of post-sales processes, such as delivery status tracking, goods receipt, payment and warranty.

This basic Commerce platform acts as the foundation for an eMarket to offer an additional range of value added services (Sculley and Woods, 2001). B2B eMarkets commonly share the following key features for on-line commerce: centralized and neutral market space; standardized contracts, documents and product/service information; pre-qualification and regulation of users (members); provision of pricing, price history and market average information; transparency and confidentiality; clearing and settlement; logistics management; and integrated supply chain management. The value added services include: payment, security, logistics, sourcing, data mining, community, financing and various personalization services. These services allow eMarkets to differentiate themselves relative to their competitors (Raisch, 2001; Eng 2004).

2.1 Business Models

As B2B eMarkets proliferated at an astounding rate, they tried to position themselves to present a strong value proposition and differentiate their services in the crowded marketplace (McKinsey, 2002a). Consequently, a variety of business models developed to cater to the varying needs of participants. It is difficult to provide a concise classification for the variety of eMarket business models that have been developed, however for this research they are classified into three basic types, as follows:

2.2 Public eMarkets (many-to-many):

These are independently owned and developed on-line marketplaces generally funded by venture capitalists or owned by a private, independent party. They are usually positioned as providing a neutral platform for electronic trading and provide a forum for listing products and services (along with their related features and pricing) within a transparent market. Public eMarkets help reduce the costs of gathering information by quickly identifying potential trading partners and market pricing. Examples include partbase.com (airline industry) theoilsite.com (energy industry) and marketboomer.com (hospitality).

2.3 Consortia eMarkets (few-to-many):

Consortia eMarkets are owned and jointly developed by two or more large industry players, or sometimes a grouping of major buyers or suppliers, or a hybrid of both. Functionality focuses more on supply chain processes, forecasting and inventory planning. Industry-sponsored marketplaces often address industry standards and build community-related services. Examples include aeroxchange (www.aeroschange.com: airline industry), covisint (www.covisint.com: car industry) and quadrem (www.quadrem.com: mining and construction industry).

2.4 Private eMarkets (one-to-many):

Privately owned eMarkets are used to manage and optimize a company's own supply chain process with key trading partners. As with consortia, the functionality can address any value chain process and is ultimately tailored to the needs of the individual company. Private exchanges often require business partners to adapt or integrate with the owner's technical platform and/or data management standards in order to participate. Examples include Boeing (myboeingfleet.com) and Cisco (cisco.com).

This paper focuses on Public and Consortia eMarkets, as these are operated as commercial businesses in the open market environment and are affected by market dynamics and business strategy issues. Private eMarkets are a growth area (McKinsey, 2002b), however they operate as private and closed ventures and not
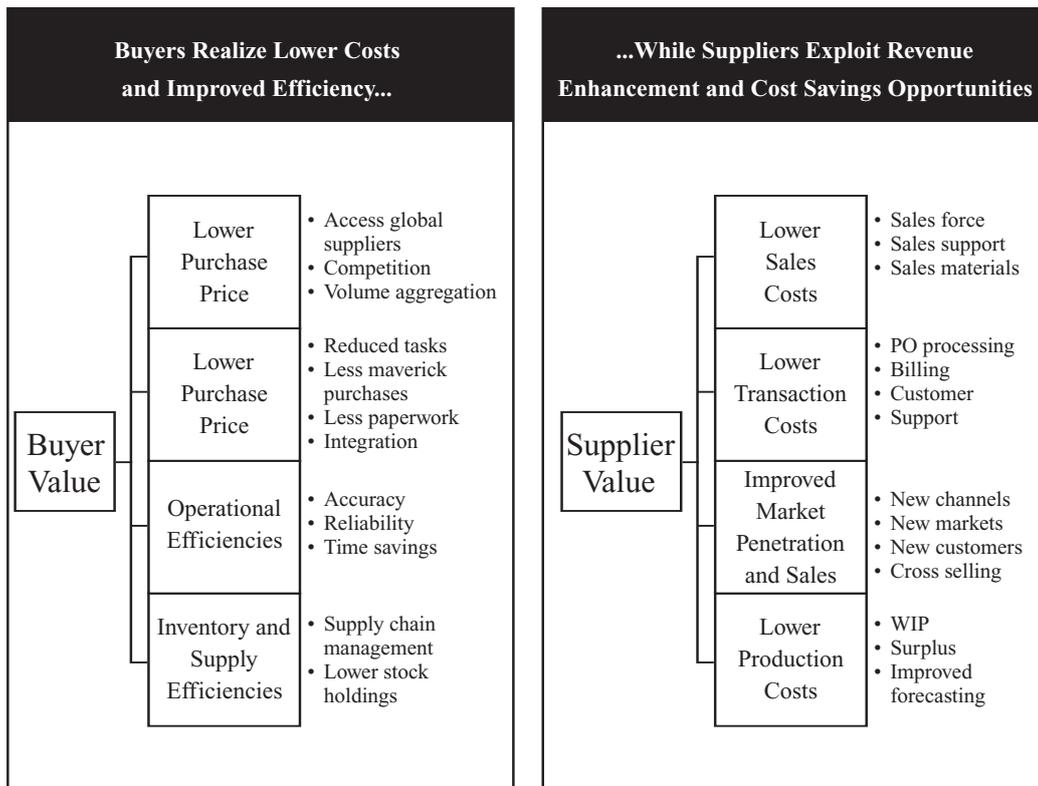
Buyers Realize Lower Costs and Improved Efficiency...			**...While Suppliers Exploit Revenue Enhancement and Cost Savings Opportunities**		
Buyer Value	Lower Purchase Price	• Access global suppliers • Competition • Volume aggregation	Supplier Value	Lower Sales Costs	• Sales force • Sales support • Sales materials
	Lower Purchase Price	• Reduced tasks • Less maverick purchases • Less paperwork • Integration		Lower Transaction Costs	• PO processing • Billing • Customer • Support
	Operational Efficiencies	• Accuracy • Reliability • Time savings		Improved Market Penetration and Sales	• New channels • New markets • New customers • Cross selling
	Inventory and Supply Efficiencies	• Supply chain management • Lower stock holdings		Lower Production Costs	• WIP • Surplus • Improved forecasting

Figure 1: A 'win-win' solution for buyers and sellers

necessarily measured in terms of commercial success such as profit. Participants in private eMarkets may be made to participate by the operator of the marketplace. Therefore, key success factors in private eMarkets would be different to those in public and consortia eMarkets.

2.5 Benefits of eMarkets

eMarkets can potentially benefit individual participants and industries through adding value by increasing market efficiency, increasing supply chain efficiency and new value creation (Brunn, Jensen and Skovgaard, 2002). Figure 1 shows business benefits of participating in eMarkets.

Buyer-side benefits: buyers can use eMarkets to reduce their direct and indirect supply chain costs by leveraging their global scale and focusing spend on preferred suppliers whilst also utilizing advanced search facilities to find and qualify new suppliers. Additionally, buyers can take advantage of dynamic eMarket tools such as auctions and bid-quotes for more efficient sourcing and spot purchasing (Brunn, et al., 2002; Raisch, 2001).

Seller-side benefits: sellers can significantly lower their sales channel costs and gain access to new customers on a global basis without the need to set up an international office infrastructure. B2B eMarkets can extend this reach even further by creating close collaboration between trading partners in a secure environment (Brunn et al., 2002; Raisch, 2001).

3. B2B in Asia

The Asian region has seen strong Internet growth, from a base of 64 million in 2000, Asia Pacific web users (ex Japan) will exceed 240 million by 2005 (IDC, 2001b). About half of the region's Internet population will be in today's nascent online markets (China, India, Malaysia, Thailand, Indonesia and the Philippines). The more mature markets such as Hong Kong, Taiwan and Singapore are already well developed. Therefore the region's Internet growth will largely be driven by the future development of emerging markets (Michael and Sutherland, 2002).

Intra-regional Internet differences are significant and

based on variations in government policy, online payment systems and fulfillment infrastructure (Trappey and Trappey, 2001). These obstacles need to be overcome by governments, businesses and service providers in their respective countries for the expected e-business growth and the resulting economic benefits to be fully realized. B2B eMarket usage in Asia is forecast to grow from US$9.2 billion in 1999 to US$995.8 billion in 2004 (GartnerGroup, 2000b). This tremendous growth rate highlights the future importance of B2B for Asian corporations.

Asian companies are being driven by the promises of e-business derived costs savings and efficiency improvements, and also by the new market threats provided by an e-business environment allowing for more open trading and dynamic competition (Eid et al., 2002). However, the business process changes required are presenting a challenge to many Asian corporations due to their rather old-fashioned organisational structures and management styles (Michael and Sutherland, 2002).

4. Key Success Factors

Literature on eMarkets identified the following seven factors as critical to the development of e-Markets (Raisch, 2001; Brunn et al., 2002; Standing and Stockdale, 2001; Scully and Woods, 2001; Kandampully 2003): critical mass; liquidity; independence/neutrality; security/credibility/trust; ease of use/reliability; value added services and relationships.

4.1 Critical mass

Critical mass primarily relates to the number of customers and/or the number of transactions required to ensure it is effective in both operational and financial terms (Standing and Stockdale, 2001; Raisch, 2001). An eMarket requires a certain number of users and usage to make it an effective forum for trading, i.e. too few sellers will not be a viable proposition for buyers and vice versa. Therefore, an eMarket needs to *simultaneously* attract a large number of both buyers and sellers (Lennstrand, Frey and Johansen, 2001). The eMarket requires sufficient customer numbers to drive transaction volumes for the business to cover costs and make a profit. An additional advantage of achieving critical mass is that this can provide very high barriers to entry for other potential exchange competitors, since inertia prevents members from shifting for one exchange to another (Sculley and Woods, 2001).

4.2 Liquidity

Liquidity is defined as "the ability of a business to meet its obligations as they come due; the more liquid a business is, the better able it is to meet short-term financial obligations" (The Lectric Law Library, 2002). Liquidity is a vitally important issue for the majority of eMarkets as they are in the start-up phase of their market development (Sculley and Woods, 2001). Liquidity is primarily a function of costs and income. Costs include establishment and communication expenses to ensure the eMarket is 'heard' above the competition (Sulley and Woods, 2001). It has been estimated that a typical B2B exchange will cost US$25-30 million in this set-up and start-up phase (Sculley and Woods, 2001). Income for eMarkets can be derived from: transaction related fees; membership/licensing fees; sales of industry information; value-add service fees; advertising and marketing; and sales of accumulated marketing data (Standing and Stockdale, 2001). As eMarkets are primarily trading environments their income is usually linked directly to the volume of usage of the marketplace. Therefore, the critical mass of users and their usage is of key importance to liquidity.

4.3 Independence/Neutrality

Independence /neutrality means that the eMarket-maker operates a central, unbiased platform not allowing any unfair opportunities or benefits to certain users or user groups (Standing and Stockdale, 2001; Sculley and Woods, 2001). A neutral eMarket is not owned or managed by any major industry players and attracts companies not comfortable in joining a consortia eMarket operated by competitors. The eMarket is also governed by a set of rules and regulations ensuring the maintenance of fairness and equality, especially regulations pertaining to confidential information such as pricing and inventory levels (Raisch, 2001). The requirement for neutrality has now become more blurred with consortiums claiming to be neutral based upon using independent management teams.

4.4 Security/Credibility/Trust

In this new e-business environment many organizations face 'dual uncertainty' by having difficulty in deciding who they can now trust and having confidence in the electronic systems in which the transaction will take place (Ranasignam, 2003). A lack of trust increases uncertainty and reduces the confidence of participants in trading within the eMarket (Pavlou, 2002; Ranasigam, 2003).

The area of trust is both a threat and an opportunity for B2B marketplaces as it could negatively affect user participation, but it can also provide a way for emarkets to add further value to the process. B2B eMarkets need to assure participants that proper mechanisms are in place to ensure transactions are trustworthy, eventually developing into global trust networks (Raisch, 2001). To increase trust eMarkets can police and set up codes of conduct and offer certain "vetting" services e.g., to help organizations find out more about the financial standing of potential trading partners (Raisch, 2001).

4.5 Ease of use and service reliability

eMarkets must be easy to use, reliable, and convenient in order to attract and retain participants but also must be robust and sophisticated to handle highly complex functionality at the back-end (Standing and Stockdale, 2001). The eMarket model relies upon light client-side technology i.e. the buyers and sellers must be able to do business over the site through a standard browser. However, the eMarket must be able to manage the commerce process from negotiation and requisition right through to order fulfillment and payment. This end-to-end support must take place over network application

architecture capable of supporting thousands of users in a highly distributed, fully scaleable Internet environment (Raisch, 2001).

4.6 Value added services

B2B eMarkets need to offer a certain level of "basic functionality" and a certain level of service to be credible with potential customers including search capabilities, bidding/negotiating, and transactions. However, a successful eMarket needs to add further value above and beyond the basic needs of commerce (Raisch, 2001). Value added functionality allows market-makers to differentiate from their competition and develop new revenue streams. Some key areas of value-add are: domain expertise; life cycle support; logistics support; electronic payment and escrow services; community building; integration capabilities; and data mining services (Raisch, 2001).

4.7 Relationships

Organisations operate through their business relationships and networks in which they are embedded. eMarkets are no different and need to develop relationships between buyers, sellers, marketmakers and
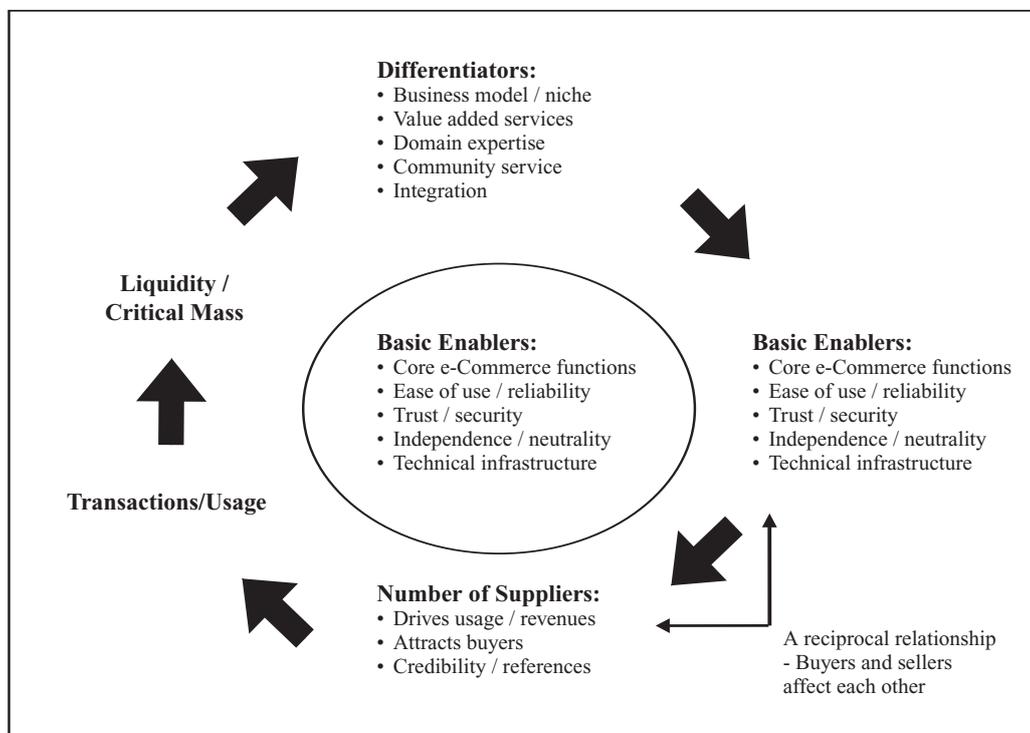

Figure 2: The virtuous Cycle of eMarket Key Success Factors

Table 1: Aircraft Industry eMarkets

Name of eMarket	Type	Status
Aerospace Hardware Exchange	Independent	Closed
Aerospan.com	Independent	Closed
Aerochina.com	Independent	Closed
AeroV	Independent	Closed
Aeroxchange www.aeroxchange.com	Airline Consortia	Operating
Airnewco	Hybrid Consortia	Closed
AviationX.com	Independent	Closed
Avolo	Independent	Closed
Cordiem	Consortia	Closed
Exostar www.exostar.com	Supplier Consortia	Operating
ILS www.ilsmart.com	Independent	Operating
iShopAero	Supplier-led	Bought out by Singapore Technology Aerospace
Myaircraft.com	Independent	Closed
Partsbase www.PartsBase.com	Independent	Operating
Skyfish	Independent	Closed
Tradeair www.tradeair.com	Independent	Operating (10 staff)

technology providers in order to be competitive (Kandampully 2003). Examples such as Covisint partnering with Commerce One and Oracle highlight how eMarkets need strong technology partners if they are to have a competitive advantage (Kandampully 2003).

5. Conceptual Model of the relationship between eMarket Key Success Factors

Figure 2 provides a conceptual framework on how the identified KSF's operate. The model shows KSF's in a "virtuous cycle" relationship, whereby volumes of buyers and sellers drive transactions and revenue and attract each other accordingly. The cycle in turn allows the eMarket to achieve critical mass and then focus on delivering new value-added services to users attracting more users and usage completing the cycle.

The functions of the eMarket are classified into two types:

1) *Basic enablers:* required core commerce functions needed to perform basic trading and are viewed as the "must haves". It is also "a given" that eMarkets are easy to use and reliable. They must also operate with fairness, security and be trustworthy in their dealings such that all information is deemed confidential by participants.

2) *Differentiators:* in addition to the basic enablers, an evolving set of KSF's act as "differentiators" providing additional revenue streams and are the "nice to haves". Differentiators position the eMarket within the competitive landscape and are the basis for buyer and seller decision making.

6. Research Methodology

eMarkets are going through many changes as market-makers and participants determine how they can develop the eMarket concept into a viable business function. Research into eMarket development within the Asian region is particularly limited creating a current lack of understanding regarding Asian customer needs, experiences and perceptions of eMarkets. Therefore, this research is taking initial steps towards developing an understanding of customer perceptions within the Asian Region. The following research question was developed to help guide the research:

How do Asian users (or potential users) perceive Key Success Factors for eMarkets?

As many emarkets are industry focused it was decided to focus on a particular industry: the airline industry. This industry was chosen for a variety of reasons. Firstly, it is

a competitive industry where procurement plays an important strategic role. The airline industry purchases goods and services for a broad range of areas, including engineering parts and services, fuel, uniforms and accessories, food and beverages and computer and entertainment equipment. This paper concentrates on the aircraft parts supply chain, which is highly fragmented and has significant annual sales value in excess of US$5 billion worldwide (Choudhury, Hartzel and Konsynski, 1998).

Secondly, the airline industry was also chosen because they have been using electronic communications and EDI standards to support the procurement of goods and services for over 40 years. A collaboration of major industry groups developed the airline industry's own EDI protocol called SPEC2000, which is used predominantly for procurement transactions between airlines and major suppliers. Today, the overwhelming majority of spares parts orders are placed using SPEC2000 e-commerce standards, with most major airlines and suppliers handling 60 to 90 percent of their orders electronically. SPEC2000 standards are broadly accepted and deeply embedded in the industry's e-procurement systems (SPEC2000, 2001).

In addition to EDI, the industry has also been using electronics markets for many years with Inventory Locator Service (ILS) started in 1979 to allow sellers to list their parts inventory and repair shops to list their capabilities. Another airline industry eMarket called Partsbase was formed in 1996, and from 1998 onwards a large number of emarkets emerged to service this space and are summarized in Table 1.

The airline industry is different from other industries in that there are still government regulations controlling many aspects of their operations. Such regulations, especially in the area of safety and quality, ensure that procurement of aircraft parts is a task which is critical to the success of the organisation and documented to follow government guidelines.

Overall, this industry has experienced a number of different electronic business models for procurement. As the industry is experienced in evaluating many different electronic business models it would understand which success factors would suit their current business requirements. This industry is also extremely competitive with procurement practices an important aspect of overall business performance. Therefore, this industry offers aspects which make it an interesting case on which to conduct the research.

Respondents operate within complex, technical environments suiting a qualitative research approach in gaining rich and in-depth data on user' needs, experiences and perceptions. A qualitative approach was suited for this research as data collection was focused on how decisions on e-marketplaces where made and what were the critical factors used in the decision making process. Telephone interviews where conducted with key informants (users and/or potential users of eMarkets) across various Asian markets. Normally there are only 1 or 2 airlines per country; therefore the population of potential respondents was limited. Telephone interviews were chosen for 2 main reasons:

- They provide a one-to-one and real-time discussion environment, allowing for flexible and detailed data gathering on areas of specific interest.

- They allow broad geographical coverage in a cost effective manner.

Given the small population size of the airline industry it was particularly important that key informants were able to provide meaningful data. Key informants where chosen based on the following criteria:

- Experience: They needed to have used or evaluated different industry eMarkets. Therefore, respondents would have an understanding of the services offered in e-marketplaces.

- Organisational position: All respondents needed to be involved in the decision making process of accepting or rejecting the use of eMarkets. The criteria ensures that the respondent would understand why eMarkets were rejected or accepted and understand the strategic and decision-making issues relating to eMarkets, as opposed to more operational issues such as web-site design, navigation and ease of use. Also respondents would know which factors offered would improve their current procurement practices. Therefore, senior managers in charge of airline purchasing were targeted as respondents.

- Organisational type: The airline industry is made up of organisations that range in size and focus. By gathering data from a number of international and regional airlines and service providers in the Asian region it ensured that the results reflected the wider scope of the airline industry and not just the large international airlines.

- Geographic location: Asia consists of a diverse range of countries for conducting the research. To ensure

that this diversity was captured during the data collection a range of countries was chosen. Countries ranged in size, economic development, Internet infrastructure, politics and culture.

Table 2 provides profile information for each of the key informants. This table highlights that data was collected from a range of countries and with respondents that were managers within their purchasing departments.

A structured protocol was developed to provide consistency during the interviews. Open questions where used to facilitate the free flow of ideas, views and experiences from respondents. Gathering their views and experiences of working within eMarkets is vital in understanding what advantages these eMarkets offer over current practices.

One researcher conducted all interviews based on the interview protocol. To help overcome some language comprehension issues, due to English not being the first language of all respondents, the protocol and background information was provided prior to the telephone interview. Reading the information helped the respondent to prepare their thoughts on the topic area. Each interview lasted for approximately 1.5 hours and was taped. All interviews where then transcribed. To improve the internal consistency of the data analysis, two researchers were involved in developing the initial codes. Themes were originally based on the conceptual development outlined in Figure 2, but others emerged during the data analysis. Once agreement was reached on

the codes, one researcher was involved in coding the interview data.

7. Research Findings – overall trends

7.1 Overall Trends

Seven themes were developed during the data analysis stage. These themes, although related to the KSF's, did not always align exactly to the factors previously given.

Usage and buy-in: Results showed a high degree of interest in eMarkets and a high level of trial in the Asian aviation industry with all interviewees using or had used an eMarket. Several companies had also invested as co-founders of consortium eMarkets. One of the main drivers for joining an eMarket or consortium was a high level of confidence and optimism that this was the direction in which the industry was moving. One consortium investor indicated that *"We thought they had the ability to create standards and shape the future. The best way for us to be a player was to be an investor, a thought leader and be able to influence change"* (Hong Kong A). Much of this early buy-in can be related to the fact that aviation companies had been using EDI for several decades and are well versed on the benefits of electronic trading.

2. Perception of services delivered: However, from this initial positive reception, the overall market perception on eMarkets is now mixed. Whilst some interviewees still maintain confidence, others have been disappointed with the actual services and value delivered. Few interviewees

Table 2: Key Informant Profile

| Interview	Company Profile	Company HQ Location	Position
A	Large International airline	Hong Kong A	GM, Strategic Purchasing
B	Large International airline	Japan A	Director, Purchasing
C	Large International airline	Australia	GM, Purchasing
D	Regional airline	Japan B	Manager, Purchasing
E	MRO service provider	Singapore A	VP, Purchasing
F	Medium International airline	Taiwan	Senior Manager, E-business Projects
G	Medium International airline	China	Manager, Purchasing
H	MRO service provider	Hong Kong B	GM, Purchasing
I	eMarket (Asia Pacific)	Singapore B	Managing Director
J	eMarket (now closed)	US (with Asia operations)	ex-President
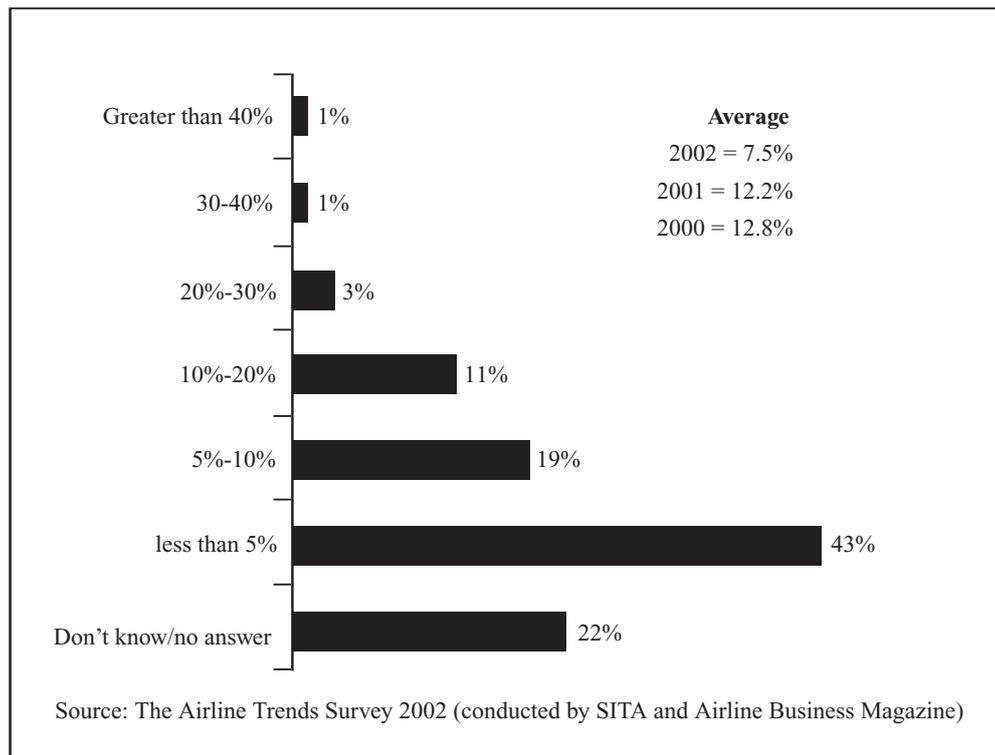
Figure 3: Airline cost savings expected to be made through B2B e-Commerce by 2004

completed substantial real transactions within eMarkets and were disappointed with the functionality delivered. One interviewee indicated that *"eMarkets are still having their functions based upon very traditional models but this really does not fit for our organisation and our way of doing business"* (Hong Kong B).

3. Inventory and data credibility

Whilst Asian airlines (i.e. buyers) showed a good degree of buy-in to the eMarket concept, it appears that the majority of suppliers did not entirely share this enthusiasm. Many eMarket-makers had a significant challenge developing adequate volumes of trading inventory thus, having a negative impact upon the value proposition for buyers. Coupled with this was a major issue with the credibility of data provided by suppliers who did join. One interviewee indicated *"All sorts of data is dumped without verification or auditing and there is all sorts of duplication of inventory … there is a lot of spurious data out there"* (Hong Kong B). Credibility of data pertaining to the quality standards of airline parts is extremely important to airline maintenance.

There also appears to be a problem with "ghost inventory" which occurs when listed inventory is not actually held by the listing supplier and the eMarket is being used as a purely speculative sales device for brokers and middlemen. *"They have serious problems with "phantom inventory" or lack of documentation or the supplier is purely acting as a broker. It's an industry problem"* (US).

4. Comparison to the existing EDI systems

The existing EDI (SPEC2000) platform has set high standards for users within the industry. SPEC2000 is a long standing and proven standard that has many supporters. SPEC 2000 also sets some significant barriers to entry for emarkets, due to the costs and complexity of integration with legacy systems. One quote highlighted they *"do not believe SPEC 2000 will be replaced anytime soon … there are just too many funny old legacy systems out there"* (Hong Kong A) Or *"Even if SPEC 2000 is a high cost due to SITA, it can exist for a while because it is an exclusive communication protocol, therefore its security is much higher than using the public internet"* (Japan A).

Credibility: The initial market hype and the proliferation of eMarket sites caused a degree of confusion within the Asian aviation industry. Many airlines adopted a 'wait and see' approach, where they joined eMarkets on a trial basis but never actually committed to long-term participation. With the bursting of the Internet bubble, the majority of aviation emarkets went out of business. There is still is no clear emergence of leaders or standards causing a general loss of confidence and some pockets of cynicism. *"People said, if you are not part of it you are going to miss out on influencing the direction, I said well what is the direction coz their not doing anything"* (Australia).

Reduced expectations: There now appears to be a reduction in expectations regarding what value eMarkets can provide and the timeframes for delivery of such value. *"It's just been much slower and harder work than we had hoped"* (Hong Kong A). The leveling off in expectations is supported by research which estimates potential savings from e-commerce have slipped from early promises of savings of 20% or more to an average closer to 12% and in the latest survey this has come down to 7%. Figure 3 illustrates the research results.

Regional diversity: Results also showed a marked regional diversity with regards to levels of buy-in and usage. The usage and investment in eMarkets was higher for more economically developed countries, such as Hong Kong, Japan and Singapore. These countries have more developed IT and Internet infrastructures supporting eMarket usage compared to emerging markets, such as China and Indonesia, showing a lower level of usage and commitment. It should also be noted that less developed countries had lower exposure to SPEC2000 and therefore could have *lower EDI-related 'barriers to entry'* (China) for eMarkets.

7.2 Research Findings related to KSF's

Overall, there was little perceived differentiation between the KSF's as it appeared that all features and functions of an eMarket where seen as having importance for an eMarket to be effective and successful. Both the "basic enablers" and many of the "differentiators" where seen as "a given". Of the differentiators discussed, most emphasis was placed on integration capabilities in particular the ability to provide a clear path between the existing EDI platform and the new eMarket platform. It also covered the issue of integration into the customer's internal or back-end systems. Regarding integration of eMarkets to back-end systems, one interviewee indicated *"I think this is the key*

to the success of this whole thing" (Hong Kong B).

Whilst identified KSFs were relevant, results indicated that they where neither the prime reasons for usage nor the prime issues perceived by interviewees. It appears that the identified KSF's focused mainly on the "internal" aspects of an eMarket, whereas many "external" aspects also needed to be considered.

Results showed many environmental factors had a strong bearing on the success of eMarkets. These factors appear to present significant barriers to entry and are summarised as follows:

Industry power and politics: A degree of political power struggle was evident within the industry supply chain, between major buyers and sellers. eMarkets provided both a threat and an opportunity to various parties leading to significant "political maneuvering" by certain key industry players, which hindered the effective development of eMarkets. eMarkets pose a threat to the balance of power in the marketplace that was previously held by large OEM suppliers. Therefore, many suppliers set up their own private eMarkets and consortium sites, competing with public eMarkets. *"The larger vendors expect you to sign up or use their sites. We talked to XXXX (major supplier) about linking to our procurement site. They weren't interested at all and told us to use their site or nothing at all"* (Singapore A).

Existing EDI platform (i.e. SPEC 2000): The airline industry has been using it's own proprietary EDI protocols (SPEC2000) for several decades and this platform is well entrenched, both in terms of usage norms and also in terms of IT systems integration. The existence of this strong incumbent EDI platform has a great impact upon the willingness and the ability of users to adopt the new eMarket alternatives. SPEC 2000 has been in place for over 40 years and some airlines use it for over 90% of their purchases. *"I think ATA is working on and a web front end for SPEC 2000, but this is a big issue. The industry's order volumes are much too high to take data out of one system and key into another one"* (Hong Kong B)

Industry and technology standards: In addition to the SPEC2000, the airline industry is governed by strict quality standards that incorporate documentation required for parts purchasing. Airlines themselves also have their own internal (or country specific) quality standards regarding suppliers and parts. All of these standards provide a challenge for the easy transition to eMarkets, as any changes to processes still need to

comply with existing quality standards requirements. There also appears to be a high level of confusion regarding the standards that are being developed for eMarkets and how these can be integrated with the existing SPEC2000 standards.

IT and Internet infrastructure in the country and company: The ability of users to access the Internet and the reliability of this access has a significant impact on the potential for eMarkets. Variations in IT and Internet infrastructure have great impact upon the eMarket uptake across Asian countries. Some markets (eg China) are still excited about the benefits of using PCs and simple email functionality on the Net. *"Infrastructure is key in developing countries. If you go to countries like Indonesia, the rate at which data is being transferred is so slow that they don't even bother with online services and anyway most buyers down there don't have a PC on their desk"* (Singapore B).

Economic conditions and issues (e.g. 9/11): The aviation industry in Asia (and indeed globally) has been suffering from significant economic problems and cost pressures

in recent years that have greatly impacted the industry's confidence to invest in new technology. In addition, the recent downturn in Internet business optimism has greatly affected this confidence level on B2B. *"At this point in time the market is bad, ever since the dotcom bubble burst – everybody is careful of spending a single dollar on IT. They are very cautious"* (Japan A) or *"we are an associate member of XXXX (Consortium name) but we have not engaged in any activity as yet and the priority of these activities has been shifted due to the effects of 9/11"* (Taiwan).

7.3 Overall model development

Given the importance of environmental factors on eMarket success, a revised KSF relationship model is required to provide a more "holistic view". The initial model focused primarily on the "internal" functions and features of the eMarket and took some account of users and usage. However, the research highlights the need to incorporate the "external" environmental factors in more detail. A revised model is illustrated in Figure 4 categorising the KSF's into four distinct bands.
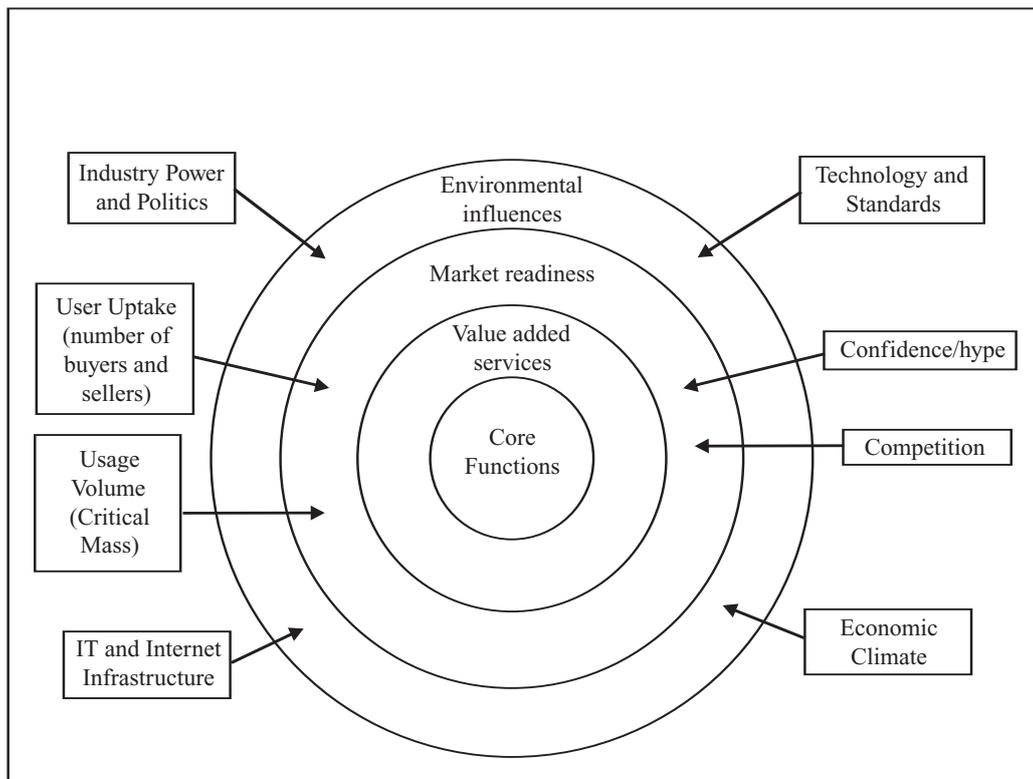

Figure 4: Revised KSF Model – an holistic view

Core functions: these are the basic e-commerce capabilities described as the "basic enablers" in the initial conceptual model. These include the ability to search, select, transact and manage. In addition they cover the need for an eMarket to provide a secure, reliable and easy to use platform for electronic trading.

Value added services: these are the additional features and functionality that help an eMarket position itself relative to the competition, deliver additional value above and beyond the core capabilities and also drive additional revenue streams. These include the development of community services and select consortium groupings, as well as the ability to provide innovative functionality such as supply chain management and inventory management.

Market readiness: relates to the prevailing conditions in the industry or sector being targeted by the eMarket. Confidence levels, as well as the level of hype or buzz, regarding the introduction of new technology need to be considered. Market readiness also relates specifically to user uptake and usage of eMarkets.

Environmental influences: are the external forces in the environment that influence the market and the level of market readiness. These environmental factors have been studied in great depth in classic marketing literature and include politics, technology, economics and infrastructure.

Overall, the marketing strategy used by the eMarket-maker should consider each of these aspects when developing their offering. This research has shown that external environmental factors play a large role in the viability of new ventures.

8. Implications for business

Although the above model was developed based on the case of the airline industry there are many characteristics that this industry has in common with other industries. For example, the use of an existing well-utilised EDI platform and the requirement for quality control of direct inputs is also prevalent in other industries such as: automotive; pharmaceutical; finance; distribution/ wharehousing; government services and many more. EDI is used by 80% of the Fortune 500 firms with it commonly being used for procurement by many businesses. Internet infrastructural differences between different countries will affect all industry electronic procurement practices, not just the airline industry. Although economic conditions such as 9/11 and SARS

affected the airline industry greater than other industries other environmental issues will conceivebly affect other industries. Therefore, the results might be generalised to other industries where similar characteristics are prevalent.

The key implications for business are as follows:

B2B eMarkets need to develop business strategies that incorporate the whole environment.

The bulk of current literature on B2B eMarkets focuses mainly on features, technology and functionality, which are essentially under the control of the eMarket provider. However, the research highlights that many *external* factors in the environment have a significant impact upon eMarket success. Therefore it is critical that B2B eMarkets develop business strategies that reflect the trends, opportunities and threats in the external environment – such as social, cultural, political and economic factors.

In this particular case, it is clear that technology and economic issues play a very important role in the environment. But such situations will arise in many different industries and therefore, eMarkets must adopt strategies that adequately account for these conditions. A complete environmental analysis is therefore vital prior to the development of strategy. Environmental factors can also be incorporated into the "performance dashboard" of the business (Rayport and Jaworski, 2001) so that managers are continually updated on opportunities and challenges *as they evolve.*

In particular, the regional diversity in IT and Internet infrastructure presents a challenge to eMarkets developing business in the Asia region. However, it should be noted that the region's main areas of Internet growth are forecast to be the less developed markets. The research also highlights that these markets have much *lower EDI related barriers* to entry and may therefore present the biggest opportunity for future eMarket development.

eMarkets need to position effectively in relation to existing EDI platforms.

A strong existing EDI platform can have a 'double-edged sword' effect on the development of eMarkets within an industry. It is very clear from the research that many users are confused regarding the pros and cons of adopting the new technology, especially if many industry players believe the existing EDI platform works very well. It seems that eMarkets targeting the Asian aviation

sector did not adequately recognize the significance of SPEC2000 and may have assumed that the new eMarkets would simply replace the existing platform. The last 3 years have shown this not to be the case and eMarkets are now adapting their product to co-exist with SPEC2000.

It is critical for eMarkets to effectively position themselves in the industry with regards to the existing EDI platform and to communicate clearly, to all industry stakeholders, the benefits, costs and related issues. The positioning of eMarkets against the well-established EDI platform will be a challenge for eMarket-makers as EDI has many supporters. It may therefore be advantageous for eMarkets to position themselves as a "complementary" technology to EDI or offer services such as integrating third parties that existing EDI may not offer. The emphasis can then be placed on assuring the industry that the migration to eMarket usage will not disrupt existing processes and will provide clear additional benefits for all parties involved. eMarkets need to integrate with the existing EDI platforms to ensure that they do not compete directly. Kandampully (2003) highlighted integration between EDI and eMarkets in the case of Covisint.

eMarkets need to work on changing perceptions within the industry and reducing levels of confusion and cynicism amongst potential users.

In addition to the general industry confusion regarding eMarkets, there appears to be a relatively high level of cynicism amongst users. This is perhaps understandable given the roller-coaster ride that Internet fortunes have taken in the last 5 years. It is now important that the remaining eMarkets focus efforts on re-building overall confidence levels within the industry to improve the industry's levels of "market readiness" as described in the Revised KSF Model (Figure 4).

9. Future Research

These findings can be further examined and tested through research of other, similar industries in the Asia region, such as the automotive industry which also has a well-established EDI platform. Additionally, the research base could be extended to cover companies in other continents, to measure the impact of identified environmental factors on the development of eMarkets in the aviation industry.

The conceptual models developed in this paper appear to have merit, based upon the research findings. However, further work is needed to develop more conclusive

models on the relationships between the internal and external KSF's for eMarkets, which have been identified. In particular it would be interesting to explore the impacts of changes in "environmental factors" on the "market readiness" factors identified for eMarkets. This research would be helpful to support management decision-making and strategy development in this field.

10. Conclusion

Purchasing managers are still uncertain about the use of eMarkets in their overall procurement strategies. This research indicated that eMarkets do have a long term role, but they need to be robust enough to weather external environmental factors as well as differentiate themselves from competitors. Previously discussed differentiators are perceived by users as standard, forcing e-marketmakers to provide customer service that differentiates itself from current EDI system. One quote which summed up the attitude of the managers was *"in simple terms I was being asked to change placing orders from a high speed secure network to using a low speed insecure network – and not much else changed"* (Japan A). Marketmakers need to consider their marketing strategies relative to both their external and internal environments.

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Biographies

Mark Neill recently completed a Masters of Marketing at the University of Western Australia Business School. He has extensive industry experience within the sales and marketing areas of the aviation industry. He has worked in the UK and the Asia Pacific Region, managing sales and marketing functions for regional subsidiaries.

Sharon Purchase is a lecturer at the University of Western Australia Business School. Her research focus is on business marketing within the areas of e-business and business relationships. Her research has been published in Australasian Marketing Journal, International Marketing Review, Industrial Marketing Management and the Journal of Business to Business Marketing, and others.

Correspondence Addresses

Mark Neill, University of Western Australia, 35 Stirling Highway , Crawley, Perth, Email: mark.neill@bigpond.com; Sharon Purchase*, University of Western Australia, 35 Stirling Highway, Crawley, Perth, E-mail: spurchas@ecel.uwa.edu.au

*contact author

Segmenting Markets by Bagged Clustering

Sara Dolnicar & Friedrich Leisch

Abstract

We introduce bagged clustering as a new approach in the field of post hoc market segmentation research and illustrate the managerial advantages over both hierarchical and partitioning algorithms, especially with large binary data sets. The most important improvements are enhanced stability and interpretability of segments based on binary data. One of the main goals of the procedure is to complement more traditional techniques as an exploratory segment analysis tool. The merits of the approach are illustrated using a tourism marketing application.

Keywords: Market segmentation, Cluster analysis, Bagged clustering, Bootstrap, Tourism marketing

1. Introduction

Since the introduction of market segmentation in the late 1950s, the number of techniques for segmentation has grown enormously. Both *a priori* and *response-based* approaches are widely used among researchers and practitioners (Myers and Tauber, 1977). In the case of *a priori* segmentation, groups are formed according to a criterion that is expected to cause heterogeneity of response among the customers. *Response-based* approaches, on the other hand, form groups by identifying patterns of responses, given by the customers. Other terms used to describe the *response-based* approach include *a posteriori* (Mazanec, 2000), *data-driven* (Dolnicar, 2002), and *post hoc* (Wedel and Kamakura, 2001). Numerous publications list and evaluate these approaches in a comprehensive manner (Arabie et al., 1996; Dickinson, 1990; Punj and Stewart, 1983; Baumann, 2000).

If it is known from either experience or prior research which variable (e.g., age, income) can be used to split customers into homogeneous subgroups in terms of customer response, the use of the *a priori* segmentation approach is favored: it is simple to use and appropriate for the problem at hand. If, however, this is not the case, management needs to explore in which way homogeneous response subgroups can best be constructed from the data at hand.

In such multivariate cases, the grouping techniques available are subject to several decisions on the part of the researcher which to a great extent influence the result:

- Which variables should be included in the searching procedure?

- Which grouping technique should be used?

- Which similarity measure is appropriate?

- What number of groups or clusters should be chosen for the final solution?

- How can it be assured that the grouping chosen is not a purely random solution?

Besides these issues, there are other segmentation criteria to be considered from the marketing point of view, which focus on applicability and usefulness to practitioners. Kotler (1988) states that operationally useful segments must be: (1) mutually exclusive, (2) exhaustive, (3) measurable, all of which are assumed in the segmentation procedure, and that additionally they must be (4) accessible, (5) substantial and, most important, (6) they should respond in a different manner to marketing strategy, that is, to marketing mix variables controlled by the marketer.

A further crucial consideration concerns the appropriateness of methods for different sizes and

dimensions of data. Hierarchical approaches become difficult with increasing sample size, see Murtagh (2002) for pointers to greedy hierarchical clustering algorithms for large data sets. Many empirical survey sets of data preclude some types of clustering techniques due to data size, which can be too large for traditional hierarchical approaches and too small for parametric approaches. The purpose of this article is to demonstrate the managerial usefulness and advantages of the bagged clustering approach for market segmentation research and to compare the procedure with classical partitioning algorithms that are widely used.

2. Motivation for the Use of Bagged Clustering

The central idea of introducing bagged clustering as an exploratory tool in the field of market segmentation is to overcome as many of the following typical difficulties encountered in segmentation as possible by combining the strengths of both the hierarchical and the partitioning approaches:

■ Partitioning clustering uncovers structure in data. But there is a danger that marketing managers could arrive at any single random solution and over-interpret the value of this information. Improved insight into data structure makes segmentation more valid and thus provides a stronger base for long-term strategic management decisions.

■ Many popular partitioning methods, such as *K*-means, tend to identify equally-sized clusters (Dimitriadou et al., 2002). Such patterns rarely exist in empirical data. If the data consists of unequally sized groupings, the grouping technique should be revealing this. Otherwise the managerial interpretation, once again, is inadequate and represents only weak decision support.

■ Most partitioning clustering algorithms are strongly dependent on the starting solution. Consequently the danger of selecting a random solution and building strategy on weak data analysis is high.

■ The outcome of any cluster analysis depends on the data sample used, and yet the outcome is then generalized to the total population when the target segments are chosen. Managerial information could be improved if variation in the sample could be accounted for, thus making the segmentation solution more realistic.

■ The number of clusters chosen clearly influences the segmentation solution dramatically. Ratios and indexes suggested in literature to decide on the optimal number of clusters usually do not lead to unambiguous recommendations (Dimitriadou et al., 2002). Managerial interpretation of different solutions is often required, a procedure eased and systematized by the bagged clustering approach.

All the problems described above also apply to binary data (for detailed simulation studies see Dolnicar et al., 1998a; 1998c; Leisch, 1998). The bagged clustering approach overcomes most of the difficulties listed above, which will be demonstrated using a tourism survey data set after a brief explanation of the bagged clustering algorithm.

3. The Bagged Clustering Algorithm

Most of the currently popular clustering techniques fall into one of the following two major categories: partitioning methods like *K*-means or its online variant, learning vector quantization (LVQ – this standard clustering technique has several names in the literature, e.g., in SPSS it is called "*K*-means with running means"), or hierarchical methods resulting in a dendrogram (e.g., Kaufman and Rousseeuw, 1990; Ripley, 1996). Bagged clustering (Leisch, 1998; 1999) is a combination of both, providing a new way to assess and enhance the stability of a partitioning method using hierarchical clustering. The full procedure consists of five steps. Given a data set X_N of size N, the algorithm works as follows:

1. Construct B bootstrap training samples $X^1_N,...,X^B_N$ of size N by drawing with replacement from the original sample X_N.

2. Run the base cluster method (*K*-means, learning vector quantization, ...) on each set, resulting in $B \times K$ centers $c_{11}, c_{12},...,c_{1K}, c_{21},...,c_{BK}$ where K is the number of centers used in the base method and c^{ij} is the j-th center found using X^i_N.

3. Combine all centers into a new data set $C^B = C^B(K) = \{c_{11},...,c_{BK}\}$.

4. Run a hierarchical cluster algorithm on C^B, resulting in the usual dendrogram.

5. Let $c(x)C^B$ denote the center closest to point *x*. A partition of the original data can now be obtained by cutting the dendrogram at a certain level, resulting in a partition $C^B_1,...,C^B_m$, $1 \leq m \leq BK$, of set C^B. Each point xX_N is now assigned to the cluster containing $c(x)$.

The algorithm has been shown to compare favorably with several standard clustering methods on binary and metric benchmark data sets (Leisch, 1998; 1999).
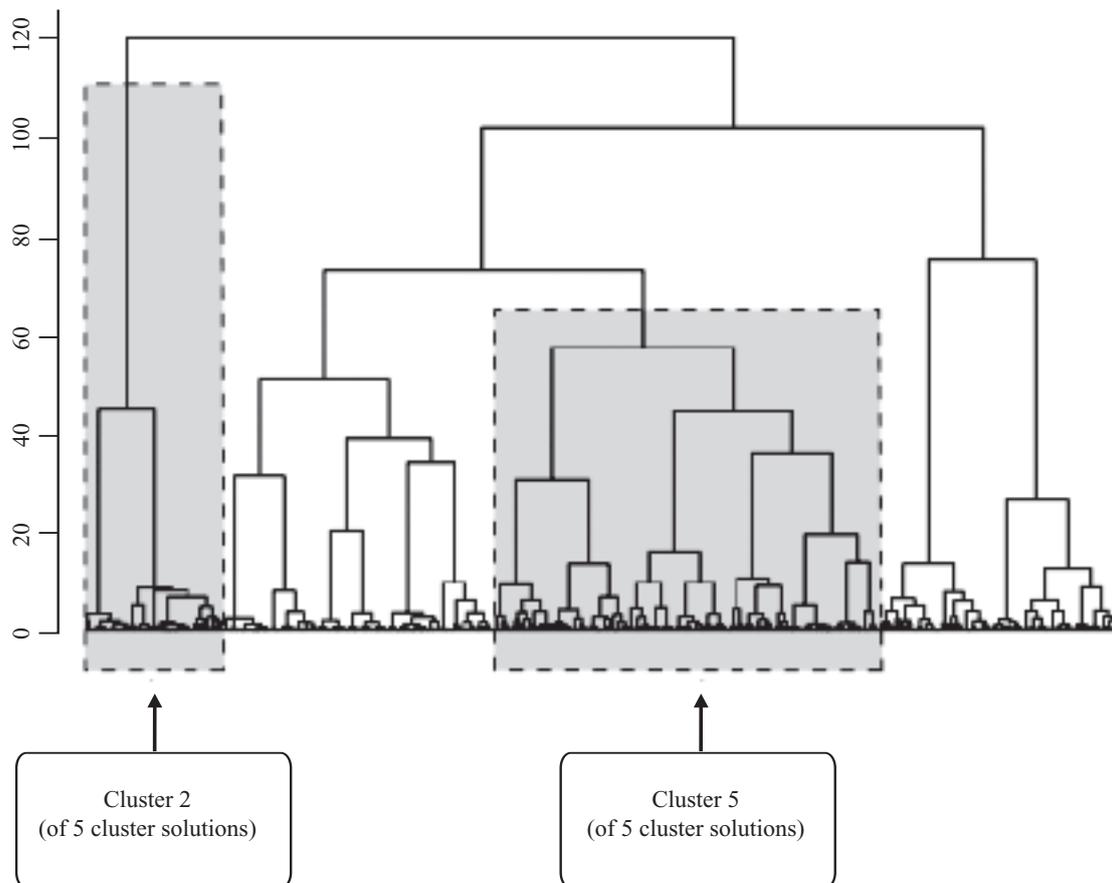
Figure 1: Bagged clustering dendrogram
Note: For the two clusters highlighted here see the associated boxplots in Figure 3

4. Application: Austrian National Guest Survey

4.1 Segmentation base and background variables

Survey data from the Austrian National Guest Survey of summer vacation tourists, collected during the summer season of 1997, are used to illustrate the bagged clustering procedure. The sample consists of 5,365 tourists. The variables chosen for segmentation purposes are summer vacation activities as stated by the respondents and the answer format is binary (indicating, for instance, whether or not the tourist engaged in swimming, or cycling, or hiking).

In addition to these variables used for segmentation, a number of demographic, socioeconomic, psychographic, attitudinal and behavioral variables are available in the extensive guest survey data set (for instance, the age of the tourists, the duration of stay, their intention to revisit Austria).

4.2 Bagged clustering parameters

For this data set, we used *K*-means and LVQ with *K*=20 centers as base methods. The respective base methods were applied to B=50 bootstrap samples, resulting in a total of 1000 centers, which were then hierarchically clustered using Euclidean distance and Ward's agglomerative linkage method (e.g., Kaufman and Rousseeuw, 1990). These parameters were chosen because they performed best in previous studies with simulated artificial data that had similar characteristics to the present data set (Dolnicar et al., 1998b; Leisch, 1998).

All computations and graphics were performed using the R software package for statistical computing (R Development Core Team, 2003). R functions for bagged clustering are part of the e1071 extension package for R and freely available from http://cran.R-project.org.
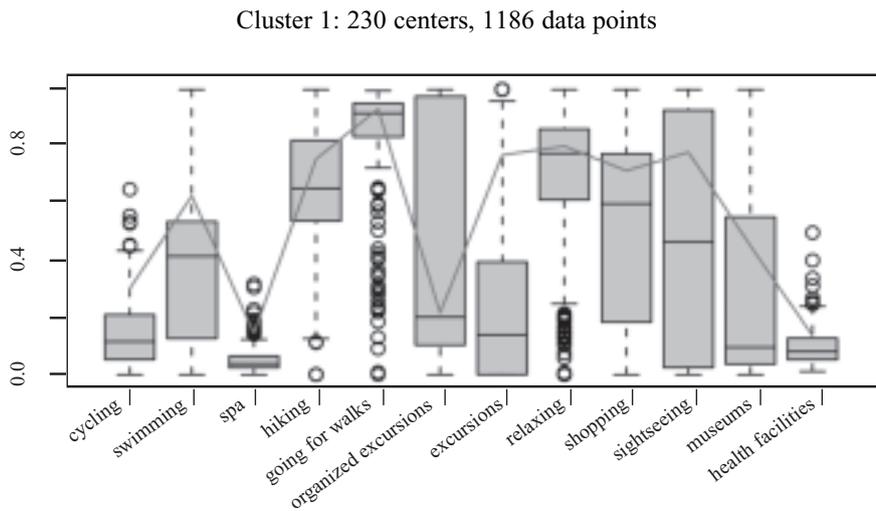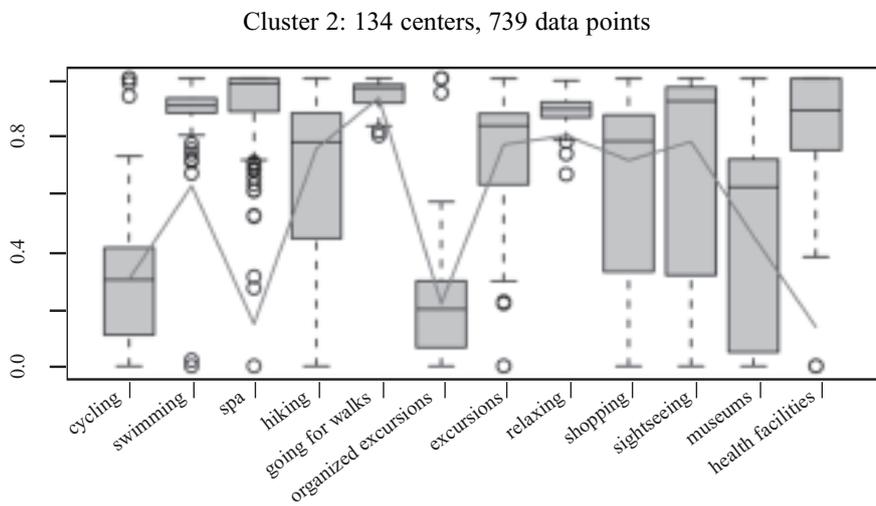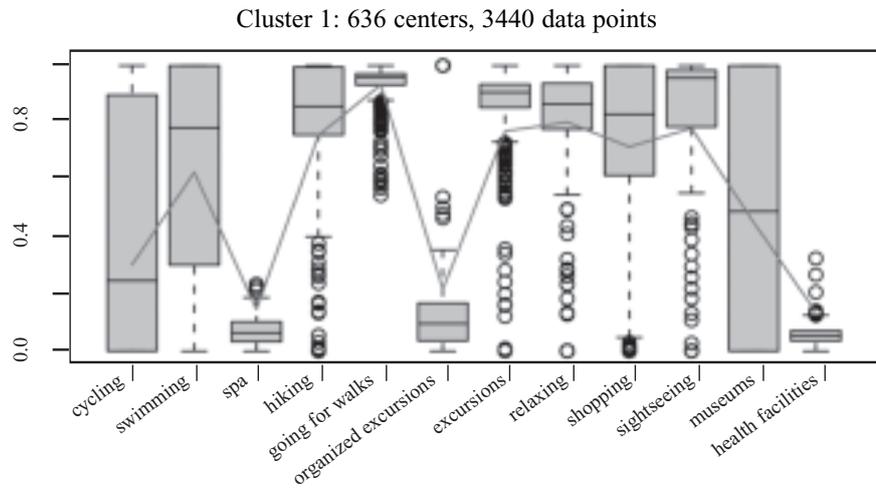
Cluster 1: 636 centers, 3440 data points

Cluster 2: 134 centers, 739 data points

Cluster 1: 230 centers, 1186 data points

Figure 2: Box Plots of the three-cluster solution

4.3 Interpretation and visualization

In the following, we analyze two bagged clustering partitions of the data set. These were obtained by cutting the dendrogram in Figure 1 into three and five branches, respectively. Each branch corresponds to a set of centers which are vectors taking values of [0,1]d (where d denotes the number of variables).

We display these sets of centers in Figure 2 using a standard box-whisker plot. Every box represents one segment's answers to the respective item. The horizontal lines in the middle of every box represent the median value, the box itself ranges from the first to the third quantile, and the whiskers and circles outside the box represent values outside the interquartile range. Finally, we add the overall mean of the total sample as a horizontal polyline to the plot.

For interpretation purposes three pieces of information within the box plots are of interest: first, the deviation of a segment's answers from the overall sample mean for each item; second, the distribution of within-segment answers as indicated by the height of the box (the lower the height of a box, the more homogeneous, over repeated runs of the base method, are the answers of the segment concerning this variable); and, finally, the differences between the segments' answers. The stronger the deviations of item responses between segments, the more distinct the segments are.

A big improvement bagged clustering can offer to marketing managers is that it provides bootstrap estimates of cluster center variance, which is indispensable if segments are to be described properly. For instance, 78% of all tourists surveyed like to go sightseeing. Segment 3 in Figure 2, however, exhibits a mean value of about 50%. This suggests this segment is much less interested in sightseeing than the norm. But this inference could be misleading for management as heterogeneity within the segment is not accounted for and actually is maximal (the box almost goes from 0 to 1), thus making "sightseeing" as a tourist activity a very bad descriptor for such a segment.

4.3.1 The three-cluster solution

The three clusters emerging from bagged clustering differ considerably in size. Cluster 1 represents 636 centers (3,440 data points), cluster 2 represents 134 centers (739 data points) and cluster 3 represents 230 centers (1,186 data points). The segments can be interpreted in the following manner (Figure 2 provides the basis for the following descriptions):

Segment 1—active individual tourists (64% of the total sample): This group is the largest segment. The main marker variables are the following activity items: spa, hiking, organized excursions, excursions, sightseeing, and health facilities. These tourists are thus best described as travelers who are diversely active. They are highly interested in sightseeing, excursions, going for walks and hiking. However, in terms of the other activities, this segment is heterogeneous. This suggests that it might be worthwhile to examine further splits of this segment.

Segment 2—health-oriented holidaymakers (14%): This (small) segment of visitors cares about health. Central activities include swimming, going to a spa, relaxing and making use of health facilities.

Segment 3—just hangin' arounds (22%): This segment takes it easy. They show little interest in any kind of activity. Their main focus is on relaxation.

Although the activity information is the only information used for segment identification in this case study, it is important to learn more about the segments that emerged. For this purpose the background variables are analyzed in detail. The items on the tourists' information-seeking behavior is important for accessing the segments chosen in the course of strategic segmentation planning. Table 1 includes all segments' means and frequencies as well as the respective significance values for the null hypothesis of no difference between the clusters. Metric and ordered categorical variables were tested using the Kruskal-Wallis rank sum test, and for the nominal variable "information source" we used the chi-square test.

The age information fits in very well with the characterization of Segment 1, active individual tourists, indicating that the average age is lower than it is in the remaining groups.

Health-oriented holidaymakers not only have the highest disposable income, additionally they spend the highest amount of money per day and per person. Also, they spend more time vacationing in Austria than the other segments. Obviously they know Austria very well, as 86% have been on vacation in this country on at least two previous occasions. They have the highest intention to revisit Austria and the lowest share of members not intending to repeat this kind of holiday.

Vacation tourists in the third segment, *just hangin' arounds,* are less experienced in visiting Austria and also feel less positive about revisiting the country. This segment is older and has the smallest disposable income.

They spend average amounts of money on the vacation, and the vacation is of briefer duration than those taken by the two segments' members.

With regard to information sources (and consequently the channels through which market communication can take place) Segment 1 is found to make use of brochures and to rely on the reports and recommendations of friends and relatives. Segment 2 has the highest proportion of members who do not need any information at all. Friends and relatives have strong influence. The vacation choice of Segment 3 members is based on three major sources of information: brochures, friends and relatives, and travel agents are consulted very often.
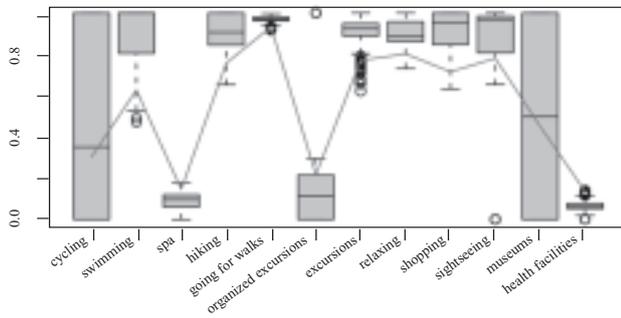
4.3.2 The five-cluster solution

If there is something to criticize about the three-cluster solution it most probably is that a large undifferentiated cluster of active tourists is identified. For target marketing action it seems necessary to go into more detail and find more distinct subgroups of Segment 1. Also Segment 3 lacks a clear profile, and it would be interesting to see how this group might split up if further segmentation were pursued.

Table 1:
Description of background variables for the three-cluster bagged clustering solution

|	*segment 1*	*segment 2*	*segment 3*	*p-value*
Age	47	53	54	2e-16
Daily expenditure per person (Euro)	51	68	54	2e-16
Monthly disposable income (Euro)	2300	2400	2100	4e-08
Length of stay (days)	10	10	7	5e-15
Intention to revisit Austria:				0.003
definitely	33	36	28	
probably	36	33	37	
probably not	17	20	16	
definitely not	15	11	18	
Intention to recommend Austria:				0.114
definitely (1)	69	72	69	
2	25	22	23	
3	5	5	6	
4	1	0	1	
5	0	0	0	
definitely not (6)	0	0	0	
Prior vacations in Austria:				2e-10
never	12	8	17	
once	10	6	10	
twice or more	78	86	73	
Sources of information used:				5e-10
no information needed	34	35	30	
brochures	20	17	18	
travel agent	10	7	17	
media ads	4	5	5	
friends and relatives	23	27	22	
local tourism bureau	7	7	6	
Internet	3	3	3	

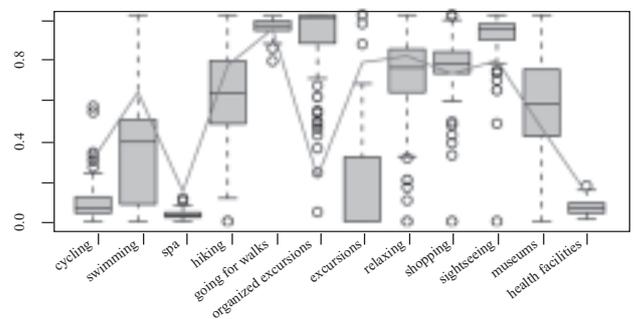Cluster 1: 264 centers, 1293 data points

Cluster 2: 134 centers, 739 data points
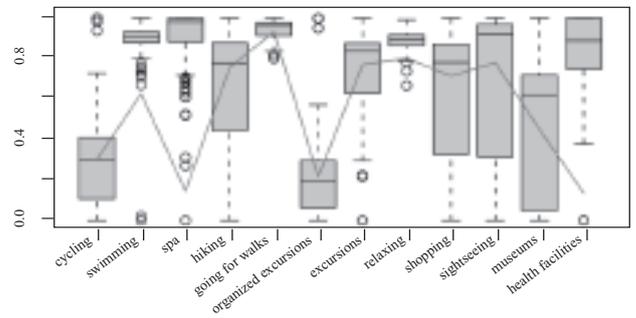
Cluster 3: 123 centers, 475 data points
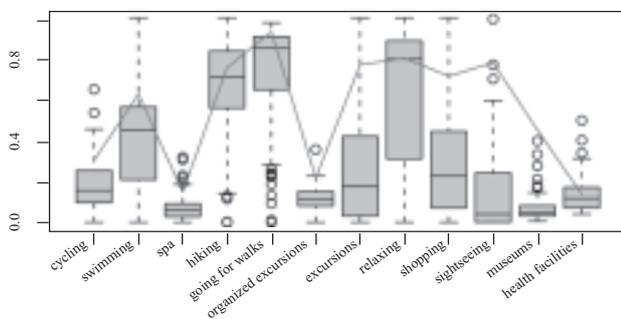
Cluster 4: 107 centers, 711 data points
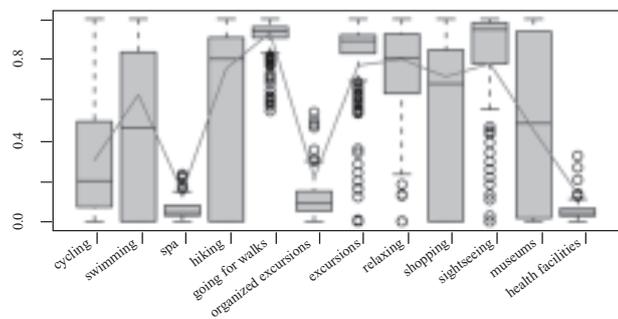
Cluster 5: 372 centers, 2147 data points

Figure 3: Box plots of the five-cluster solution

Analyzing the five-cluster solution it turns out that indeed both Segment 1 and Segment 3 from the three-cluster solution have been further subdivided. The segment description box plot is given in Figure 3.

Segment 1—active individual tourists (24% of the total sample): Although the name remains unchanged, this

segment lost roughly two thirds of its members. The result is a more homogeneous segment that is best described by a high level of general activity in both cultural activities as well as sports.

Segment 2—health-oriented holiday makers (14%): This segment is the only one remaining completely

Table 2: Description of background variables for the five-cluster bagged clustering solution

	seg.1	*seg.2*	*seg.3*	*seg.4*	*seg.5*	*p-value*
Age	45	53	53	55	48	2e-16
Daily expenditure per person (Euro)	48	68	52	56	52	2e-16
Monthly disposable income (Euro)	2300	2400	1900	2200	2300	2e-09
Length of stay (days)	12	10	8	7	9	2e-16
Intention to revisit Austria:						0.002
definitely	31	36	32	26	34	
probably	37	33	27	44	35	
probably not	18	20	15	17	16	
definitely not	15	12	26	13	15	
Intention to recommend Austria:						0.011
definitely (1)	71	72	66	71	67	
2	24	22	24	23	26	
3	5	5	8	5	5	
4	1	0	2	1	1	
5	0	0	0	0	0	
definitely not (6)	0	0	0	0	0	
Prior vacations in Austria:						2e-16
never	14	8	7	24	11	
once	12	6	5	14	9	
twice or more	74	86	89	63	80	
Sources of information used:						2e-16
no information needed	31	35	44	20	35	
brochures	19	17	12	22	20	
travel agent	11	7	8	22	9	
media ads	5	5	4	5	4	
friends and relatives	23	27	23	21	22	
local tourism bureau	7	7	5	7	7	
Internet	4	3	2	3	3	

unchanged. This niche segment was distinct enough to be identified by bagged clustering in the three-cluster solution, which represents a major strength of the proposed technique for managerial interpretation.

Segment 3—really just hangin' arounds (9%): By splitting the original Segment 3 into two subgroups the profile of the relaxation tourist becomes even more distinct. Except for two items, health facilities and relaxation, all activities are undertaken far less often than in the average tourist population of Austria in summer.

Segment 4—tourists on tour (13%): Originally members of the *just hangin' around* segment, this subgroup is

more passive than estimated in the three-cluster solution. Sightseeing, shopping, and going for walks—probably mostly within the framework of organized excursions—are the common interests of the members of this segment. For these interests, the group also demonstrates very strong homogeneity.

Segment 5—individual sightseers (40%): The largest segment in the five-cluster solution is a subsegment of the original Segment 1. As opposed to the *active individual tourists,* the *sightseers* seem to have a clear focus. They want to hop from sight to sight. The items sightseeing and excursions are strongly and commonly agreed upon in

this group. Neither sports nor shopping are of central importance, although some members do spend some of their leisure time undertaking those activities.

The five-cluster solution seems more appropriate for marketing purposes than the three-cluster solution. This becomes obvious from the descriptions based on the activities, where in addition to the *health-oriented holidaymakers,* four more differentiated segments are identified. First, the splitting of the active tourist group leads to a group of generally active visitors and a second segment interested in cultural activities. The splitting of Segment 3, *just hangin' arounds,* also results in a more focused picture. One subgroup really seems to deserve this label, whereas the second subgroup is fond of sightseeing and joins organized excursions to explore the country, at the same time not engaging in other kinds of activities.

Analysis of the segments' profile variables supports this conclusion. As can be seen in Table 2, Segment 4, *tourists on tour,* demonstrates some typical features of culture tourists: short stay, low intention to revisit, low prior experience with Austria, and high use of travel agents for the organized vacation. Segment 3 on the other hand seems to have spent decades of summer holidays in

Austria. With 89% of them being regular visitors and 43% needing no information whatsoever, this group gives the impression of coming to a well-known holiday destination and enjoying life without any kind of excitement or action. The active tourist group, as noted, also split up. Segment 1, *active individual tourists,* are the youngest vacationers with a median age of 45 years. They spend the lowest amount of money per person in Austria. Their prior experience is relatively low. The second active group, Segment 5, *individual sightseers,* is also rather young; they are fond of Austria and intend to revisit the country.

To conclude the interpretation of the case example data, the five-cluster solution seems to provide better insight into the structure of summer vacation visitors in Austria. Of course, numerous other background variables could be explored before final marketing action is decided. However, this illustration is sufficient to demonstrate the use of bagged clustering for the exploration of market segment structure in empirical data.

5. Comparison with Standard Methods

5.1 Number of clusters

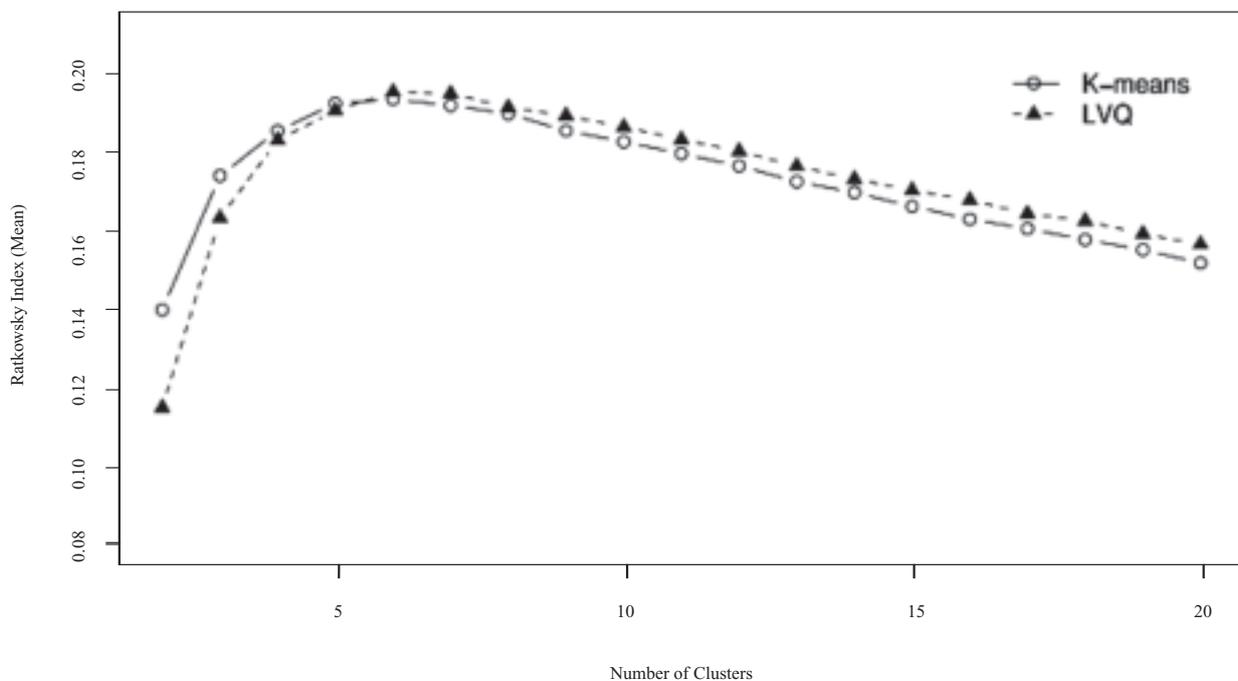For K-means and LVQ, indexes have to be calculated in

Figure 4: Mean Ratkowsky index for *K*-means and learning vector quantization (LVQ) over 100 replications.
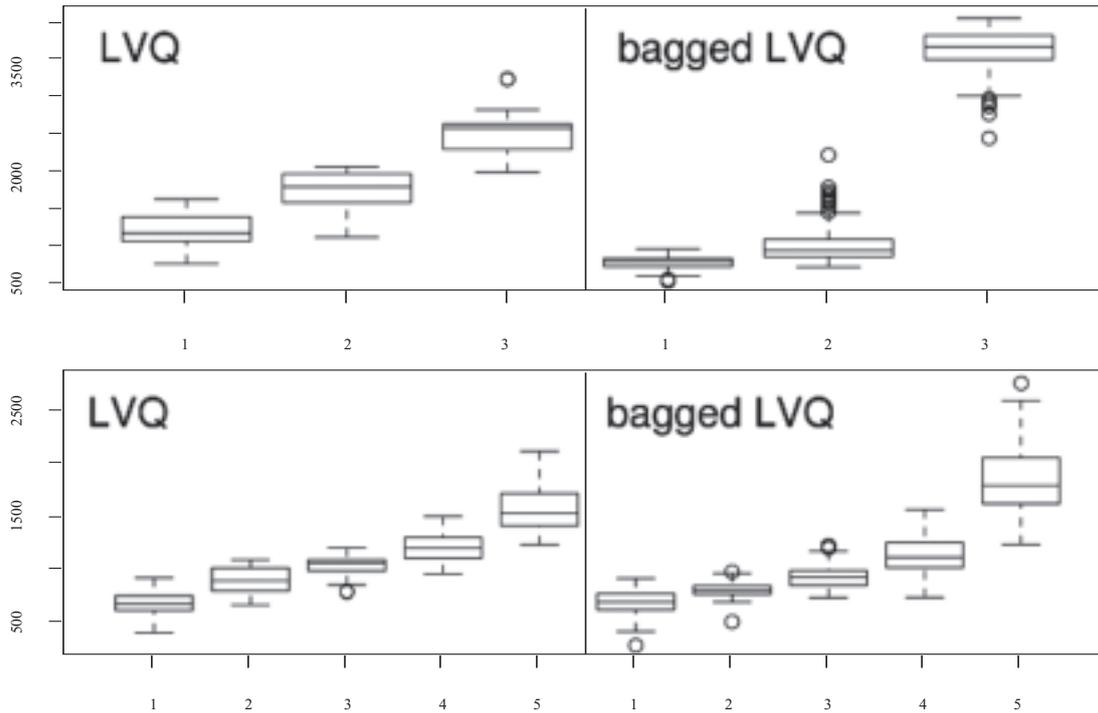
Figure 5: Distribution of cluster sizes for learning vector quantization (LVQ) and bagged LVQ.

order to determine which number of clusters seems to represent the data best; see, for instance, Milligan and Cooper (1985) for an overview. We used the Ratkowsky and Lance (1978) index because it performed best in a comprehensive Monte Carlo simulation on artificial binary data sets similar to our data (Dimitriadou et al., 2002). We ran both *K*-means and LVQ for 100 replications for *K*=2 to 20 clusters on our data set. The mean Ratkowsky index is shown in Figure 4, giving a weak recommendation of five clusters for *K*-means and six clusters for LVQ.

Contrarily, bagged clustering's hierarchical solutions allow exploration of stepwise splits. In the example provided, the three-cluster solution was chosen as a starting point. As it included groups that were too large and too general, two splits were investigated that increased the number of clusters from three to five. Instead of the black-box choice when deciding on a number of clusters among independent partitioning solutions, the splitting analysis approach enables the researcher to actively choose the homogeneity desired for single groups of respondents.

5.2 Unequal-sized clusters

Data sets including segments of unequal size are known to cause difficulties for a number of standard partitioning methods (Dimitriadou et al., 2002).

Figure 5 shows box plots of the sizes of the smallest, second, third, etc. through to the largest cluster found by LVQ and bagged-LVQ for three and five clusters over 100 repetitions. The distributions of the five-cluster solutions are very similar for both algorithms; however, for the three-cluster solutions there are noticeable differences. LVQ tends to produce clusters of more similar size than bagged-LVQ. The smallest cluster is systematically larger than the smallest cluster of bagged-LVQ, and the largest cluster is systematically smaller. The *K*-means algorithm renders similar results.

For market segmentation applications, this difference between bagged clustering and the typically-used non-hierarchical partitioning algorithms is highly relevant, especially when searching for interesting niche segments. Bagged clustering is superior in identifying niche segments. This is nicely illustrated by identifying the *health-oriented holidaymaker* in both the three-cluster solution and the five-cluster solution of the case example.
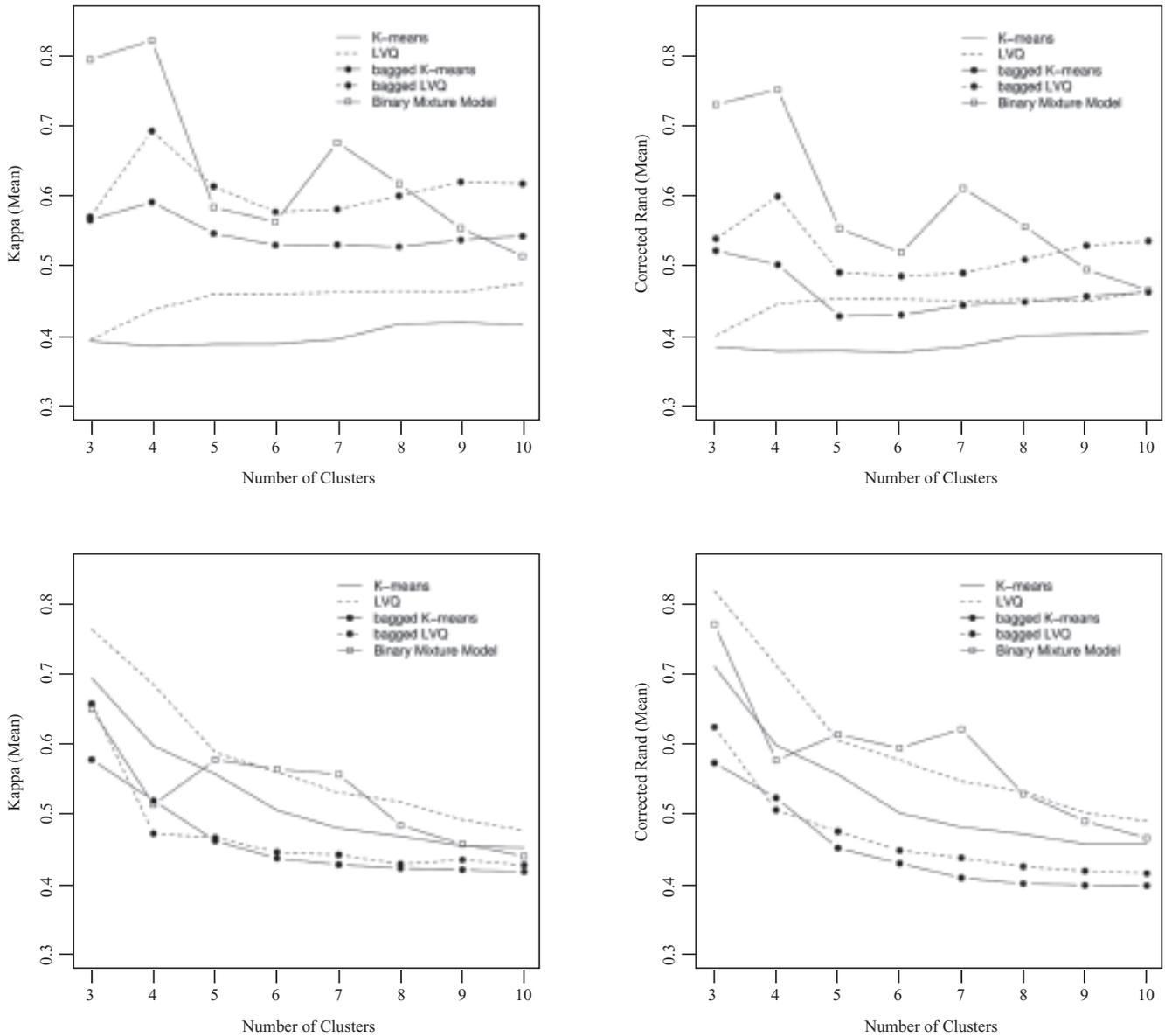
Figure 6: Stability of clustering algorithms over 100 repetitions for 3 to 10 clusters:
Mean kappa (top left), mean corrected Rand (bottom left), standard deviation of kappa (top right) and standard deviation of corrected Rand index (bottom right).

5.3 Stability comparison

We also compare the stability of standard *K*-means, LVQ, and bagged clustering. Furthermore, we include a binary mixture (BinMix) model in the comparison. *K*-Means, LVQ and BinMix were independently repeated 100 times on bootstrap training samples using *K*=3 to 10 clusters. Then 100 bagged solutions on bootstrap samples were computed using *K*=20 for the base method

and *B*=50 training sets. The resulting dendrograms were cut into three to 10 clusters.

All partitions of each method were compared pairwise using one compliance measure for classification problems (Kappa index; Cohen, 1960) and one compliance measure for cluster analysis (corrected Rand index; Hubert and Arabie, 1985).

Figure 6 shows the mean and standard deviation of k and v for $K=3,...,10$ clusters and $100*99/2=4,950$ pairwise comparisons for each number of clusters. Bagging considerably increases the mean agreement of the partitions for all numbers of clusters while simultaneously exhibiting smaller variance. Hence, the procedure stabilizes the underlying base method due to the averaging over multiple solutions. It can also be seen that LVQ is more stable than K-means on this binary data set. The binary mixture model has the best agreement on average, but simultaneously has a very large variance — that is, it is very unstable. Whether binary mixture models can be stabilized using aggregation methods, and bootstrapping of parameter estimates of finite mixture models in general, is currently under investigation.

Managerially this is of huge importance. Investigations of stability become a crucial indicator of the usefulness of the solution as a basis for long term organizational strategies.

5.4 Interpretation and visualization advantages

For managerial interpretation of segments it is necessary to determine their main characteristics by identifying marker variables. The standard procedure when working with mean values is to search for strong deviations of segment means to the total sample mean. An example is provided in Figure 7 for Segment 1 of the five-cluster LVQ solution. For a precise description of this cluster it should be mentioned that the sightseeing activity is above the average level. This variable thus represents a marker variable for cluster one.

The simple mean value interpretation might lead to uncertainly of interpretation that can be avoided by using a bagged clustering chart as the basis of characterization. Specifically, Figure 3 – based on bagged clustering rather than standard procedures – allows more insight into the actual distribution of opinions. In the case of Segment 2, the mean value for sightseeing is above average, too. Nevertheless, sightseeing would not be a marker variable, as dispersion is too high. Obviously this segment has other more central commonalities, like swimming or the spa. Again, the additional information provided by bootstrapping the partitioning algorithm enables the analyst to gain insight about such issues. In general, interpreting Figure 3 leads to more careful conclusions than basing the segment descriptions on a bar plot like the one given in Figure 7.

6. Conclusions

Numerous algorithms exist for partitioning empirical data. The bagged clustering approach has a number of advantages, some of which are of general interest and others of interest to analysts confronted with binary survey data.

Bagged clustering is less dependent on the starting solution. Several independent runs are combined in the final result, thus averaging out starting value effects. Furthermore, the stability of solutions generated by bagged clustering is higher than the stability of the underlying base method. The analyst can be less concerned about the stability issue and need not calculate several replications of bagged clustering, as the
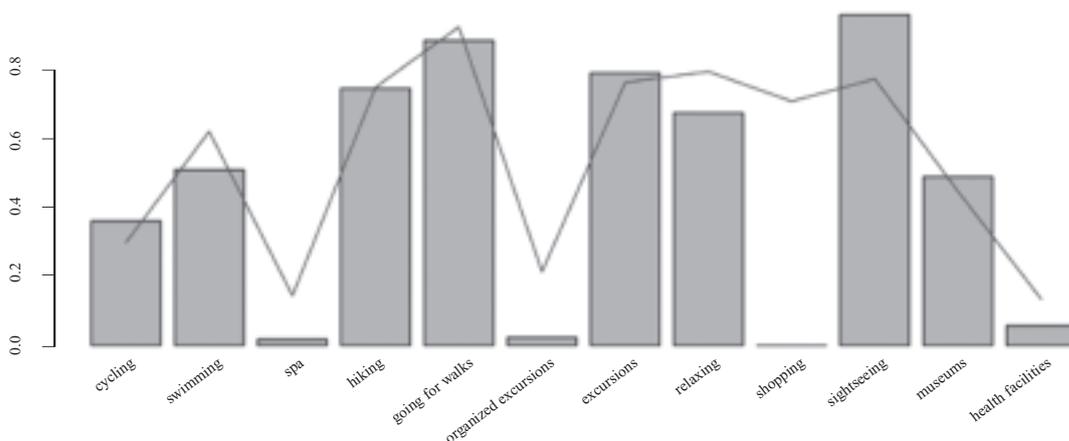

Figure 7: Standard barplot of Segment 1 of the five-cluster learning vector quantization (LVQ) solution.

replication effect is captured by the procedure itself. Structurally stable segments can be identified (or the fact that no stable structure exists in the data can be readily identified if the centers from several runs do not agree at all). Bagged clustering also introduces a framework for bootstrapping partitions; it indicates how much the segmentation would change if we were given a new sample of the same size from the underlying population.

Ease of interpretation is increased markedly in the case of binary data by our new way of plotting segment profiles using box-whisker plots.

Exploration of solutions with different numbers of prototypes is less complicated with bagged clustering, as merging and splitting processes can be traced on the basis of the same solution. This way, potentially interesting segments that contain a large number of individuals can be split in order to investigate whether further segmentation might be desirable. Substantiality and distinctiveness of profiles could be criteria during such an exploration phase. A major advantage is therefore the ability to search for niche segments, as compared with LVQ and *K*-means solutions that tend to identify groups of approximately the same size. Niche segment detection using these methods either has to be performed by calculating partitions with high numbers of segments or by using such a solution as a starting point and merging similar prototypes using either internal or external criteria in order to finally interpret unmerged niche segments (Mazanec and Strasser, 2000; Buchta et al., 2000). Finally, the *a priori* decision on the number of clusters is not necessary.

One obvious drawback of bagged clustering is the computational effort involved, as numerous partitions have to be calculated. But modern computers get faster every year such that, for instance, the 50 LVQ runs necessary for computing the segmentation of our data set required only 167 seconds on a Pentium III with 450MHz.

Bagged clustering thus represents a valuable addition to the methodological toolbox of grouping techniques that — due to its inherently repetitive nature — prevent a number of possible managerial pitfalls in interpreting segmentation solutions. As such, bagged clustering can be applied for any organization that needs to find sub-groups of customers to target specifically. In tourism, these could be tourist groups with different motivations to travel (for instance, exploring the natural ressources of a destination versus studying the cultural heritage of a foreign city) or different travel behavior patterns (for instance, tourists on short stays booking their vacation just weeks before departure and staying in high quality accommodation versus backpackers travelling for months with low daily expenditures and virtually no advance booking behaviour). In branded industries, segments with different preference patterns could be determined (for instance, car-buyers with a preference for a compact car that can be parked easily in cities while still projecting a classy image versus drivers who are not willing to pay a premium and mainly care about the functionalities of a vehicle). In the government sector segmentation could significantly improve community service provision (for instance, parents could be grouped according to the schooling requirements of their children to better target public schools and consequently make them more attractive and less vulnerable to private competition). Finally, non-profit sector groups could make use of the segmentation concept in many ways. For instance, to identify segments within the community that demonstrate attractive donation behavior and are consequently good targets for donation appeals.

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Acknowledgements

Biographies

Sara Dolnicar, PhD, is an Associate Professor at the School of Management, Marketing & Employment Relations, University of Wollongong. She completed her University degree in Psychology at the University of Vienna and her University and PhD degree in business administration at the Vienna University of Economics and Business Administration, where she worked from 1994 to 2002 as an assistant professor. During this period of time she acted as secretary general of the Austrian Society for Applied Research in Tourism, located in Vienna. Dr Dolnicar is a member of the research centre "Adaptive Modelling and Information Systems in Economics and Management Science", which is a joint endeavour among three universities in Vienna and funded by the Austrian Research Foundation. Her research interests centre on issues of integrated market structure analysis.

Friedrich Leisch, PhD, studied Applied Mathematics at Vienna University of Technology, graduating with a MSc degree in 1993. He finished his PhD in Applied Mathematics at the same university in 1999. He was awarded the Kurt Godel scholarship for postgraduate studies at the Knowledge-based Engineering Systems

Group, University of South Australia, Adelaide. Since then he has worked as a research assistant in the research centre "Adaptive Modelling and Information Systems in Economics and Management Science", as an assistant professor at the Department for Probability Theory (Vienna University of Technology) and as an assistant professor in the Department of Statistics and Decision Support Systems at the University of Vienna.

Correspondence Addresses

Sara Dolnicar, Associate Professor, School of Management & Marketing University of Wollongong, Wollongong, N.S.W. 2522, Australia. Telephone: (+61 2) 4221 3862, Facsimile: (+61 2) 4221 4154, Email: Sara_Dolnicar@uow.edu.au; Friedrich Leisch, Assistant Professor, Department of Statistics and Probability Theory, Vienna University of Technology, Wiedner Hauptstraße 8–10/1071, 1040 Vienna, Austria, Telephone: (+43 1) 58801 10715, Facsimile: (+43 1) 58801 10798, E-mail: Friedrich.Leisch@ci.tuwien.ac.a

Doctoral Coursework is Needed in Australasia

Frank Alpert & Michael A. Kamins

Abstract

The formal structure of most Australasian marketing doctoral programs is still thesis-only. This Commentary presents the perspective that this structure is not ideal for today's academic environment. We argue for the importance of coursework in a doctoral student's education. The argument should be relevant to all thesis-only social science and business doctoral programs, but our focus is on the case of marketing in Australasia. Students having coursework may develop stronger research skills than thesis-only students, thus thesis-only students would generally be at a disadvantage in terms of achieving publication in higher-ranking international journals. Coursework clearly helps to broaden and deepen a student's knowledge of research methods, but it also helps with the subtle and tacit skills of judging research quality.

Keywords: Marketing education, Doctoral coursework

1. Introduction

Completing a PhD without having had the benefit of doctoral coursework is similar to competing in a swim meet while being thrown into the deep end without knowing how to swim. If that's not enough, you find yourself thrown in with other swimmers from abroad, who have already had several years of swimming training. While through sheer force of intellect and strong self-discipline you may ultimately learn on your own how to conduct research and get published, many others will have had the benefit of up to several years of doctoral coursework to help them. This typically includes many courses where published articles are discussed and critiqued, with their problems surfaced for all to see. There is now *global* competition to publish, and those who are "well trained" will generally have an advantage toward having their work see the light of day in the better journals.

Australasia is the only English-speaking region we are aware of that generally does not require doctoral coursework in Marketing. A survey in 2003 of the websites of all 37 Australian public universities plus the Australian Graduate School of Management and the private Bond University, plus the 8 New Zealand universities, totalling 47 websites surveyed, revealed only 6 with *mandatory* doctoral coursework. Thus, 87% did not have mandatory coursework. (A few cases were unclear from the website, but if coursework was required it should have been clearly indicated.) Adverse consequences from this situation may have been limited in the past, when there was an ample job market for Marketing academics and more of a teaching focus. Increasingly, however, according to Polonsky et al. (1998), the importance of publishing for Australasian Marketing academia is growing, leading these authors to conclude that now "there is much more of a U.S.-type publish or perish mentality." Combine these two factors—importance of publication and global competition to publish—and the need for the best possible research training is strong.

Are Australasian doctoral students well prepared by their training for this new environment? Unfortunately, as Uncles (1998, p. 89) points out, it is quite common to find doctoral theses in Australian universities where:

"The student attempts to show mastery of a body of knowledge by describing it at length in an exhaustive literature review. Far from being a presentation of the student's own synthesis of the literature, it tends to read more like a general textbook."

This describes a fairly basic error. Quite simply, we would call this type of research effort a "laundry list dissertation" where a mass of literature is favoured over integrating and analysing literature to lay a foundation for hypotheses. That is, without a deeply-internalised basis in how to write a research paper, the default dissertation option for many is an agonizingly long description of the literature. These students tragically believe that the more citations in the literature review, prima facie the more favourably the thesis will be received. For what it's worth, we have seen Visiting Scholars here from North America express shock at what they view as the lack of rigorous training, saying that doctoral students here are smart but poorly trained.

A lack of doctoral coursework in critical areas such as marketing theory, consumer behaviour and research methodology can result in a lack of guided experience critiquing marketing articles. This leads to weaknesses in theoretical development and methodological follow-through (components critical for success in any business research project). Taking research methods as an example, it is a challenge for students on their own without coursework to achieve: 1) *depth* in a sophisticated method, such as structural equation modelling, sufficient to allow skilful use, and 2) awareness of the *breadth* of research methods available today, from conjoint analysis through time-series modelling, in order to identify the *best* method to suit the research problem. This gives rise to a tool-kit approach to conducting empirical research where students only attempt the methodological approach they or their supervisor know best, without branching out into using what may be the more appropriate methodology. While a lack of rigorous research methods training is the most glaring deficiency in thesis-only systems, there are more subtle problems too, on which we shall focus.

2. The Traditional Australasian System of Doctoral Education

In the traditional Australasian system, a research student can show his/her research prowess by first writing an Honours thesis in partial fulfilment for the Honours degree. Once this is successfully completed, he/she at some point moves on to the doctoral level by working with a PhD research supervisor on a topic of mutual interest, typically over the next three years (at a full-time pace). At completion, the thesis is sent out to two or three external examiners who grade the thesis on a range of something like outright acceptance, minor revision, major revision, and failure. According to Moses (1985), there are three requirements for an Australasian Ph.D. thesis: a) that a distinct contribution to a body of knowledge is demonstrated, b) that competence in the research process is exhibited, and c) that mastery over a body of knowledge is shown. While this system has been successful in producing doctoral graduates most of whom go into the world of academia, one might ask is it also equally successful in training them for the art of getting published in good journals today, a challenge that will face them throughout their research career? The original Oxford/Cambridge thesis-only system may have been meant for small numbers of the very elite prior to the modern information explosion. While some individuals today through their own ability or through the astute guidance of their PhD supervisor can of course achieve a high level of skill, we are now at a time of *mass research higher degree enrolment* (at least compared to a half-century ago) in Australasia, so a more broadly effective system is desirable – something that has been increasingly evident in recent years (Uncles, 2000).

What of the argument that research students have completed a year of a Bachelors Honours program that includes coursework? Honours programs vary considerably around Australasia, but in our view an Honours degree is not a substitute for doctoral coursework for three reasons. Many, if not most, Honours programs for marketing students have few or no scholarly courses. Unlike Honours programs outside of business fields, which are entirely scholarly, business Honours programs may include managerial courses as well. Even for scholarly courses, the level of the courses are generally not doctoral level. Some students have a gap of years between their Honours degree and the start of their PhD. Furthermore, some individuals may seek to commence PhD study through the "back door" (i.e., without an Honours degree). Again, these are general statements about Honours programs, as there will be some scholarly aspects in some Honours programs that may be quite good.

We have already hinted above that mastery and competency over a research area cannot and should not be measured in kilos. While a current guideline is that a doctoral dissertation should be 75,000 words (Preece, 1994), there is not and cannot be a guideline for what exactly these words should say, and that is the major problem facing a new doctoral student. Indeed, the key to a successful thesis and ensuing academic career lies in point a) above, that is, the ability to make a distinct contribution to a body of knowledge. We would

recommend stressing that aspect by phrasing the PhD requirement as a "significant contribution," as opposed to merely a "distinct contribution" (which seems Honours thesis level to us). Just over half of Australasian universities have moved on to an official standard of "significant" or "substantial" contribution (25 in the survey of 47 websites), but still five state "distinct" and another seven simply state "original" (the rest being unclear or unspecified in the website).

But the catch is, how does one go about developing the necessary skills to make a significant contribution? Clearly, there are books and articles to be read which explain in great detail the various elements of the research process from thesis formulation to the general process of getting published, to the specific characteristics of "good" research. For example Perry (1998) and Uncles (1998) discuss and present some common and alternative perspectives regarding how a thesis should be structured. Baker (2000, 2001a, 2001b) offers the Marketing field a series of articles with advice on selecting a research methodology, writing a literature review and "writing up and getting published". The popular book How to Get a PhD (Phillips and Pugh, 2000) necessarily only scratches the surface of how to do good research. The mere presence of these publications suggests that there is a growing need for young researchers to understand the process of research. However, one should ask, *if you have to read these articles to understand how to do research,* have you already begun to sink in the deep end of the pool? Indeed, even if you read these articles would you be assured of success? Isn't good research too sophisticated an art for someone to simply read 5-10 such articles on their own and then go for it?

Furthermore, we would argue that a key article among this set is missing, and that is the article that tells you how to come up with a research idea, which makes a significant contribution to an area of marketing. If one could write an article containing a magic formula, which assuredly generates such research ideas, it would already have been done (and have been frequently cited!). Yet many researchers do come up with creative, interesting and substantive research ideas, month after month and year after year. How do they do it?

3. Benefits of Doctoral Coursework

Uncles (1998, p. 88) hit the nail on the head when he said that many doctoral students "will wish that some guidance had been offered earlier." We argue that this guidance comes in the form of required coursework. The USA and Canada have of course an established tradition of about four doctoral courses per semester for four semesters (two years), culminating in a major field exam. Even the British form of doctoral education (on which the Australasian system is based upon) has moved from the traditional major advisor/no coursework system, to one that includes a curriculum incorporating formal research training (Huisman, De Weert and Bartelse, 2002). We are not advocating a full 16 course North American system, but are arguing that introducing some coursework is beneficial.

What are the benefits of doctoral coursework? In the "doctoral seminar" framework, where several journal articles are read and critiqued by the students with the discussion guided by an academic staff member expert in the field, doctoral students gain practice in evaluating scholarly research. They learn not only the issues with empirical methods in actual practice, but also the more difficult art of evaluating the contribution of hypotheses. This skill only comes with practice! It takes reading a great many journal articles to *internalise* a sense of what research is strong and what is weak. The doctoral courses provide this experience academically and socially. Indeed, by hearing what other students and the academic also say, they get a broader sense of what comprises "good" research. Research skill thereby becomes *tacit knowledge,* or more specifically, "sagacious tacit knowledge," which Castillo (2002) argues is the "engine of scientific discovery." This tacit knowledge cannot be learned by simply reading on one's own an article such as "How to Do Research" (or even several such articles). There are difficult judgement calls in social science research. For example, "when are my hypotheses good enough?," "when is my contribution significant enough?," "when is my research method strong enough and appropriate enough?," and "when are my research questions done?" You can't read how to make these judgement calls—they are tacit knowledge, a skill, honed/internalised from (guided) critique of a great many research articles. Typically, in a North American marketing PhD program there are four doctoral courses per semester for four semesters (two years). Of these 16 courses, say six are textbook courses, some of which are methods courses, and eight are readings seminars. Furthermore, suppose that the readings seminars cover four journal articles per week each for ten weeks of a twelve-week semester. If you work out the math, this totals 320 articles critiqued!

Furthermore, at many top universities around the world the doctoral seminars typically involve as part of assessment the development of a "research proposal" that includes a literature review, development of hypotheses and description of proposed methodology. In this, the only element missing from a full paper is the actual collection of empirical data. Those who practice writing research proposals should be able to come up with a stronger one for their actual dissertation. Indeed, Polonsky et al. (1998) argue for "learning by doing" in the context of working with your research supervisor or academic mentor – however, more practice in writing research proposals can be accomplished, and in a more systematic way, through doctoral coursework preceding and in preparation for the dissertation.

Three UK academics writing about their doctoral experiences (Lindgreen, Vallaster and Vanhamme, 2001) suggest two relevant "Do's" for a doctoral research program: "Take courses in a field if you are lacking some theoretical background; and participate in doctoral colloquiums, seminars and conferences." Furthermore, in terms of addressing the problem of the *isolation* of thesis-only doctoral students, Lindgreen credits doctoral seminars as an instrumental component of his success in the doctoral program in that he was able to effectively network with other doctoral students, which continued on after graduation and led to joint research. The Australian PREQ (Postgraduate Research Experience Questionnaire) results show that, of several factors affecting the context for RHD study (eg, supervision, infrastructure support, skill development, intellectual and social climate), it is the intellectual and social climate that is the least satisfactory nationwide (Ainley, 2001). The PREQ is administered to all graduates of RHD programs in Australian universities. Furthermore, Margaret Powles's (1989) study indicated that at the University of Melbourne, intellectual and social isolation was the most significant university-related factor related to withdrawal or failure to complete. Doctoral seminars can relieve these problems by creating a collegial community among research students. Often there is extensive interaction and even passionate debate among the students, which hones their skills of discussing marketing phenomena.

From another perspective, coursework with different faculty members enables students to gain an understanding of the research interests of academic staff and helps the student to decide whether he/she can work effectively with particular professors, both from a

personality and research perspective. Again, as noted by Les Johnson in Polonsky et al. (1998), critical elements of research success are linked to how well the mentor and student "get along" on dimensions of personality, research interests and work habits. In some universities around the world, it is only until after the doctoral coursework is completed that the student's thesis advisor is determined. This allows the student to more fully develop his/her research interests, and to find a supervisor that is most congruent to these interests and also to her/his personal style. For the student to be assigned a PhD supervisor based simply upon topic area is problematic. For students to choose based on whom they liked as a lecturer in their undergraduate courses, or even to simply stay with who they worked with in their Honours program, may be suboptimal in that students may not be exposed to research expertise and styles of *all* the academic staff. Furthermore, students wouldn't know which staff members meet needs such as for particular methodological expertise.

There is also debate over breadth versus specialisation. Thesis-only leads to highly specialised knowledge. Coursework leads to broader knowledge. We believe today's academic has to teach a variety of courses and interact with colleagues with a variety of interests, so some breadth is desirable. Breadth also facilitates choice of thesis topic. The thesis-only system requires identification of topic, at least in broad terms, upon entry—perhaps with exposure to other areas in marketing, a different topic might have been preferred. Furthermore, the coursework helps with specification of the research topic, as students are more familiar with and can more easily identify literature gaps as well as knowing the appropriate scope for a research study. The breadth from coursework helps make students into *scholars of marketing,* which is something different from simply being an expert in the usually narrow area of the PhD thesis.

Coursework is not a novel approach to learning in Australasia, as it is present at both the undergraduate and masters level. So why not at the doctoral level? There are a number of counter-arguments against doctoral coursework. One is that that doctoral courses are uneconomical because enrolments would be too small as annual doctoral intakes in each discipline are often small. The easy answer is to *aggregate* students from cognate fields or across years within a field, such as have a business research methods doctoral course that all new business PhD students would attend.

Second, it may be argued that coursework delays fieldwork. Yet, North American PhD theses are completed in two years, after two years of coursework, so coursework may actually speed up thesis completion. Some students may claim they already have sufficient training and therefore coursework would slow them down by being unnecessary. In such cases, the onus would be on the student to prove their prior training was equivalent in order to have the coursework waived. Public policy debates are relevant here too. Funding arrangements already in place in Australia exert pressure on universities to expedite completions, and there is consideration being given to, in terms of future funding, providing financial incentives to universities for early completions, which might raise concern about requiring too many courses. These issues are discussed in the report of the Evaluation of Knowledge and Innovation Reforms Consultation Group. Nevertheless, the government only requires 66% of a PhD program to be the research component, which leaves ample scope for some coursework.

Third, coursework may be perceived as dogmatic—doctoral students being told how to do research, when scholarship is all about original thinking. The academics who lead doctoral courses do a good job when they consciously try to encourage original thinking and original approaches.

Fourth, some argue there is a shortage of academics in our part of the world to lead marketing doctoral courses. This would hopefully be a short-term problem, but could be made up for by regional synergies, such as research-successful professors leading seminars open to all in their capital cities, and "bush doctor" researchers invited to visit isolated campuses, both possibly including eminent visiting scholars from all over the world.

Finally, are there steps short of coursework that are sufficient "compromises" between the old and new systems? The university could provide optional research methods workshops on selected research methods, its learning centres could provide optional research skills workshops, and there may be optional PhD colloquia on national or regional bases. Attendance might be "expected" at the Department's research speaker series, and mandatory Business School PhD colloquia. However, the problem with optional resources is that some students may not realise they need these options. Departmental research speaker series would not typically have sufficient guided student discussion. We argue why

stop at halfway measures—why not begin to introduce mandatory coursework. Useful enrichment activities (e.g., attendance at research speaker series, the occasional specialised workshops) can continue alongside the coursework and enhance the program.

4. Recommendation: An Efficient Start with Two Courses

We are suggesting that universities without doctoral coursework should gradually introduce coursework into their doctoral programs, as a few in Australasia are already doing. One course is better than none, but we propose, as a starter, two in particular that efficiently begin to provide the best of the coursework system. One course could be what is sometimes described as a *"survey course"* doctoral seminar. This has little to do with survey research, but rather is a course taught by different marketing staff members on a weekly basis. Each staff member assigns pre-readings in the area of their research expertise that are to be discussed on a given week, and hence the course becomes both a survey of the marketing literature and an overview of academic staff expertise and styles. The survey course helps develop the tacit knowledge of judging the quality of research ideas and empirical tests in marketing. Furthermore, students then choose one of these topics of interest in which to write a research proposal, containing a literature review, methodology and development of hypotheses – everything except the data! Therefore, the dissertation topic does not have to stand on the Honours Thesis, but may evolve as the student experiences the broader variety of the doctoral program. Furthermore, the survey course is very efficient in leveraging staff research expertise into doctoral teaching, and probably most staff would be delighted to lead a week's seminar even if the Department's marketing doctoral enrolment is small.

A course in *research methods* would obviously be a strong candidate to coincide with the survey course during research students' first semester. Not only would this course cover complex statistical methods, but also probably qualitative research, questionnaire design, and experimental design. Many students are weak in research methods when they enter a doctoral program, and find out rather quickly that these are a critical requirement for successful completion of their dissertation. Furthermore, finding the right method and true mastery over it are critical if the student is to write articles to be published in top marketing journals. Perhaps 50 years ago research

methods could be mastered by self-study, but today's research methods are more varied and more sophisticated. Most students would probably prefer some help with, say, structural equation modelling (a combination of psychometrics and econometrics that is quite complex), rather than having to learn it on their own. Some leading journal articles warn of misapplication of complex methods such as this (e.g., Baumgartner and Homburg, 1996) — the misapplication problem could be exacerbated by weak training in the method.

The methods course and survey course nicely complement each other, as the methods course could be the same course for all business students, thereby achieving economies of scale, and be textbook-based. The survey course, in contrast, would be a journal article based course, specific to the student's discipline.

There are other possible sets of doctoral coursework, including larger sets with four or more required courses. For example, some would argue that a course in philosophy of science, or marketing theory, would also serve the doctoral student well as it could directly tackle the difficult issues of epistemology and theory construction in social science. There is also a strong argument that adequately covering research methods requires at least two courses, not just one. These would be the expansions we would make if we had to choose a four course sequence. However, it is not the purpose of this Commentary to argue which set of doctoral courses is best, but rather to argue for moving from *none to some.*

There are many forms of doctoral coursework already introduced at what were once thesis-only universities, some now in Australasia. There is only space here to mention one, from one of the originals, Cambridge University. At the Judge Institute of Management at Cambridge University: "The compulsory Research Methodology Course is held in the first year and comprises four sections: The Philosophy and Methodology of the Social Sciences; Quantitative and Qualitative Methhdology (sic); Research Design; and Statistical Package for the Social Sciences" (http://www.jims.cam.ac.uk/programmes/phd/phd_f.htm l, March 2004). (To this, we would add a discipline-specific course, such as the survey course.)

In sum, we argue that Australasian marketing doctoral students could benefit strongly from taking coursework in terms of writing better dissertations, becoming more skilled researchers and more competitive in the global publications contest, and ultimately in being broader and better colleagues and teachers.

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Acknowledgements

Biographies

Frank Alpert is Professor of Marketing at Griffith University and was Head of School in the School of Marketing. His research interests are on marketing strategy, positioning and brand managment. He has published in leading marketing journals, including the *Journal of Marketing, Journal of the Academy of Marketing Science, Journal of Consumer Psychology,* and *European Journal of Marketing*

Michael A. Kamins is an Assoicate Professor of Marketing at the University of Southern California. His research interests are in the areas of Internet auction bidding behaviour, puffery and exaggeration in advertising, cognitive and affective processes in advertising, and pioneer advantage. During his career, he has published over thirty articles in scholarly journals in marketing and psychology, including the *Journal of Marketing Research, Journal of Marketing, Journal of Consumer Research,* and *Psychology and Marketing.*

Correspondence Addresses

Frank Alpert, Professor of Marketing, Griffith Business School, Griffith University, Brisbane, Australia. Email: f.alpert@griffith.edu.au. Michael A. Kamins, Associate Professor, Marshall School of Business, Department of Marketing, University of Southern California, USA.

The Effect of Advertising and Display: Assessing the Evidence

Kluwer Academic Press: Boston, MA (2003)

Robert East

In the past 10 years there has been increasing concern about the escalating cost of advertising, particularly television advertising. While other areas of business have been made more accountable, it has been a challenge to justify advertising expenditures. The usefulness of advertising has not been questioned, but the volume of advertising has. Firms are under increasing pressure to justify their marketing and advertising expenditures. Linking advertising and downstream sales is an area fraught with challenges and remains largely an unsolved problem in the marketing field. Instead, researchers and practitioners have created other measures of advertising success, such as Millward Brown's awareness index and RSC's advertising persuasion measure. Another key factor in helping explain ad recall is likeability. Measures such as these are all intended to help assess the effectiveness of advertising. The purpose of East's book is to report the most recent measures of advertising effectiveness and to give an unbiased assessment of how these measures perform. In addition, the book provides a nice blend of advertising practice and consumer behaviour theory.

The book is relatively short, being only 115 pages, split into six chapters. Each chapter begins with a paragraph introducing the keywords for the chapter and concludes with a helpful summary of the concepts and findings. The first chapter is entitled 'What is Effective Advertising?' and sets the stage by defining what the author means by an effective advertisement. He shows that focusing on just sales response is too narrow, with alternative effectiveness criteria being reduced price sensitivity and reduction in cost.

The second chapter deals with fundamental media planning issues such as frequency and timing of ads, plus the shape of the advertising response function. In this chapter the controversial work of John Philip Jones is introduced. East methodically pinpoints the problems with Jones' work without appearing over-critical. He also discusses some recent practitioner work by Andy Roberts and does a much better job than Roberts' original work in explaining the methodological enhancement that this Taylor Nelson study made over the Jones studies. The chapter titillates us with a new justification for heavy advertising frequency that we observe with television. Roberts' work found that people whose ad exposure was concentrated into a short period, typically a day, had a bigger increase in purchasing rates than people receiving the same number of ads over a longer period such as 28 days. A media planning implication of this for supermarket goods is to advertise heavily on Wednesday evening, as the majority of weekly shopping trips are made on Thursday through Saturday.

The third chapter deals with three related, but different long-term advertising effects, namely, wearout, carryover and decay. East does a particularly good job of merging in consumer behaviour theory to explain some of the observed patterns of these longer-term effects. Part of this explanation lies in word of mouth and diffusion effects, plus and understanding of the difference between heavy and light buyers/viewers.

The fourth chapter continues the theme of blending concepts from psychology into modern advertising practice. The importance and relevance of attitude to the ad and brand are discussed, plus the link to purchase behaviour. One large area that should have received more attention here is the work done by Millward Brown to link advertising awareness to sales. For example, this is covered in detail in the well-known advertising textbook by Rossiter and Percy. The chapter concludes with an explanation of the elaboration likelihood model, but does not illustrate how this model can be used to improve advertising effectiveness.

The fifth chapter addresses the 'display' part of the book title by examining the effect of point of sale advertising. Some of the multiplicative effects of advertising plus

price discounts are shown. The final chapter gives an overview of the state of online advertising. While the initial emphasis with banner ads was on click through and downstream sales, East correctly points out the importance of brand building and mere exposure with internet advertising.

While the book is clearly a nice synthesis of advertising effectiveness research, it does have some shortcomings. Firstly, the majority of the book uses examples from packages goods, with key business sectors that advertise heavily, such as financial services, airlines and telecommunications, barely mentioned. This may not be the fault of the author so much as the discipline itself, which is replete with studies of packages goods. Secondly, there is a tendency to draw from a narrow range of studies, particularly the work of Ehrenberg, Roberts and Broadbent, which additionally gives the book a UK bias. Still, neither of these shortcomings outweigh the positive contribution of the book.

In summary, this is a brief, but insightful update on advertising effectiveness. East has successfully pulled together many loose ends and disparate research studies in the area of advertising effectiveness and has come up with a book that is easy to read but not trivial in its treatment of the topic. The attempt to look at the 'big picture' of advertising is also welcome and successfully handled. There is something in this book for someone who knows very little about advertising and for someone with a broader knowledge, but who has not been able to put it all together. I strongly recommend you read this book.

Peter Danaher
Department of Marketing
University of Auckland

The Ultimate Secrets of Advertising

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John Philip Jones

One of advertising's thorniest problems concerns the measurement of advertising effectiveness. Conventional theory locates this problem in a buyer response framework. Rossiter and Percy (1997) neatly summarize the traditional view: advertising effects are seen as a series of gates, namely exposure, processing, communications effects (including brand position) and action. To be effective, advertising must pass through each of the four gates (pp 14-20). In theory, measures of ad effects must estimate the strength of every gate; both attitudinal and behavioural. In practice, however, most advertisers bypass attitudinal gates preferring to measure action directly. Indeed, sales response is often cited as the most widely used measure of advertising effects. This discrepancy between theoretical best practice and what occurs in the field has been explained, at least in part, by the costly and time-consuming nature of attitudinal research. The challenge, for advertising theory, is to find simple means of monitoring the gates, acceptable to both academics and practitioners.

The Ultimate Secrets of Advertising deals with fundamental issues. It seeks to address the big questions. Does advertising work? How does it work? How can advertising be made more accountable? The answers to these questions provide the organizational framework for the book. In particular, the "gatekeeper model" is introduced – a serious and systematic attempt to bridge theory and practice. This model provides advertisers with a simple and expeditious means of monitoring advertising's gates, and one that is conceptually and empirically sound. This is considered in the context of advertising effects in the short term, medium term and long term. Readers looking to this ambitiously titled book for detailed advice on how to formulate creative strategy or media strategy will be disappointed, but Jones stays true to his big questions.

Structure of the Book

The book spans ten chapters that are loosely organized into four sections. In the introductory chapter, the author's gatekeeper model is outlined. Chapters two and three comprise the second section, an investigation of short-term advertising effects. Chapters four and five make up the third section, which covers medium-term advertising effects. Long-term advertising effects are investigated in the remaining chapters. Two appendices, including a lengthy discussion of tracking studies, round out the discussion to provide a balanced and comprehensive coverage of advertising effectiveness.

The Gatekeeper Model

The author's "gatekeeper model," outlined in the opening chapter is more aptly described as a set of decision rules to guide advertisers. Its novelty lies in the claimed ability to use sales outcomes as a means of identifying campaigns with potential thereby assisting managers to make "go/no go" decisions.

Short-Term Advertising Effects

The first gate that campaigns must pass is the delivery of demonstrable sales response within seven days of exposure. Jones uses his original STAS (short-term advertising strength) index to evaluate campaigns worthy of passing through this gate.

The STAS concept, developed by the author in 1995, has created considerable interest from advertising practitioners and theorists. STAS uses electronic single source data to capture purchases in households immediately following exposure to brand advertising. The index is calculated as a percentage of purchases among households exposed to advertising divided by the percentage of households not exposed to advertising. It should be noted that although the STAS index initially attracted criticism, it has since gained widespread credibility (Butterfield, 2002; Hansen and Olsen, 2002).

The book itself engages in a lively and passionate debate with early critics of STAS.

The Ultimate Secrets of Advertising expands Jones' prior analysis of single source data to cover six countries and accounts for 340 brands. This provides a significant sample from which generalizations can reasonably be made. Successful brands – those with high market share – also have correspondingly high STAS scores. Accordingly, the STAS index is a robust measure of an advertising campaign's innate strength.

The elegance of the STAS index is that it can be used to discriminate between strong and weak campaigns, within weeks of campaign launch. The STAS index provides a simple benchmark against which any campaign can be evaluated. Brands generating high STAS scores are successful and should be allowed to "pass through the gate." Brands with a mid range STAS should be investigated further. In the event that STAS falls below a given level, the campaign "should not be allowed to pass through the gate." The practical value of STAS is clear. Given that advertisers have access to single source survey data, it is a relatively easy task to calculate STAS and pinpoint campaigns with potential.

Medium-Term Advertising Effects

In competitive markets, not only must advertisers evaluate a campaign's merits, but they must also consider how to keep the brand in the consumer's vision. Methods for measuring a campaign's ongoing currency in the medium term are the subject the third section.

Chapters four and five investigate the interactions between market growth and a range of additional variables including STAS, advertising intensity, promotional intensity and continuity. Data taken from ARS (Advertising Research System) are combined with several case studies of branded goods to provide the empirical support. Findings show that brands with average growth are not influenced by promotional intensity or advertising intensity when STAS is low. On the other hand, brands with strong creative, as estimated by the STAS index, benefit from increased investment in advertising. The centrality of the STAS index in predicting growth suggests that medium-term advertising effects represent the cumulative result of short-term effects.

Chapter five in this section addresses the issue of continuity. In it, Jones enters the recency versus effective frequency debate. The book is worth reading for this chapter alone. Amassing an array of both empirical data

and secondary sources, Jones demolishes the long-held merits of flighted campaigns. Highlighting the amount of waste involved in traditional approaches to media planning, Jones offers a simple and compelling case for recency. The message is clear: for low involvement goods, a single weekly exposure is optimal.

Long-Term Advertising Effects

The final gate for campaigns is that they must be capable of building brands in the long term. The interaction between advertising and brand equity is the subject of the final section. This is the longest, most complex and arguably the most exploratory of the four sections because of its brand equity approach.

Long-term effects, defined as those effects measured over more than one year, are the most difficult to measure. According to the author, long-term effects take the form of brand enrichment, which in turn can be measured via the depth and breadth of a brand's relationship with consumers. Six different measures are developed to investigate the interaction between advertising and both brand penetration and brand loyalty. A number of measures, such as share of requirements are unique to this book. Collectively, the data show that strong brands have benefited from the legacy of past advertising that in turn affords a modest buffer against competitive activity.

Jones' insightful interpretations produce some surprising conclusions. For instance, strong brands consistently under-invest in advertising; an idea that leads to recommendations about the optimal advertising-to-market-share ratio. This type of ratio is just one of Jones' many big ideas with immediate practical application. Advertisers can use this ratio to establish safe yet minimal levels of advertising investment.

Contribution to the Literature

This work is part of Jones' ongoing, programmatic research into advertising effectiveness. It synthesizes a vast body of literature in fields as diverse as branding, consumer response models, competitive theory and customer loyalty while making a substantial original contribution to the study of advertising effectiveness. This book is arguably the most strategic of Jones' contributions to date, offering theorists and practitioners many useful guidelines for allocating budgets in order to achieve desired competitive outcomes. It deserves to be taken seriously and should become essential reading for both advertising practitioners and scholars alike.

The case that advertising can produce demonstrable sales effects in the short term is compelling and is supported with a vast array of data tables and detailed analysis. The inclusion of long term advertising effects is a welcome addition to Jones' now substantial contribution to advertising effectiveness and will no doubt stimulate further debate in the same way that his STAS score did in the mid 1990s. Much of the data used in the work is proprietary and has not been published previously. The sheer volume of quantitative information – 128 figures and tables in its 215 pages - does not make for light reading. However, Jones' clarity of expression combined with his single-minded purpose more than compensates for the volume of quantitative information.

The book is a specialist study of advertising effectiveness in the context of low involvement purchases. The extent to which findings can be generalized to high involvement goods is not canvassed in this book, an oversight that some readers may find disappointing.

Suitability for Target Audiences

As a textbook, *Ultimate Secrets* is not an ideal choice for generalist advertising programs. The focus on low involvement goods, combined with the introduction of some controversial ideas, means this book needs to be read in the context of a wider body of literature. Alert readers will readily recognize that the gatekeeper model applies to fast moving consumer goods. Undergraduate students, so often in search of quick solutions with universal applications, may not always recognize the model's limitations. For specialist postgraduate programs on advertising effectiveness, this book may be worth considering.

For advertising practitioners and academic audiences, the book is well worth reading. Practitioners will welcome the simple decision rules that can be applied immediately using data that is readily available to them. For scholars in advertising, media and general marketing, the book offers a radically different perspective to the problem of understanding and measuring advertising effectiveness. The clarity of its central argument combined with the weight of evidence make compelling reading.

References

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Bronwyn Higgs
Victoria University
Melbourne