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Art Weinstein^a

^a Marketing Department, Nova Southeastern University, Fort Lauderdale, FL, USA

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Segmenting B2B technology markets via psychographics: an exploratory study

Art Weinstein*

Marketing Department, Nova Southeastern University, Fort Lauderdale, FL, USA

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This article examines how marketing executives employ psychographics as part of their target marketing strategy in business technology markets. In spite of the increased attention in the recent business-to-business segmentation literature, psychographics is not used as a major segmentation dimension (only one in five companies used this base). Psychographic thinking without formal analysis, however, was a commonly used strategy evidenced by 59% of the companies. While there was no difference in target marketing success found between formal and informal psychographics, both approaches fared significantly better than firms not bringing a psychographic mindset to their segmentation strategy. Firmographic and demographic variables did not impact the use of organizational psychographics. Motivation, relationship and risk variables were used by marketing managers as psychographic inputs. Implications for management practice and a research agenda for segmentation scholars are presented.

Keywords: segmentation; psychographics; firmographics; target marketing; business markets; technology companies

Introduction

According to Kotler and Keller (2010), the formula *segmentation, targeting and positioning* (STP) is the starting point for value creation and the essence of strategic marketing. As an example, four high-tech segments were found in researching the mobile professional market via a value-added analysis – specialized solutions, customized solutions, value solutions and packaged solutions (Dunn, Hulak, & White, 1999).

Kotler (2003) adds, ‘all markets consist of segments and niches.’ Success results from the best prospects for an organization’s goods or services – its target markets. Building on Darwinian theory, parallels between biological competition and business competition have been drawn. Just as no two species can coexist if they make their living in the identical way, firms that offer the same products, in the same territory, under the same conditions, with the same clientele cannot coexist equally. Eventually, one will dominate (Darwin, 1859; Henderson, 1989).

Psychographics has captured the imagination of consumer marketers as a segmentation dimension (Piirto, 1991). In consumer markets, it is often used to differentiate target markets and provide an overall basis for promotional strategy via personality traits or lifestyles (also known as AIOs, for activities, interests and opinions). Research on business psychographics is less clear and limited. Hence, the purpose of this article is to critically examine the use and success of organizational psychographics as a segmentation dimension from the perspective of marketing executives in technology companies.

*Email: art@nova.edu

Background – defining psychographics

In a seminal work, Wells (1975) defined psychographics as ‘quantitative research intended to place consumers on psychological – as distinguished from demographic – dimensions’ (p. 197).

Demby (1989) offered a comprehensive definition of psychographics stating it is ‘the use of psychological, sociological, and anthropological factors, self-concept and lifestyle to determine how the market is segmented by the propensity of groups within their market – and their reasons – to make a particular decision about a product, person or ideology.’ McDonald and Dunbar (2005, p. 158) explain that psychographics is ‘a customer’s inner feelings and predisposition to behave in certain ways.’ They add that marketers should view psychographics as a contributor to a successful segmentation project.

From a business marketing perspective, the use of psychographics is largely a conceptual issue with limited evidence of widespread adoption by organizations (Kenney & Weinstein, 2010). Organizational psychographics, however, can provide a strategic competitive edge. For example, Sportmed sells medical instruments and supplies to physicians who practice sports medicine – the treatment of sports-related injuries. Two psychographic segments emerged from a research study (Cleland & Bruno, 1996). Progressives were early adopters of new technology and willing to ‘pay up’ for the competitive edge this equipment gave them in their medical practice. Traditionals were more cautious customers who waited to adopt new technology until it had been broadly accepted in the market; they were willing to forego possible competitive advantage in their medical practice and believe in ‘playing it safe.’

Barry and Weinstein (2009, pp. 318–319) defined business psychographics as

the segmentation of organizational buyers into homogenous clusters of mindsets and behaviors that are distinguished by motives, risk perceptions and social interaction styles in order to identify prospects as well as predict the predispositions of the firm’s decision makers for the sake of adapting products, marketing messages and relational selling behaviors.

The authors build on Bonoma and Shapiro’s (1983) nested segmentation model; in fact, Plank (1985) calls this the most important multistep approach to segment business markets.

Bonoma and Shapiro’s (1983) five-ring process advocates a shift from observable and objective descriptions of a buyer’s industry (firmographics), operating variables and purchasing criteria to situational and psychometric segmentation variables. These latter two innermost rings have risen in importance given the recent business environment (B.P. Shapiro, Telephone interview conducted by S.V. Cates, September 19, 2002). Specifically, Barry and Weinstein (2009) examine the innermost ring of the nested model, buyers’ personal characteristics, which includes buyer–seller similarity, attitudes toward risk and loyalty to suppliers (Bonoma & Shapiro, 1983). Barry and Weinstein conclude that business psychographics consists of three major dimensions (motivation, risk and relationships) and eight variables, which comprise business-to-business (B2B) psychographics (see Figure 1). In the context of a case study for Citrix Systems, Weinstein (2011) identified 17 segmentation variables within a nested framework. Several of them – i.e., type of buyer, key benefits, perceived need for streaming, risk profile and innovation – had a strong psychographic component.

Business psychographics – recent research trends

Research on organizational segmentation has gained momentum as firms recognize its power in forging customer relationships (Weinstein, 2006). With heightened attention

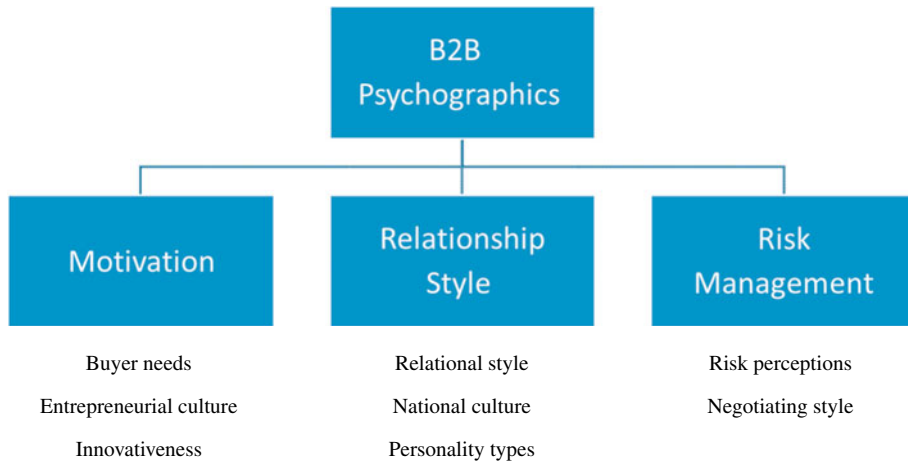


Figure 1. Business psychographics – conceptual model. *Source:* Adapted from Barry and Weinstein (2009).

given to personalization and relationship marketing, segmentation is a key marketing activity to create value-enhanced experiences that connect customers with brands. Clemons, Nunes, and Reilly (2010) call this ‘finding the sweet spot’ – which, in turn, is a strategy that leads to superior profitability.

Segmentation research can facilitate effective selling by adaptation to customer personality types. Recent trends toward segment-of-one marketing, customer loyalty initiatives, customer relationship management programs and web analytics advocate customers segmentation by profit potential (Kaushik, 2007; Peppers & Rogers, 2004).

These perspectives are further challenging the efficacy of geodemographic segmentation as it fails to capture the psychographics (motivations, relationship behaviors, corporate cultures, personalities, etc.) that differentiate customers into meaningful target markets. As a result, psychographic dimensions have surfaced in B2B selling strategies and marketing initiatives. The entertaining Mac versus PC promotional campaign is a brilliant illustration of a psychographic profile of the Apple customer.

In spite of the acknowledged usefulness of psychological segmentation in organizational settings, the formalization of marketing and operational plans around psychographic dimensions is infrequently utilized. While researchers and forward-thinking marketing executives are intrigued by the depth of personalities stemming from advanced research techniques, psychographic analysis is viewed as costly, subjective and difficult to measure. Given these shortcomings, many companies are opting for intuitive segmentation or ‘informal’ psychographics as a part of their strategic planning activities. Millier (2000) demonstrates how instinctual knowledge can yield testable segmentation matrices for a new aluminum alloy aimed at the automotive industry.

Further compounding the adoption of psychographics to organizational settings is the complexity of the buying center. Industrial market characteristics, for example, differ sharply from consumer markets (B2C) on several dimensions, which impact segmentation analysis and other strategic marketing decisions (Kotler & Keller, 2010). Not only are many individuals involved, but also special justifications, authorizations and approvals often restrict the influence of personality on buying decisions. The industrial salesperson is instead confronted with a more formula-driven buyer than is typically found in the

consumer sector. To simplify the decision process, DHL classifies buyers by personality type as factual, analytical or touchy-feely (Barry & Weinstein, 2009).

So, how far has business psychographics progressed from a segmentation theory to a real-world marketing practice? Robertson and Wind (1980) found that employing organizational psychographic variables improved the explained variance by more than 25% versus demographics alone. This finding is important because, as Wyner (2009) explains, the value of segmentation ‘should be based on its likelihood of achieving improved marketing and business performance.’

Bill Neal, the founder of SDR Consulting (Atlanta, Georgia, USA) and former president of the American Marketing Association explains, ‘Business managers have relearned the benefits of target marketing. Most marketers now recognize that simplistic segmentation schemes based on demographics, geography or SIC codes are suboptimal at best – and disastrous at worse’ (Neal, 2002, p. 37). Most B2B marketers, however, rely on firmographics and use psychographics infrequently (Frichol, 2009).

Few companies use segmentation as an effective strategic planning tool. Bossidy and Charan (2002) stated that less than 5% of the plans they have seen contained useful segmentation information. Most voluminous marketing plans devote a majority of their pages to review product features and promotional material but offer only a limited discussion of customer profiles, benefits sought and what is valued in business relationships. According to Yankelovich and Meer (2006), 59% of large companies commissioned a major segmentation study within the past two years but only 14% of the executives said they gained real value from them.

Also alarming is the erosion of customer segmentation as a leading business tool according to top executives. Bain & Company has conducted annual studies of the top 25 management tools for more than 20 years. Segmentation’s popularity as a strategic resource has fallen from a peak in 2006 when it was viewed as the third most important management tool to 7th in 2008 and 10th in 2010. In the 2012 study, it fell out of the top 10 ranking (Bain & Company, 2013).

Research questions

A major objective of market segmentation analysis is to find growth opportunities. As the above research indicates, it is apparent that there is an opportunity to improve in this area. Building on the brief overview of the literature, this empirical study queries B2B marketing executives about their perceptions of how well psychographics is used in technology companies. Technology markets are vital because of a transformation to an entrepreneurial, global and knowledge-based economy (Weinstein, Jin, & Barrett, 2013).

Below are the three major research questions that guide this investigation:

- Research Question 1.:* Are companies that formally use B2B psychographics more effective in target marketing success than companies that informally use B2B psychographics or companies that do not use B2B psychographics?
- Research Question 2a.:* Is there a significant relationship between firmographic variables (company size and industry sector) and the use of B2B psychographics?
- Research Question 2b.:* Is there a significant relationship between demographic variables (age, gender and years working in a marketing position) and the use of B2B psychographics?

Research Question 3.: Does the three-component conceptual model of B2B psychographics (buyer motivation, risk management behavior and buyer relationship style) explain how marketing managers use psychographics to segment markets?

Methodology

An email survey was used to collect data from marketing managers in business technology markets. The questionnaire was distributed via SurveyMonkey™ and data analyzed through SPSS 17.0. Industry sectors included computer hardware, software, electronics, semiconductors, pharmaceuticals, medical devices, communications, biotech, energy, manufacturing, media, information and research, and professional services.

While this work was exploratory in nature, validity was demonstrated. The research instrument measures what it intends to measure (this is also referred to as accuracy or truth). Content validity was assessed by having two marketing professors with expertise in segmentation research (major publications and work experience in this area) evaluate survey to ensure that it clearly specified the domain. From an external validity or generalizability perspective, the questionnaire was pretested in person with 14 marketing executives at five leading Silicon Valley companies – Infoblox, National Semiconductor, Sun Power, Symantec and Trend Micro. Two respected marketing practitioners, affiliated with the Business Marketing Association (BMA) of Northern California, assisted the researcher by facilitating these group in-depth interviews, which lasted from one to two hours. Based on these inputs, the questionnaire was refined, as needed.

Sampling plan and profile

A snowball sampling technique was employed to collect the data. According to Churchill (1995), snowball sampling is a judgment approach that is useful for sampling special populations (e.g., high-tech executives); it does, however, introduce a non-probabilistic sample bias. Given the exploratory nature of this research, this tradeoff was deemed acceptable.

Two hundred and fifty B2B technology marketers were contacted through personal networks, business advisory councils at the sponsoring university and members of professional organizations (BMA and AMA Marketing Strategy and LinkedIn special interest groups). Seventy marketing managers responded to the survey resulting in a 28% response rate.

As the sample profile in [Table 1](#) shows, three major sectors – technology, B2B/professional services and computer-related – accounted for 83% of the respondents (17% were in the medical/pharmaceutical business). Almost three in five (57%) of the participants worked for small companies, and the other 43% was split between medium-sized and large organizations. More than 80% of the respondents were male. Nearly half of the sample was 30–49-year-olds with the other half being 50 + (only 4% of the respondents were under 30). This reflects the experience level of the sample since two-thirds of the marketers worked 10 or more years in a marketing position.

Major findings

Research Question 1 (RQ1) assessed the effectiveness of psychographics as a B2B segmentation base. Psychographics was found to be a bottom-tier segmentation dimension

Table 1. Sample profile.

	%	n
A. Industry sector		
Technology	30	21
B2B/professional services	29	20
Computer-related	24	17
Medical/pharmaceutical	17	12
B. Company size		
Number of employees		
Small (<100)	57	40
Medium (100–499)	16	11
Large (500 +)	27	19
Annual revenues		
< \$25 million	60	42
\$25–\$500 million	14	10
> \$500 million	26	18
C. Gender		
Male	83	57
Female	17	12
D. Age		
< 30	4	3
30–49	49	34
50 +	46	32
E. Years in a marketing position		
3 or less	16	11
4–9	17	12
10 or more	67	47

ranking ninth of the nine B2B segmentation bases tested. Only 22% of marketing executives reported using this approach – usage rate (28%), buying situation (26%) and purchasing behavior (24%) fared slightly better. The five most popular B2B segmentation bases were application/end use (59%) and firmographics, geographics, benefits and value (all reporting 43% use). This represents a shift from Abratt's (1993) research that found geographics and firmographics as the top two industrial segmentation variables. The importance of application/end use segmentation is illustrated by this comment from a respondent:

We have customers that reside in a common vertical market but utilize different applications/end uses for our products. Thus, we do a lot of segmentation by vertical, overlaid with application. We could end up with multiple marketing programs to a common vertical. (Oil and gas transportation, small firm)

Although its use was quite limited, psychographics fared extremely well in target marketing success (this was defined as being 'successful' or 'very successful' in target marketing activities). Using an index = 1.00 (average), psychographics was rated as the most effective B2B segmentation base (1.24) ahead of purchasing behavior (1.10), value (1.08), firmographics (1.01) and usage rate (1.00). The challenge of incorporating behavioral business segmentation dimensions into the analysis is captured by this marketer's view:

It seems that only a distinct minority of enlightened firms have advanced beyond obvious segmentation criteria, few yet venturing into meaningful psychographics or the Holy Grail of value-based segmentation. (Management consulting, small firm)

While less than a quarter of the respondents stated that they use psychographics, 59% of the sample reported the use of psychographic thinking (without formal analysis) in their marketing strategy decisions. Typically, this was operationalized as analyzing buyer

Table 2. ANOVA – target marketing success by use of psychographics.

Source	Sum of squares	Degrees of freedom	Mean squares	F-test/p-value
Between groups	10.738	2	5.369	8.108/0.001
Within groups	44.366	67	0.662	
Total	55.103	69		
Groups	Count	Mean	SD	
Formal	15	3.92	0.954	
Informal	41	3.73	0.751	
Not used	14	2.82	0.835	
Total	70	3.59	0.893	

Note: Tukey's HSD test: 'Formal' and 'Informal' are significantly different from 'Not used' at the 0.05 level. Measure: How successful is your firm in targeting markets? (1 = unsuccessful to 5 = very successful).

Source: Weinstein (1998).

needs. One simple yet effective approach for incorporating intuitive analysis (informal psychographics) is explained:

We ask nice clients twice a year (we visit them) and ask why they use us or what do they need.
(Personalized printing, small firm)

As Table 2 shows, based on an ANOVA ($F = 8.108$, $p = 0.001$), it was found that the use of B2B psychographics impacts target marketing success. While there was no significant difference between formal and informal psychographics (means = 3.92 and 3.73, respectively), those not using any form of psychographics fared significantly worse (mean = 2.82) with respect to target marketing success.

RQ2 explored organizational (company size and industry sector) and personal demographics (age, gender and years in a marketing position) and the use of B2B psychographics. There were no significant differences evidenced among these variables. Qualitative analysis, however, revealed that computer-related and other technology businesses were less likely to use formal psychographic research than healthcare and professional services firms. Given an emphasis on product orientation rather than market orientation by many innovative, engineering-led high-tech companies, this is not unexpected. Consider this insightful comment from one participant in the study.

Market segmentation for B2B is just as important for companies marketing to consumers.
In this day and age 'one size fits all' will cost you market share, if not your entire market.
(Government services provider, medium-sized organization)

RQ3 supports the concept of the three-component model of B2B psychographics depicted in Figure 1 (Barry & Weinstein, 2009). All eight of the psychographic variables proposed were cited by the respondents and no additional business psychographic variables received more than a single mention. On average, business marketers employ 3.3 variables in their psychographic analyses – 1.3 motivation, 1.3 relationship style and 0.7 risk management variables. An example of how one company implements psychographic segmentation is stated:

We have a matrixed segmentation that looks at personality types on one axis and disease treatment on another. (Healthcare [diabetes products], large company)

Marketing implications – the value of B2B psychographics

Psychographics has the potential to be a powerful segmentation dimension in business and technology markets. While this issue has been receiving more attention in the academic

marketing literature, few practitioners have embraced the benefits of employing business psychographics in their segmentation analyses. The intuitive value of (informal) psychographics is clearly evident, however, as business marketers consider variables such as buyer needs, entrepreneurial and national culture, innovativeness, negotiation style, personality, relational style and risk in forming ad hoc customer segments and using this information to design marketing strategies.

Psychographics (formal and informal) can become an important part of business marketers' segmentation toolkits along with firmographics, geographics, application/end use, benefits, value and/or other dimensions. The relatively high costs of conducting such primary research have limited its widespread use in B2B markets. In this exploratory study, it was found that firms using business psychographics were 24% more successful than average in target marketing success. This is very encouraging and is consistent with Robertson and Wind's (1980) findings. With the mandate of accountability in marketing, it is imperative that marketing research vendors and corporate market researchers demonstrate the value of this marketing investment through projects and processes.

It is critical that the segmentation analyst get buy-in from management and the marketing team to make business psychographics a viable target marketing strategy (*Openview*, 2012). As a corporate education initiative, it is recommended that companies create segmentation champions, participate in industry seminars/webinars and pilot test small-scale segmentation research studies where the value of organizational psychographics can be readily demonstrated. Once positive results are attained, it is likely that the organization will want to strengthen its presence in this behavioral research arena.

As part of a marketing audit (Kotler, Gregor, & Rodgers, 1989), it is suggested that organizations objectively evaluate their level of segmentation sophistication and strive for strategic segmentation (Jenkins & McDonald, 1997) – i.e., a company rates high on both customer-driven and organizational integration dimensions. Dibb and Simkin's (2001) proposed that response to segmentation problems in infrastructure (prior to undertaking segmentation), procedures (during the segmentation process) and operations (facilitated segmentation implementation) can be enlightening in this evaluation.

Realize that experienced marketers often act as proxy information sources in lieu of formal psychographic analyses since they clearly understand the major motivational drivers of their customers. Companies that lack seasoned marketing managers are most likely to benefit from B2B psychographic research studies. Another lower cost option is the purchase of syndicated business psychographic information from such research vendors as SRI International (VALS), Yankelovich Monitor, University of Michigan's List of Values (LOV) and Forrester Research. For example, Forrester's technographic typology has been successfully applied in many service and technology markets.

Firms not using psychographic insights from either formal market segmentation studies or trained marketing executives were least effective in their target marketing efforts. Their lack of market orientation limits their success in understanding target markets and finding new niche opportunities. The adoption of behavioral segmentation perspectives can reward these organizations in increased customer focus and market performance.

Finally, while some organizations may opt to emphasize one area of business psychographics (motivation, risk aversion or relationship style), business marketers may fare best with a balanced approach featuring all three components of organizational psychographics to better understand their customer base.

Research agenda

The introduction of psychographics into the B2B segmentation plan can assist marketers design winning target marketing strategies. This analysis of technology markets represents a starting point in a proposed multiphase segmentation research study. Clearly, a lot of work remains to be done.

First, the role of business psychographics can be expanded beyond its traditional use in sales management (adaptive selling, account prioritization and resource allocation) and new product adoption. Note that a parallel exists in consumer markets where psychographics is known as a mainstay in advertising profiling. The realm of possibilities for B2B psychographics include but are not limited to market research applications (e.g., improving response rates or designing behavioral segmentation products for clients), field and online customer service enhancements, differentiated web sites, cost/value tradeoffs or price sensitivity studies, and creating and managing online communities/business social networks.

Second, the sample size should be increased. Highly targeted industry-specific mailing lists, panel data or involvement in practitioner-oriented trade conferences can be used to widen the scope of the study. This exploratory project was limited to US companies. Expanding the research to other industrialized markets (Canada, European Union or Japan) is a logical next step. This will likely necessitate the use of research collaborators from these regions.

Third, measurement and analytical improvements are advisable. As Dibb and Simkin (2010) note, segmentation effectiveness is challenging to measure because it includes 'hard' (statistical) and 'soft' (segment quality) measures. Foedermayr and Diamatopoulos (2008) add that segmentation effectiveness is difficult to capture and is often confused with marketing performance and success metrics. Based on the current study, measures should be refined for formal versus informal psychographics, business psychographic components (buyer motivation, risk management behavior and relationship style) and variables (see Figure 1) and target marketing success.

New relevant segmentation variables can be built into the research program. Canhoto, Clark, and Fennemore (2013) believe that social media may be useful in understanding organizational segmentation practices. Other suggestions include the types of market definitions employed – undifferentiated, differentiated, single segment concentration or segment-of-one; criteria for market selection; marketing activities used and success; technology factors and additional classification (firmographic) data. The proposed measure can add great insight into how marketing managers use psychographics in B2B technology markets.

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