

A method for the selection of appropriate business-to-business integrated marketing communications mixes

LAWRENCE L. GARBER JR AND MICHAEL J. DOTSON

Marketing Department, Appalachian State University, Boone, NC 28608, USA

Integrated marketing communications (IMC) are expressly conceived for appropriate communications strategy planning in the increasingly interactive, fragmented, cluttered and global communications environment that is today's market-place. To be effective, the aspect of the IMC model that is concerned with communication from the manufacturer or distributor to the consumer proposes that marketers must now more than ever ensure that the sum total of their marketing communications in all its forms be carefully coordinated so that they all speak collectively with one voice, thereby amplifying and reinforcing the core organizational or brand message. To date, however, most of the research emphasis on IMC has been devoted to consumer marketing. The purpose of this paper is to examine marketing managers' perceptions in the US trucking industry. Correspondence analysis was used for revealing associations between the promotional tools currently used in the US trucking industry and their specific communications function. The results suggest that US trucking managers link their deployment of respective promotional tools to the separate stages of the consumer choice process, as exemplified by the new product adoption model. The fact that the managers in this recently deregulated industry have come to deploy their promotional tools in such a manner implies that the new product adoption model may serve as a template for marketers looking for a guide for effectively selecting a complementary array of marketing communications tools.

KEYWORDS: Business-to-business marketing; correspondence analysis; hierarchy of effects in advertising; new product adoption model; pattern model

INTRODUCTION

In the fragmented, cluttered, global, dynamic, deregulated and unprecedented competitive environment that is today's market-place, a deliberate and comprehensive approach to the design of marketing communications is deemed crucial rather than advantageous (Schultz and Kitchen, 2000, p. 59; Shimp, 2000, p. 17). Integrated marketing communications (IMC) are advocated in an effort to help managers cope with these developments. The crux of IMC's approach is to coordinate all the components comprising an organization's marketing communications carefully in order to assure that they all speak collectively in one voice, thereby amplifying and reinforcing the core organizational or brand message (Wells *et al.*, 2000, p. 22; Payne and Holt, 2001).

Journal of Marketing Communications, ISSN 1352-7266 print/ISSN 1466-4445 online
© 2002 Taylor & Francis Ltd <http://www.tandf.co.uk/journals>
DOI: 10.1080/13527260110108300

Interest in such an integrated communications approach is increasing for five reasons. First, the ongoing fragmentation of mass media makes it more difficult to blanket a target audience with a simple set of promotional tools (Schultz and Kitchen, 2000, p. 161). Second, increasing competition has led to micro-marketing (Kotler and Armstrong, 1991, p. 222), which is also referred to as personal marketing (Moore, 1999; Pearson and Gessner, 1999; Bender, 2000) and mass customization (Ebenkamp 2000; Cotrill, 2001; Liechty *et al.*, 2001; *The Economist* 2001), in which ever-more narrowly and specifically defined consumer segments are being targeted. Third, the current emphasis on relationship marketing (Wells *et al.*, 2000, pp. 67–8), which refers to establishing a lifelong relationship with one's customers and suppliers, requires a more profoundly crafted type of communication that resonates with a deep understanding of the consumer and her or his needs (Shimp, 2000, p. 23; Wells *et al.*, 2000, p. 24). Fourth, a search for greater communications productivities is driving efforts at achieving more efficient marketing communications mixes (Low, 2000). Fifth, the growth of the Internet, which is a new communications medium that both complements and substitutes for traditional media, is forcing marketing managers to revise their promotional mixes (Low, 2000).

Marketing communications tools are not wholly interchangeable, i.e. they do not all accomplish precisely the same communications objectives and this complicates the effective implementation of an IMC plan (Shimp, 2000, p. 628; Wells *et al.*, 2000, p. 431). Moreover, they do not have the same or equal effects at every stage of the consumer purchase process (Aaker and Biel, 1993, pp. 1–3; Wells *et al.*, 2000, p. 75). For example, broadcast media such as television or radio are typically considered best for creating brand awareness and interest, while personal selling as an interactive but expensive medium (Shimp, 2000, p. 629) is often reserved for use when the client is close to making the purchase decision itself. Therefore, in order to influence the consumer at every stage in the consumer decision process effectively (Shimp, 2000, p. 19; Wells *et al.*, 2000, pp. 112–13), the marketer must conflate several communications tools in some complementary manner (Shimp, 2000, p. 21). Such a combination is called an IMC mix. The creation of an appropriate IMC mix requires that a decision maker has an understanding of the nature and relative strengths of every promotional tool at her or his disposal.

Although the formulation of an efficient and appropriate IMC mix can be difficult in today's fragmented markets, it was not that long ago when it was much simpler. At a time when mass markets were still easily accessible and labour costs were lower, advertising and personal selling could effectively serve as linchpins for a much simpler IMC mix (Schultz and Barnes, 1999, pp. 10–14). Historically, marketers could dominate information technologies in a manner that is now impossible, thereby controlling the marketing information that went to consumers, who, in turn, would spread that information among themselves (Schultz and Barnes, 1999, p. 12). Today, the changed marketing conditions mean that neither advertising nor personal selling alone can serve as a promotional panacea any longer. With the fragmentation of mass markets (Wells *et al.*, 2000, p. 23), advertising can no longer be assured of reaching large portions of the public and those few remaining venues that can assure such large audiences, such as the Super Bowl, have become very expensive. Further, although personal selling remains effective at all stages in the consumer purchase process, prohibitively high labour costs restrict its use to those circumstances where personal selling adds value beyond its promotional counterparts (McCarthy and Perreault, 1993).

Even though the need for more complex and carefully planned IMC mixes is now called for, there still remain barriers for the marketer to overcome in realizing this more sophisticated approach to marketing communications. Formerly, marketers have tended to manage each of the promotional tools at their disposal separately and were loathe to integrate them. According to Shimp (2000)

Liechty
convert.

↓
changed
in vehicles

... many organizations traditionally have treated advertising, sales promotions, point-of-purchase displays, and other communication tools as virtually separate practices. The reluctance to change is due to managerial parochialism and fears that change might lead to budget cutbacks in their areas of control (such as advertising) and reductions in their authority and power. Corporations' advertising agencies also have resisted change because of their reluctance to broaden their function beyond just advertising ... Integration requires tight coordination among all elements of a communications program. However, this can become complicated when different specialized services operate independently of one another and when the brand marketer's lack of careful organization impedes communication activities (p. 17).

Perhaps the greatest obstacle to integration is that few providers of marketing communication services have the far-ranging skills to plan and execute programs that cut across all major forms of marketing communications (p. 23).

The paper has two parts. It begins by examining the evolution of promotional practice in a selected business-to-business industry as it evolves from regulated to free market conditions in order to see whether standard marketing communications practice progresses towards a broader, more integrated format in this instance. The US trucking industry was selected because it has reached something of an adolescent phase in its adjustment to a deregulation that took place some 20 years ago in 1980 (for a review see Corsi *et al.* (1992)).

Such an interval of post-regulatory adjustment, as is seen in the US trucking industry, provides a natural experiment, the examination of which gives insight into how and why a particular set of communications conventions evolves. An unpremeditated shift under such conditions towards the development of a broader, more integrated marketing mix implemented by naive managers (as would reasonably be expected of managers habituated to a regulatory environment, as were the largely veteran US trucking managers during this period) would tend to support the perceived efficacy of IMC notions, since the underlying communications needs of a deregulated market are intrinsically more complex and dynamic. For example, the clients' essential information needs, for carrier comparison purposes, in the regulated US trucking industry were for available services, whereas in the deregulated US trucking industry they are for available services and price. Therefore, the adoption of IMC-like practices among managers who are being reactionary and unpremeditated in their approach would tend to provide support for the efficacy of IMC in actual business-to-business practice.

Second, the paper proposes the adaptation of the new product adoption model for serving as a normative template for guiding managers in the design and formulation of an appropriate IMC mix. The focus of this article is on tactics. Its purpose is to propose a method for the selection of an optimal marketing mix, in terms of both the number and types of promotional tools, to serve as a practical guide for managers.

THE MARKETING COMMUNICATIONS MIX

It has become critical that marketing communications cannily reflect a deep understanding of consumer needs in order to reach and influence today's consumer effectively. Therefore, a premium is placed on the careful crafting of a promotional message, both in terms of its informational content and in terms of how it is framed to appeal to some particular, typically narrowly defined, target audience (Wells *et al.*, 2000, p. 23). Moreover, this care must carry over to the selection of the communications tools that are used for conveying the marketer's message (a list of commonly found tools is provided in Table I), for this element of the communication process may also affect the receiver at any of several stages in the purchase process, including awareness, attention, comprehension, attitude or response (cf. Garber *et al.*, 2000).

Y.W. P. 17
 collect.
~~3~~
 C2 collect.
 Y.W. P. 23
 collect.

A more sophisticated approach to the design of the promotional mix is obviously called for in the ever-more demanding and complex competitive and communications environment, but is that reflected in actual promotional practice? Historically, promotional mixes began simply in most product categories (Schultz and Barnes, 1998, pp. 5-12). Marketers who were perhaps following an *ad hoc* approach to the development of promotional mixes only added to their promotional repertoire as the need arose. Such a time-consuming, trial and error approach to promotional development is no longer adequate. In order to succeed today, marketers must come close to optimal promotional mixes at the outset, taking a more deliberate and considered approach to marketing communications planning. Typically, such an approach requires a better understanding of the promotional tools available to the marketer and in particular a deeper understanding of the specific strengths and weaknesses of each of them, as they serve different purposes and are not all interchangeable.

Q22 this date should be 1999.

HIERARCHY OF EFFECTS MODELS

There has been considerable and long-standing interest in the use of hierarchical effects models for advertising planning from both practitioners and researchers (for reviews see Barry and Howard, 1990; Vakratsas and Ambler, 2000). Many variants of the hierarchy of effects model have been proposed in approximately the last 100 years, beginning with the AIDA model (awareness, interest, desire and action) in 1898 (Strong, 1925, p. 76), all of which are based on the notion that consumers respond to advertisement exposure in a sequence of stages. The advertiser may then design an advertising campaign specifically directed at influencing the consumer precisely at one or more of these stages (i.e. 'awareness advertising').

→ As per Q11.

The applicability of hierarchy of effects advertising models to IMC planning is intuitively obvious: to the degree that such models are efficacious in advertising planning, it might be expected that such models would be equally efficacious in the composition of a full marketing communications mix. This paper would argue that the efficacy of a hierarchy of effects approach would be compounded in its application to IMC planning because in the former case an advertising

13
1999 correct for Vakratsas & Ambler

TABLE 1. Promotional tools existing in the motor carrier industry

1. Billboard advertising
2. Telemarketing
3. Direct mail
4. Yellow Pages advertising
5. Personal sales visits
6. Advertising in trade journals inside the trucking industry, such as *Transport Topics*
7. Distributing goodwill gifts to clients
8. Radio advertising
9. Participation in trade shows
10. Reaching suppliers by e-mail
11. Advertising in newspapers
12. Television advertising
13. Advertising on the Internet
14. Advertising in trade journals outside the trucking industry, such as *Distribution*
15. Participation in charity events
16. Vehicle graphics (including but not limited to company name)

The sources for this list are referenced in the body of the text.

campaign tailored to influencing the consumer at a particular stage or stages in the marketing communications process is being planned, whereas in IMC planning a set of complementary promotional tools, each with its own strengths, is being tailored to collectively influencing the consumer at each and all stages of the marketing communications process. Taking a decompositional approach to understanding the marketing communications process fits neatly with the process of planning and composing an integrated marketing communications mix.

THE INDIVIDUAL-LEVEL ADOPTION MODEL

Having advocated the use of hierarchy of effects models for IMC planning, of which there are many, in the previous section the paper now proposes the use of one in particular, the new product adoption model. Although strictly speaking the new product adoption model is not conceived to be a model of communication or promotional planning (i.e. see Rogers, 1983), its relationship to such models is clear and has been noted before (cf. McCarthy and Perreault, 1993, pp. 220-1 and 425-6). To the authors' knowledge, however, the actual application of the new product adoption model as a tool for communications and promotional planning has not been proposed heretofore.

The new product adoption model was conceived for explaining how the consumer comes to accept (or reject) new ideas and products. Its fit with the AIDA model and other hierarchy of effects models is clear upon inspection (for example, note exhibit 15-6 in McCarthy and Perreault (1993, p. 425), which maps the promotional objective onto the stages of the adoption model and the AIDA model in order to illustrate their interrelationships) in that they are all 'action-oriented', staged models of individual consumer behaviour. For example, the new product adoption model consists of six stages (awareness, interest, evaluation, trial, decision and confirmation) that lead the consumer to the point of adopting a new product for regular use. Its relationship with hierarchy of effects advertising models is due to the fact that its six stages incorporate processes that are normally associated with the promotional function (i.e. informing, persuading and reminding).

It is felt that the new product adoption model holds advantages over hierarchy of effects advertising models for IMC planning purposes because its six stages span all the stages of the dedicated hierarchy of effects advertising models fully. For example, see Table 2, which is taken from McCarthy and Perreault (1993, p. 425) and which relates the four stages of the AIDA model (Strong, 1925) with the five stages of the new product adoption model, as well as in the context of the three promotional objectives that those authors highlighted and discussed. A key difference in the two is that the adoption model considers stages beyond the purchase occasion itself, which is referred to as action in the AIDA model, thereby making the adoption model not only more detailed but also more comprehensive.

The new product adoption model is therefore, in effect, a fully specified hierarchy of effects advertising model, once again spanning the stages of all other such advertising models. Just as IMC planning is a broader conceptualization of advertising planning, the new product adoption model is advantageous as a general form of the new hierarchy of effects advertising model.

Its applicability to established products can be realized by the marketer going through the analytical exercise of determining which of its stages are or are not germane to the promotion of the brand at hand (i.e. there is no need to influence the awareness stage of a brand that has already achieved high levels of awareness or no need to develop a communications programme for supporting an elaborate evaluation stage if the consumer purchase process is typically low involvement). Moreover, the thought problem posed by fitting the new product adoption 'template' to a given brand/category may aid in the full conception of an appropriate marketing mix.

In spite of this obvious potential, there is little theory or empirical research supporting the

TABLE 2. Relation of the promotional objectives, adoption process and AIDA model

Promotion objectives	New product adoption model	AIDA model
	Awareness	Attention
	↓	↓
Informing	Interest	Interest
↓	↓	↓
Persuading	Evaluation	↓
↓	↓	Desire
Reminding	Trial	↓
	↓	Action
	Adoption	

Table adapted from McCarthy and Perreault (1993, p. 425).

hypothesized relationship between the adoption model and its application to the development of an appropriate promotional mix. It is therefore proposed to begin this research by first examining current promotional practice in one industry, the recently deregulated motor carrier industry, in order to determine whether current deployment of the promotional tools extant therein conforms to what the adoption model would suggest.

The consumer adoption process has been heavily researched in marketing, primarily in order to understand how an innovative new product may be introduced successfully. Based upon communications research that explains how people accept novel ideas (Rogers, 1983; Rogers *et al.*, 1988), these theories were applied to the modelling of how new products diffuse throughout a market (cf. Bass, 1969, 1980). Gagnon and Robertson (1985) summarized diffusion theory and its effects on consumer behaviour in the following manner.

One of the more widely used theories of communication is diffusion theory. The diffusion literature has developed across a number of disciplines and has been of value in explaining the flow of information, ideas, practices, products, and services within and across cultures and subcultures, or markets and market segments. Diffusion's theoretical roots can be found in rural sociology (Rogers, 1983), geography (Brown, 1981), medical sociology (Coleman *et al.*, 1957), cultural anthropology (Barnett, 1953), and industrial economics (Mansfield, 1961).

As a theory of communications, diffusion theory's special focus is on interpersonal communications within social systems. The process of personal influence is seen to mediate mass media effects, and individuals are shown to have different propensities for relying on mass media or personal channels. This is particularly true by adoption category, from innovators to laggards. Personal influence is also a key factor accounting for the speed and shape of the diffusion process.

The diffusion perspective was introduced to the emerging consumer behavior literature in the mid-1960s (Arndt, 1967; Frank *et al.*, 1964; King, 1963; Robertson, 1967; Silk, 1966). In the ensuing years, consumer behavior scholars have contributed to the cumulative development of diffusion theory, but the conceptual impact has been somewhat limited (p. XXX).

A proposition of the diffusion model is that, at an individual level, consumers go through a series of stages of acceptance in the process of adopting a new product. According to Rogers (1983), as described by Kotler and Armstrong (1991, p. 158), they are as follows.

- (1) Awareness: the individual becomes cognizant of the innovation, but lacks information about it.
- (2) Interest: the individual is stimulated to seek information about the innovation.
- (3) Evaluation: the individual considers whether it would make sense to try the innovation.
- (4) Trial: the individual tries the innovation on a small scale in order to improve their estimate of its use.
- (5) Adoption: the individual decides to make full and regular use of the innovation.

An empirical study that examines current marketing communications practice in the US trucking industry, deregulated recently enough such that its evolution toward current practice can be clearly documented, will be presented in the following two sections in order to see how well it fits with the patterns suggested by the adoption model. This research examines current practice and marketers' attitudes in the US trucking industry based on a survey of marketing managers in that industry in order to gauge once again how current practice confirms the logic of the individual-level adoption model, but also to seek to understand why current IMC mix practice in one industry is the way it is.

BUSINESS-TO-BUSINESS MARKETING

Before the paper examines IMC practice in one particular business-to-business industry, it is useful to first review marketing practice in the business-to-business sector in general. When compared to business-to-consumer relationships, business-to-business customers behave differently, are motivated by different things and buy differently (Greenglass, 2000). When commenting on business-to-business services, Cooper and Jackson (1988) suggested that such relationships are characterized by a more rational buying process (referring to use-maximizing behaviour; for an explanation, see Mansfield (1979, pp. 50-1)), longer term relationships, greater product complexity, larger amounts of money being exchanged, greater use of group decision making and the design of customized service mixes unique to the particular organization. It has further been suggested that the business-to-business exchange differs from the business-to-consumer exchange because business buyers are not spending their own money and are therefore accountable to the organization for their purchase outcomes. Because of this, business buyers are particularly wary of taking chances with an unknown product or service (Rieck, 2000).

In comparing the content of business-to-business and business-to-consumer services, Turley and Kelley (1997) not surprisingly found that rational advertising appeals were more frequently used in business-to-business advertising. Quality and price have been found to be particularly strong influences in business-to-business buying (Dobler and Burt, 1996) and, therefore, are likely to play a strong role in business-to-business promotions. Similarly, Westbrook (1995) suggested that the three top attributes that are likely to influence a business-to-business exchange are responsiveness, competence and reliability.

While traditional advertising and personal selling remain a part of the business-to-business promotions mix, major increases are occurring in the use of telemarketing and database marketing for moving products or services from one business to another (Freeman, 1998). Business-to-business marketers are also taking advantage of the Internet. Four of North America's largest railroads, Union Pacific, CSX, Norfolk Southern and Canadian Pacific, have recently provided funding for Arzoon.com, which allows shippers to use the site for tendering shipments to a pre-selected group of carriers (*Chemical Week*, 2000). *Steel Times International* (2000) estimated that sales

Yes, 1997
is correct

36
Yes, 1995
is correct

Yes,
2000 is
correct.

of steel via the Internet will grow from a negligible amount in 1999 to as much as 200 billion in 2010. ^{dollars}

Although the majority of research in IMC practice is devoted to the consumer sector, there is some evidence to suggest that the adoption of IMC practice may be greater in the business-to-business sector (MacArthur and Griffin, 1997). This paper therefore addresses IMC's application to the business-to-business sector. It was felt that such research is particularly important given the aforementioned differences in business-to-business promotion relative to consumer promotion and the evident changes to marketing communications practice within the business-to-business sector that are clearly taking place.

METHOD

In order to try to understand the reasons for some current deployment of a set of marketing communications tools in an industry better, this research undertook a survey of marketing managers in one industry, the motor carrier industry, in order to uncover both their current marketing communications practices collectively and their attitudes towards those practices and towards competition in their industry in general.

Selection of the motor carrier industry

The motor carrier industry provided something of a natural experiment for these purposes for several reasons. First, the industry was deregulated 20 years ago, which provides a relatively recent known point in time from which current practice has evolved in a relatively accelerated manner. Second, the development of marketing communications practice in the intervening period has been examined assiduously and documented copiously in the academic and practitioner literature, so it is a known commodity.

Third, the motor carrier industry serves as a prototype for those industries in which marketing communications practices have evolved from simpler times and in which one promotional tool, in this case personal selling, served as the linchpin for all promotional activity and served all communications functions at once, to a time when competition is forcing a more sophisticated and elaborate development of the marketing communications mix. It can be known definitively that, in this industry, the movement towards a true IMC approach is derived from an *ad hoc* trial and error process. It is also known from the survey (as reported in MacLeod *et al.*, 1999) that a large proportion of the marketers currently practising in that industry have held tenure for all or a large proportion of the period stemming from deregulation and whose knowledge and practice have evolved with the industry. Therefore, if the resulting deployment of IMC tools in this industry conforms to the pattern of the adoption model, it would provide support for the notion that starting with the adoption model in a more deliberate formulation process would be salutary.

Pattern model

In this section the paper describes the approach and its rationale for how the latter subset was examined in order to see how the pattern it revealed compares to the pattern established by the steps of the adoption model. An explanatory model that is appropriate to such an inquiry is the pattern model, the parameters of which are applied here.

In this study, the research sought to understand the reasons for the current standard deployment of promotional tools across a number of product categories by seeking to fit current patterns of

marketing communications tool deployment to a known pattern, namely the steps of the individual adoption model. Such a case of explanation lends itself readily to analysis using the pattern model. As reported in Hunt (1983, p. 99), Kaplan (1964) defined and discussed the pattern model as follows:

Very roughly, [in the pattern model] we know the reason for something when we can fit it into a known pattern . . . something is explained when it is so related to a set of other elements that together they constitute a unified system. We understand something by identifying it as a specific part in an organized whole . . . in the pattern model we explain by instituting or discovering relations . . . These relations may be of various different sorts: causal, purposive, mathematical, and perhaps basic types, as well as various combinations and derivatives of these. The particular relations that hold constitute a pattern, and an element is explained by being shown to occupy the place it does occupy in the pattern . . .

The perception that everything is just where it should be to complete the pattern is what gives us the intellectual satisfaction, the sense of closure, all the more satisfying because it was preceded by the tensions of ambiguity (pp. 332-5).

The pattern model was seen by Kaplan (1964) to 'more easily fit explanations in early stages of inquiry' (p. 332) and, as such, is conceptually linked to that class of empirical research methods known for performing exploratory data analysis.

One such exploratory method that lends itself particularly well to the comparison (by visual inspection) of overall patterns in data is perceptual mapping, which is a collective term that is attributable to a set of techniques capable of presenting statistical data in graphic form and which is commonly used in marketing for relating a set of competitor brands to a set of product performance attributes for the purposes of comparing and contrasting their respective brand performance profiles.

Similarly, in this research this paper is trying to match the pattern of or correspondence between two sets of data points, namely a set of marketing communications tools, with the steps in the individual adoption model, so a form of perceptual mapping that permits the overlay of joint spaces with a common geometry is necessitated. Further, the chosen technique must be able to accommodate categorical data. One technique that matches these criteria is correspondence analysis.

Correspondence analysis

Hoffman and Franke (1986) studied correspondence analysis and defined it as '... a multivariate descriptive statistical method that represents graphically the rows and columns of a categorical data matrix in the same low-dimensional space' (p. 213). These authors described it in words that made its appropriateness as an empirical technique for operationalizing the pattern model of explanation in this study clear.

Marketing researchers often need to detect and interpret relationships among the variables in a rectangular data matrix . . . In correspondence analysis numerical scores are assigned to the rows and columns of a data matrix so as to maximize their interrelationship. The scores are in corresponding units, allowing all the variables to be plotted in the same space for ease of interpretation. This representation then can be used to reveal the structure and patterns inherent in the data . . . The multivariate nature of correspondence analysis can reveal relationships that would not be detected in a series of pairwise comparisons of variables. Correspondence analysis also helps to show *how* variables are related, not just that a relationship exists. The joint graphical display obtained from a correspondence analysis can help in detecting structural relationships among the variable categories . . . A distinct advantage of

changes
all ok.

correspondence analysis over other methods yielding joint graphical displays is that it produces two *dual* displays whose row and column geometries have similar interpretations, facilitating analysis and detection of relationships (Hoffman and Franke, 1986, p. 213).

Correspondence analysis was used for presenting the results graphically. Correspondence analysis offers additional advantages given the particular nature of this study. First is its ability to handle very large data sets (Lebart *et al.*, 1984), which was the case with this study: the respondents were evaluating a relatively large number of marketing communications tools (16) in terms of the five stages of the new product adoption model, thereby leading to 80 pieces of information obtained from each respondent.

A second advantage of correspondence analysis is its ease of data collection (i.e. the ease and simplicity of the respondent task), which is important when asking subjects to evaluate a large number of stimuli, as was the case here. With correspondence analysis respondents are simply required to 'check off' those marketing communications tools that they would associate with a particular communications function and these are presented in one large matrix on one page of a pencil and paper survey, a task that, experience has shown, respondents find quick and easy to do. Alternative techniques yielding joint graphical displays (cf. multidimensional scaling and unfolding, discriminant analysis, canonical correlation analysis, factor analysis and principal components analysis) start with rating data. Rating data entails a respondent task that is more time-consuming and more cognitively demanding than the simple associations task that correspondence analysis permits, dealing as it does with a lower order of data as input. Therefore, correspondence analysis was selected for this study due to its ability to treat categorical data and produce dual displays facilitating the researchers' ability to search out and compare overall patterns in two interrelated sets of data.

- Hoffman & Franke is correct reference.
- The italics is in the original.

The survey

Nine hundred and eighty surveys were mailed to the marketing managers of motor carriers in the USA in the autumn of 1997. Parts of the data collected provided for a detailed examination of marketing managers' current promotional practices in that industry, including their attitudes towards it and towards competition in their industry in general, as reported in MacLeod *et al.* (1999). Other parts of the data, which are not reported therein, permitted the authors of this study to examine the relationship between current marketing communications practice and the respective communications functions in which they are used and formed the basis of this study.

Motor carriers that were identified with annual revenues of greater than \$1 million according to American Business Lists, from whom the mailing list was acquired, were included in the mailing. The mailing consisted of a ten-page survey form, a cover letter signed by the authors stating the purpose of the survey and a stamped, self-addressed return envelope. One hundred and ninety-two usable surveys were received, which was a response rate of 19.8% with no follow-up.

The survey consisted of six parts. Parts A, B and F were germane to this study. Part A asked the marketing managers to report their knowledge and current use of the 16 promotional tools (which are listed in Table 1) now commonly used in the motor carrier industry (as collectively reported in Shrock and Stutts (1981), Burdick and Daley (1985), Cullen (1991) and Stephenson and Stank (1994) and in discussions with several motor carrier representatives in the region studied).

Part B asked the managers to report for which communications functions they used each of the marketing communications tools they employed. Another advantage of this study was that the

communications functions to which the subjects responded were framed as the steps of the individual-level new product adoption model, thereby eliminating the interpretive step in which the researchers assigned responses to the stages of the adoption model. In this study the subjects did this directly. Finally, part F was used for collecting information about the firm, the manager's work history and standard demographic data.

RESULTS

Table 3 provides a summary profile of the motor carrier marketing managers who participated in this study and the carriers that they represented. The marketing managers were predominantly between 30 and 60 years of age (84% of respondents), male (93% of respondents), educated (73% were college graduates) and experienced (79% had spent more than 10 years in the motor carrier industry, 48% had spent more than 10 years with their current firm and 32% had spent more than 10 years in their current position).

Figure 1 shows the first two principle axes in a correspondence analysis map that was generated using SIMCA (Greenacre, 1990). Each cell of the 16 × 5 frequency table that served as input to the procedure contained the number of times that a respondent linked a particular marketing communications tool with a particular communications function. The map that was generated shows marketing communications tools and marketing communications functions as points in a joint space. The physical proximity of a particular tool to a given function reveals its suitability for influencing that function, as perceived by motor carrier marketers.

The horizontal axis of the map in Fig. 1 is devoted to differentiating the stages of the adoption model. The two-dimensional solution was selected because the first two dimensions collectively accounted for 95% of the explained variance. The first primary (horizontal) axis accounted for 77% of the explained variance and served primarily to differentiate the stages of the new product adoption model and arrayed them in an order from left to right that perfectly reflected the temporal order in which they would normally occur within the individual consumer purchase process. This pattern, which is the result of perceptions having grown out of a trial and error learning process among motor carrier marketers, again supports the contention that the adoption model provides a proper template from which to begin to formulate an appropriate IMC mix in a more deliberate, planned manner.

All 16 of the marketing communications tools included in the survey are represented as separate points on the map in Fig. 1. For example, those tools generally thought of as mass communications tools, including billboards, radio, television, vehicle graphics, Yellow Pages advertising, newspaper advertising and advertising in trade and non-trade journals, are all clustered together on the left-hand side of the map close to the awareness stage of the adoption model, thereby indicating their strong association in actual use as perceived by motor carrier marketers. Most of these are positioned between the stages of awareness and interest, thereby indicating their relatively strong association with both of the early stages of the adoption model. The Internet and e-mail positions between the interest and evaluation stages in Fig. 1 indicate their perceived suitability for influencing those stages of the marketing communications function.

Interestingly, the later stages of the adoption model, namely trial and adoption, are differentiated on the map in Fig. 1 and they are in the proper temporal order. Furthermore, telemarketing and personal selling (which are aggregated together on the map in Fig. 1 under personal selling) are also differentiated here, with telemarketing more highly associated with gaining trial and personal selling itself more strongly associated with gaining adoption. Sales promotion is not commonly used in this industry and is therefore not included in this map.

TABLE 3. A brief profile of the marketing managers who participated in this study and the carriers they represented

Profiles	%
Personal profile	
Age	
<30 years	5
30-45 years	44
46-60 years	40
>60 years	9
Gender	
Female	6
Male	93
Education	
High school graduate	8
College	18
College graduate	50
Graduate school	12
Graduate degree	11
Years in carrier industry	
<1 year	2
1-3 years	4
4-10 years	15
>10 years	79
Years with current firm	
<1 year	5
1-3 years	17
4-10 years	29
>10 years	48
Years in current position	
<1 year	9
1-3 years	27
4-10 years	32
>10 years	32
Carrier profile	
Age of firm	
<4 years	0
4-10 years	5
11-25 years	27
>25 years	67
Number of sales representatives	
Less than five	57
Six to ten	12
Eleven to twenty-five	7
Twenty-six to fifty	5
More than 50	19
Carrier type	
LTL	24
TL	53
Both LTL and TL	23

for example, cut here

Yes, doubling up is fine. cut at any handling!

less-than truckload

Truckload

Firm's total annual revenue	
\$1-5 million	14
\$6-25 million	40
\$26-60 million	17
\$61-100 million	9
>\$100 million	18%

Those categories that add up to slightly less than 100% do so either because of rounding error or because a small number of respondents failed to respond to that question. Sample size = 192.

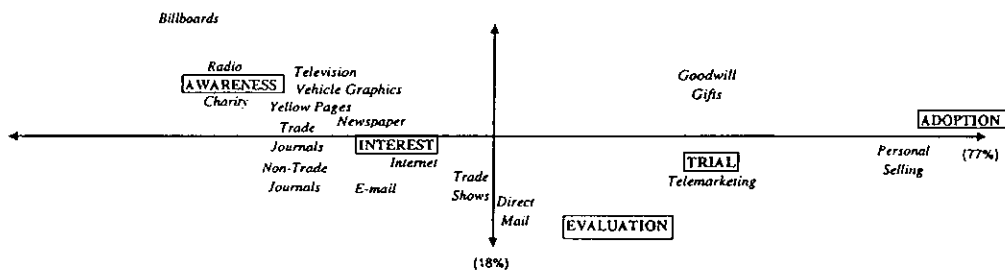


FIGURE 1. Motor carrier marketers' associations of communications tools with communications functions, with the latter represented as stages of the individual-level new product adoption model.

The vertical axis of the map, which accounts for 18% of the explained variance, serves to differentiate the evaluation stages from the other stages of the adoption model. Direct mail is relatively strongly associated with evaluation, as indicated by its relatively low position close to evaluation on the vertical axis and billboards and goodwill gifts are relatively strongly negatively associated with evaluation, as indicated by their relatively high positions on the vertical axis, relatively far from evaluation, although billboards and goodwill gifts are also positioned towards opposite anchors on either side of the horizontal axis (and, therefore, the need for representing this set of interrelationships on a secondary axis).

DISCUSSION

In summary, this paper argues for the use of the new product adoption model as a template and an aid for composing appropriate IMC mixes in general and, in particular, in business-to-business contexts, the latter having been studied less extensively than consumer markets. In examining the US trucking industry, which is a business-to-business industry, it was found that current practice matched specific marketing communications tools to those particular communications objectives for which they are deemed best suited as indicated by IMC protocols. The study's examination of the US trucking industry also revealed that current practice also matched specific marketing communications tools to those respective stages of the new product adoption model for which they are best suited, again as indicated by current IMC protocols.

These findings provide empirical evidence for the efficacy of an IMC approach in actual practice and for the use of the new product adoption model as a template for the formulation of an

appropriate marketing communications mix. This is considered to be so because the relatively complex IMC mixes that are evident today evolved over time from the much simpler patterns characteristic of regulated and, therefore, uncompetitive industries in general and evident in the US trucking industry prior to its 1980 deregulation. The survey research shows that today's US trucking marketing managers are a largely veteran group whose beginnings with the trucking industry generally predated deregulation, have little formal business education and whose standard marketing practices have therefore evolved through a need to adapt to a changing industry environment and were selected on an *ad hoc* basis according to which practices appeared to be effective at a given point in time. Evidence of such a naïve development leading to a standard practice that conforms to what is advocated by current IMC thought would, in the authors' view, indicate support for the efficacy of IMC practice and for the utility of the new product adoption model as a template.

Application of the new product adoption model to the marketing communications needs of established brands

Implicit in the formulation of the new product adoption model is the notion that, for any new product, the marketer must purposefully address the communications needs of consumers at every stage of the purchase process, without exception, in order to bring them successfully from unawareness of the product or service to adoption. This may not be the case with established products. For example, a product that already has high consumer awareness may not need to focus heavily on this stage of the purchase process, nor, for that matter, may trial be necessary for influencing directly with such a product. Why then is it felt that the individual-level new product adoption model may be efficacious as an IMC template for all products and services, new or established? The foremost reason is precisely because it is a full or comprehensive model, the perusal of which prompts managers to check and reconsider their strategies with respect to which stages may be de-emphasized. Second, any strategy that excludes one or another of the stages of the adoption model may be viewed as a reduced model that derives from it. Therefore, the full model may account for all contingencies or one or another of its reduced forms.

EXTENSIONS

Having provided herein a rationale for the use of the new product adoption model as a template for the formulation of appropriate IMC mixes, several useful extensions to this research are suggested. First, the current research was limited to the examination of just one business-to-business industry, namely the US trucking industry, in just one market, the USA. In order to assure that these results are generalizable, this research needs to be replicated in other business-to-business industries and other world markets.

Another limitation of this research is that managers' self-reports were its single measure of the efficacy of promotional tools. A follow-up study incorporating other effectiveness measures would broaden the scope of this line of inquiry and provide convergent validity. In addition, this research only examined the problem from the demand side of the equation. Further research measuring the effects of the IMC mix on the buyers of trucking services would bring a needed symmetry and another measure of convergent validity to an examination of effective business-to-business mixes.

Other useful future research would include a more general and, therefore, stronger test of the use of the new product adoption model as a template for the formulation of appropriate IMC mixes. The current research asked the respondents to evaluate the stages of the adoption model directly

by asking them to evaluate each of several promotional tools and their ability for influencing each of the stages of the model. A stronger test of its appropriateness would be to make no mention of the model or its stages, but to ask respondents more general questions about the communications uses of each of a number of promotional tools in order to see whether respondents might not re-create the new product adoption model or any staged advertising model 'spontaneously'.

In addition to research directed at generalizing the results of this current research, useful inquiries may be directed at uncovering the theoretical underpinnings of these effects. For example, there has been little theoretical or empirical support for the manner in which individual marketing communications tools are matched to those stages of the consumer purchase process that they are purported to most influence, nor has there been much research into the nature of that influence. Further research needs to be performed in order to determine the applicability of each promotion tool to each of the stages of the consumer purchase process as represented by the adoption model, particularly in today's dynamic marketing and communications environment where new communications technologies, changes to markets, changes to consumers and their interaction are transforming their respective effects.

Another important area that is deserving of inquiry is how the communication process may vary from one product or service category to another and how that may affect marketing communications mix decisions. For example, this research looked at the motor carrier industry, which is a fairly recently deregulated, business-to-business service category. Other examinations should be performed on consumer products and services of many kinds, as well as other business-to-business and service categories. One such set of product types that bears further examination includes convenience goods, shopping goods, specialty goods and unsought products. There is of course a wide array of service types. One obvious breakdown is consumer versus business-to-business services. This research examined one business-to-business service: others and the full range of consumer businesses also require study.

A final area that bears further examination is individual differences. There is considerable variance in the consumer purchase process between individuals. In particular, individual consumers vary greatly in terms of their acceptance of new products. How might this variance affect the applicability of the new product adoption level for marketing communications planning purposes, if at all? Since this paper is also advocating the application of the adoption model for marketing communications planning for established as well as new products and services, it is important to investigate the effects of new product introduction on established products.

ACKNOWLEDGEMENTS

The authors wish to thank Eva Hyatt, the editor and two anonymous reviewers for their helpful comments on this manuscript.

REFERENCES

- Aaker, D.A. and Biel, A.L. (1993) *Brand Equity and Advertising: Advertising's Role in Building Strong Brands*. Hillsdale, NJ: Lawrence Erlbaum.
- Arndt, J. (1967) Role of product-related conversations in the diffusion of a new product. *Journal of Marketing Research* 4, 291-5.
- Barnett, H.G. (1953) *Innovation: The Basis of Cultural Change*. New York: McGraw-Hill.
- Barry, T.E. and Howard, D.J. (1980) The relationship between diffusion rates, experience curves, and demand elasticities for consumer durable technological innovations. *Journal of Business* 53(2), 51-68.

Barry and Howard cited
on p. 4, "Hierarchy of
Effects models," and B.
213

- Barry, T.E. and Howard, D.J. (1990) A review and critique of the hierarchy of effects in advertising. *International Journal of Advertising* 9, 121-35.
- Bass, F.M. (1969) A new product growth model for consumer durables. *Management Science* 15(5), 215-27.
- Bass, F.M. (1980) The relationship between diffusion curves, experience curves, and demand elasticities for consumer durable technological innovations. *Journal of Business* 53, S51-7.
- Bender, P.U. (2000) Ask an expert: personal marketing for CAs. *CA Magazine* 133, 13.
- Brown, L.A. (1981) *Innovation Diffusion: A New Perspective*. New York: Methuen.
- Burdg, H.B. and Daley, J.M. (1985) Shallow-draft water transportation: marketing implications of user and carrier attribute perceptions. *Transportation Journal* 24, 55-67.
- Chemical Week* (2000) Setting B2B trails: transporters marry-up on-line. *Chemical Week* 62(9/20), 36.
- Coleman, J., Katz, E. and Menzel, H. (1957) The diffusion of an innovation among physicians. *Sociometry* 20, 253-70.
- Cooper, P.D. and Jackson, R.W. (1988) Applying a services marketing orientation to the individual services sector. *Journal of Services Marketing* 2(4), 67-70.
- Corsi, T.M., Grimm, C.M. and Feitler, J. (1992) The impact of deregulation on LTL motor carriers: size, structure and organization. *Transportation Journal* 32(2), 24-31.
- Cottrill (2001) Market of one. *Traffic World* 265, 14.
- Cullen, D. (1991) Good looks count. *Fleet Owner* June, 68-71.
- Dobler, D.W. and Burt, D.N. (1996) *Purchasing Supply and Management: Text and Cases*. New York: McGraw-Hill.
- Ebenkamp, B. (2000) An audience of one. *Brandweek* 41, B12-25.
- Frank, R.E., Massey, W.F. and Morrison, D.G. (1964) The determinants of innovative behavior with respect to a branded, frequently purchased food product. In L.G. Smith (ed.), *Proceedings of the American Marketing Association*. Chicago: American Marketing Association, pp. 312-23.
- Freeman, L. (1998) Net drives B-to-B to new highs worldwide. *Advertising Age's Business Marketing* 83, 1-2.
- Garber Jr, L.L., Burke, R.R. and Jones, J.M. (2000) *The Role of Package Appearance in Consumer Purchase Consideration and Choice*. Boston: Marketing Science Institute.
- Gatignon, H. and Robertson, T.S. (1985) A propositional inventory for new diffusion research. *Journal of Consumer Research* 11, 849-67.
- Greenacre, M. (1990) *SIMCA, Version 2, Personal Computer Software for Correspondence Analysis*. Irene, South Africa: Micheal J. Greenacre.
- Greenglass, C. (2000) The human element: how to make the transition from B-to-B. *Target Marketing* 23, 87-90.
- Hoffman, D.L. and Franke, G.R. (1986) Correspondence analysis: graphical representation of categorical data. *Journal of Marketing Research* XXIII, 213-27.
- Hunt, S.D. (1983) *Marketing Theory: The Philosophy of Marketing Science*. Homewood, IL: Richard D. Irwin, Inc.
- Kaplan, A. (1964) *The Conduct of Inquiry*. San Francisco: Chandler Publishing.
- King Jr, C.W. (1963) Fashion adoption: a rebuttal to the 'trickle down' theory. In S.A. Greyser (ed.), *Proceedings of the American Marketing Association*. Chicago: American Marketing Association, pp. 108-25.
- Kotler, P. and Armstrong, G. (1991) *Principles of Marketing*, 5th edn. Englewood Cliffs, NJ: Prentice-Hall.
- Lebart, L., Morineau, A. and Warwick, K.M. (1984) *Multivariate Descriptive Statistical Analysis: Correspondence Analysis and Related Techniques for Large Matrices*. New York: Wiley.
- Léichy, J., Ramaswamy, V. and Cohen, S.H. (2001) Choice menus for mass customization: an experimental approach for analyzing customer demand with an application to a web-based information service. *Journal of Marketing Research* 38, 183-96.
- Low, G.S. (2000) Correlates of integrated marketing communications. *Journal of Advertising* May, 27-39.
- MacArthur, D.N. and Griffin, T. (1997) A marketing management view of integrated marketing communications. *Journal of Advertising Research* 37, 19-27.
- McCarthy, E.J. and Perreault Jr, W.D. (1993) *Basic Marketing: A Global Managerial Approach*, 11th edn. Boston, MA: Irwin.

→ Page range is p. 13.

P. 36.

P. 14. The figs are unavailable.

unavailable

Yes, 1985
p. 101-102.

Yes, Greenacre the publisher

Yes, 1983
collect.

⓪

→ volume 40

Léichy ←

- MacLeod, M.D., Garber Jr, L.L., Dotson, M.J. and Chambers, T.M. (1999) The use of promotional tools in the motor carrier industry: an exploratory study. *Transportation Journal* 38, 42-56.
- Mansfield, E. (1961) Technical change and the rate of imitation. *Econometrica* 29, 741-66.
- Mansfield, E. (1979) *Microeconomics: Theory and Applications*, 3rd edn. New York: W.W. Norton & Co.
- Moore, S. (1999) Personal marketing: it's all about focus, determination and persistence. *The Canadian Manager* 24, 13-14.
- Payne, A. and Holt, S. (2001) Diagnosing customer value: integrating the value process and relationship marketing. *British Journal of Management* 12, 159-82.
- Pearson, M. and Gessner, G.H. (1999) Transactional segmentation to slow customer defections. *Marketing Management* 8, 16-23.
- Rieck, D. (2000) A shameless, heretical approach for business to business. *Direct Marketing* 63, 24-7.
- Robertson, T.S. (1967) Determinants of innovation behavior. In R. Moyer (ed.), *Proceedings of the American Marketing Association*. Chicago: American Marketing Association, pp. 328-32.
- Rogers, E.M. (1983) *Diffusion of Innovations*. New York: The Free Press of Glencoe.
- Rogers, E.M., Burdge, R.J., Korsching, P.F. and Donnenmeyer, J.F. (1988) *Social Change in Rural Societies: An Introduction to Rural Sociology*, 3rd edn. Englewood Cliffs, NJ.
- Schultz, D.E. and Barnes, B.E. (199X) *Strategic Brand Communication Campaigns*. Lincolnwood, IL: NTC Business Books.
- Schultz, D.E. and Kitchen, P.J. (2000) *Communicating Globally: An Integrated Marketing Approach*. Lincolnwood, IL: NTC Business Books.
- Shimp, T.A. (2000) *Advertising Promotion: Supplemental Aspects of Integrated Marketing Communication*, 5th edn. Orlando: Dryden Press.
- Shrock, D.L. and Stutts, M.A. (1981) A comparative analysis of carrier print advertising. *Transportation Journal* 20(1), 77-88.
- Silk, A.J. (1966) Overlap among self-designated opinion leaders: a study of selected dental products and services. *Journal of Marketing Research* 3, 255-9.
- Simpson, R. (1989) Sales promotion: withdrawal symptoms. *Marketing* February, 39-40.
- Steel Times International* (2000) Further growth expected in B2B e-commerce. *Steel Times International* 24, 2.
- Stephenson, F.J. and Stank, T.P. (1994) Truckload motor carrier profitability strategies. *Transportation Journal* 33(2), 5-17.
- Strong Jr, E.K. (1925) Theories of selling. *Journal of Applied Psychology* 9, 75-86.
- The Economist* (2001) Face value: a great leap, preferably forward. *The Economist* 358, 65.
- Turley, L.W. and Kelley, S.W. (1997) A comparison of advertising content: business to business versus consumer services. *Journal of Advertising* 26(4), 39-48.
- Vakratsas, D. and Ambler, T. (1999) How advertising works: what do we really know? *Journal of Marketing* 63, 26-43.
- Wells, W., Burnett, J. and Moriarty, S. (2000) *Advertising: Principles and Practice*, 5th edn. Upper Saddle River, NJ: Prentice Hall.
- Westbrook, K.W. (1995) Business to business service encounters: an empirical assessment of the underlying determinants for industrial service quality. In B.B. Stern and G.M. Zinkham (eds), *Enhancing Knowledge Development in Marketing*. Chicago: American Marketing Association, pp. 10-11.

BIOGRAPHIES

Lawrence L. Garber Jr gained his PhD at the University of North Carolina at Chapel Hill and is an associate professor of marketing at the John A. Walker College of Business, Appalachian State University, Boone, NC, USA.

Michael J. Dotson gained his PhD at Mississippi State University and is a professor of marketing at the John A. Walker College of Business, Appalachian State University, Boone, NC, USA.

yes, edita
collect.
Prentice
Hall
1999 is
collect
date
Collection
needed, p.
Delete
p. 2
yes.