

Integrating Web and Database Marketing: Australian Study of Direct Marketing Firms

Michael S. Lane

Department of Information Systems
University of Southern Queensland
Toowoomba, Australia
Email: lanem@usq.edu.au

Angèle L.M. Cavaye

Graduate College of Management
Southern Cross University
Coolangatta, Australia
Email: acavaye@scu.edu.au

The advent of web based electronic commerce has created numerous opportunities for marketing professionals to enhance current marketing practices by integrating the interactive nature of the web with database marketing. The challenge for IT professionals is to align IT with web site strategy in order to utilise the potential of the database marketing to enhance interaction and personalised communication with the customer. Three direct marketing firms were investigated to provide real insights into the integration of database marketing with the Internet and to compare current knowledge with practice.

Keywords: Web marketing strategies, web technologies, Database marketing, Strategic alignment on the web, Personalisation, Interactivity

INTRODUCTION

The Internet has made a remarkable impact within its first decade of commercial use. Marketing professionals have been quick to recognise the opportunities offered by the Internet. In particular they realised that business could be enhanced by integrating the Internet with direct marketing practices such as database marketing. The challenge for information systems professionals and practitioners is to realise these opportunities with the available technologies within the contextual constraints of an organisation.

This paper focuses on the IT issues facing practitioners integrating database/web marketing strategies with the Internet. For many organisations, the web is a relatively new medium which is still not fully understood and utilised as a marketing channel. A review of current knowledge included an investigation of web site strategies and the personalisation and interactivity possible with supporting web technologies. This paper reports on three direct marketing firms that have integrated database marketing practices with their web sites.

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First, this paper highlights the opportunities that the Internet has presented to marketing. Following that, current knowledge on web site strategies, personalisation and interactivity and the evolving nature of supporting web technologies is discussed. Next, the research issue and three cases are presented. The three cases in this study are analysed and the impact of their database/web marketing strategies is discussed. Finally, the paper concludes with remarks on the relevance of this study for research and practice.

THE OPPORTUNITIES FOR MARKETING ON THE INTERNET

Just as television advertising changed marketing theory and practice fifty years ago, the Internet is changing the discipline of marketing (Deighton, 1996). The growth in direct marketing, database marketing and the emergence of electronic commerce driven by the exponential growth of the Internet is requiring marketing to become more aligned with information technology. Marketing professionals applying mass marketing concepts and practices are taking advantage of the web by using information technology to become more customised and more responsive to the individual (Deighton, 1996). Since this paper is concerned with the alignment of IT with web/database marketing strategies on the Internet, the term 'database marketing' will now be defined.

Borrowing from the ideas of a number of authors (Blankenship and Breen, 1992; Bauer and Miglautsch, 1992; Shani and Chalasani, 1992), De Tienne and Thompson (1996) provide a comprehensive definition:

Database marketing is the process of systematically collecting, in electronic or optical form, data about past, current and/or potential customers, maintaining the integrity of the data by continually monitoring customers purchases and/or by inquiring about changing status and using data to formulate marketing strategy and foster personalised relationships with customers.

The Internet offers two major advantages over database marketing approaches using traditional marketing channels: *interactivity* and *personalisation*. The *interactive* nature of Internet communication allows the customer to control the dialogue between themselves and organisations (Smith, 1998). In terms of *personalisation* database marketing has the ability to segment markets down to the individual but in the past database marketing was restricted by the limitations of production and distribution of traditional broadcast and print media. The combination of the Internet, web list servers and relational databases has enabled marketeers to communicate one-to-one with customers. Although the general database marketing techniques used are the same, the richness of web media allows personalised interaction and communication not possible with traditional media. The web medium enables the capture and use of highly personalised information and, in turn, facilitates one-on-one marketing to the individual.

CURRENT KNOWLEDGE

In order to understand how the web can be used for direct marketing using database marketing techniques, web site strategies, personalisation and interactivity and the evolutionary nature of web technologies will be discussed.

Web site strategy

Web site strategy is set to become an important topic for firms wanting to engage in the marketing of goods and services on the web (Cragg, 1998) as web based Internet commerce seems set to alter marketing knowledge and practice.

Information intensity of products and/or services

The design of marketing web sites is influenced by the core market offerings of an organisation which in turn determines the sophistication of technology used and marketing functions that will be offered in a web site (Palmer and Griffith, 1998). Organisations can be categorised by their core offering into those which are information intensive and those which are less information intensive. The information intensity of a product or service refers to the amount of information that goes into the development of the product or service, the amount of information required by consumers to utilise the product or service, and the amount of information required across the value chain to develop the product or service. The information intensity of an organisation's core processes helps determine the appropriate use of information systems (Porter and Millar, 1985).

This same approach can be used in developing web sites by determining the marketing functionality and supporting technology needed for the information intensity of the product or service. High value added products or services with high information intensity will require sophisticated and customised virtual space(s); an example of high value added product is a computer or a software application. Conversely, low value added products or services (e.g. books or CDs) with low information intensity can suffice with a simple presence on the web. Organisations are developing their web sites from a marketing as well as technical standpoint (Palmer and Griffith, 1998) and the level of sophistication and customisation is determined by the core offering of the organisation.

Customer differentiation matrix

The customer differentiation matrix is a useful tool in identifying the best opportunities for database marketing over the Internet (see Figure 1). The four quadrants of the customer differentiation matrix are now discussed in more detail.

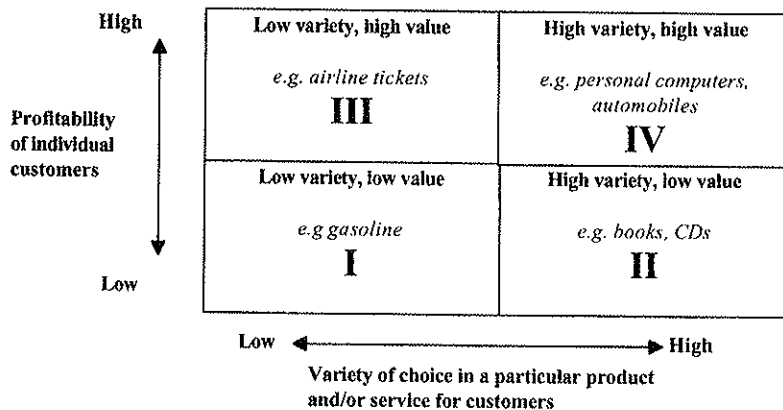


Figure 1: Customer Differentiation Matrix (Source: Adapted from Gillenson *et al*, 1999)

In *quadrant I* (low variety, low value), every customer wants the same things from a product and every customer purchases similar quantities (for example, gasoline). *Quadrant II* (high variety, low value) products and/or services are highly differential but customers purchase relatively similar amounts of a product (for example, books from a book-store). In *quadrant III*, every customer has same expectations of a product and/or service but individual customers differ greatly in the amount of product and/or service purchased (for example, airline tickets). Finally, in *quadrant IV*, customers

differ greatly in their wants of a product and/or service and the amount of product and/or service purchased (for example, personal computers).

The customer differentiation matrix highlights the value in identifying customers with preference for high variety and high value goods or services that are information intensive. The customer differentiation matrix is an analysis tool which is based on the individual behaviour of customers from an information perspective (Gillenson, Sherrell and Chen, 1999). There are two categories of data involved: (1) the variety of customer choice in a firm's products and/or services; and (2) the profitability of individual customers to the firm.

The customer differentiation matrix allows a firm to assess its customers base in terms of profitability and its core product/service offerings (Gillenson *et al*, 1999). The ability of a firm to identify the exact product a customer needs becomes more difficult as the variety of wants and needs of a customer increase. However, it is these customers in the fourth quadrant that are likely to be the most profitable. *Quadrant IV* exhibits the characteristics most conducive to database marketing over the Internet. By applying database marketing techniques firms can learn more about the wants and needs of individual customers, thus identifying the most profitable and loyal customers. From a strategic point of view, there are enormous benefits for firms that can find ways to increase the profitability of customers by moving their customer base to the fourth quadrant (high variety, high value).

Personalisation and Interactivity

The interactive business life cycle (see Figure 2) emphasises the need for personalised interactive electronic commerce with customers.

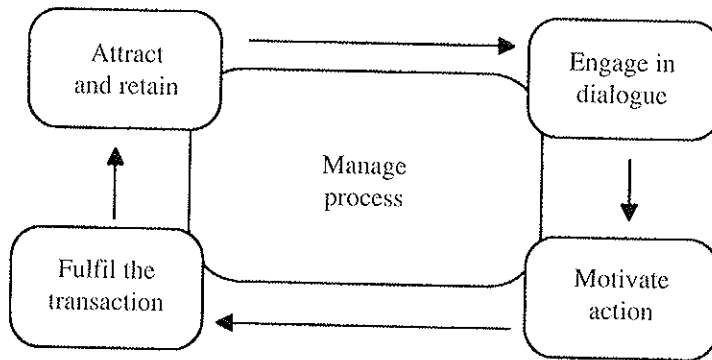


Figure 2: Interactive Business Life Cycle (Source: adopted from Leudi, 1998)

Each stage of business life cycle emphasises the need for an interactive and personalised experience for the customer (Leudi, 1998). Attracting and retaining customers requires personalised and compelling content coupled with a sense of community. Customers visiting a web site need to be engaged in a personalised dialogue in order to learn more about their immediate needs and to anticipate their future needs and requirements. The specific information gathered about each customer can be used to motivate customers by providing personalised incentives to move them from dialogue to a specific action such as purchasing. To fulfil transactions, secure and reliable support is required for all phases of a market transaction. Finally, the overall process needs to be managed by monitoring results and allowing dynamic changes to business rules to ensure the system is achieving business goals of an organisation.

In order to apply database marketing techniques over the Internet, a firm needs to attract customers to its web site. The attractors grid suggests increasing the personalisation and interactivity of a web site will increase its attractiveness to the customer (see Figure 3).

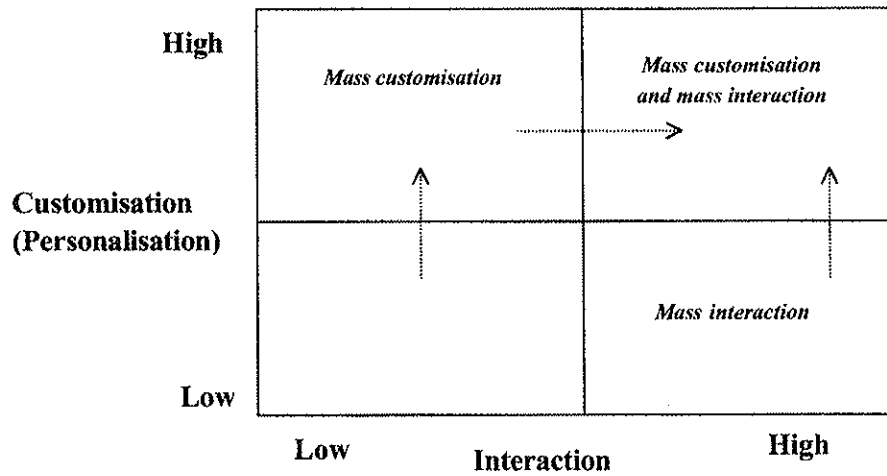


Figure 3: Attractors Grid (Source: adapted from Watson, Akselsen and Pitt, 1998)

Web sites have become more interactive and personalised as web strategies and supporting web technologies have evolved and matured. Products and services that are high in value and variety are more likely to be marketed in a highly personalised and interactive manner over the Internet. The customer differentiation matrix and attractors grid provide useful frameworks for applying database marketing techniques to the Internet.

Web technologies evolving to facilitate personalisation and interactivity

A major driver and facilitator of database/web marketing strategies such as personalisation and interactivity is the technology available for use in web sites. Advances in technology and development tools try to keep pace with the growing expectations of business and consumers. Table 1 highlights the technological developments during the past decade and shows how different technologies and tools are providing more complex functionality and enable more interactivity in web sites.

Web site generations	Technologies/tools	Outcome of technologies/tools	Emergence
1. Static	Html, Plug-ins	Static delivery of content	1993
2. Dynamic	CGI, Perl, Tcl/Tk, Java, Javascript, ActiveX, VbScript Server log files Cookies	Interactivity and personalisation based on analysis of user interaction and feedback (explicit and implicit)	1995
3. Adaptive/ personalised	Fuzzy & Neural systems GA's OP, P3	Dynamic user modeling and integration of adaptive systems in real time	1997
<i>Agent negotiation</i>	<i>Telescript, Safe-Tcl KQML, Aglets</i>	<i>Digital agents further increase flexibility Change the nature of electronic commerce</i>	<i>1998 - ></i>

Table 1: Evolution of WMIS (Source: adapted from Scharl and Brandtweiner, 1998; Scharl and Bauer, 1999)

At present most commercial web sites are in the first or second generation of technological development (see Table 1). As the numbers of Internet users has increased there has been a move to the use of scripting languages and applets to overcome the shortcomings of applications based on Html, CGI and Perl. More ambitious efforts are focused in third generation web sites which use adaptive technologies such as neural networks. Agent negotiation sees a shift away from the traditional client/server model of web sites towards the use of intelligent agents to conduct electronic commerce on behalf of the buyers and sellers (Scharl and Brandtweiner, 1998; Scharl and Bauer, 1999). An in-depth discussion of agent negotiation is beyond the scope of this paper.

An assessment of current knowledge suggests that organisations can benefit from the alignment of web marketing and database marketing strategies that are underpinned by the appropriate use of web technologies.

RESEARCH ISSUES AND METHODS

This study was designed to determine the key issues when developing effective web sites of direct marketing companies. Direct marketing companies make extensive use of databases; effective web sites for this type of company require the integration of Internet functionality with database marketing strategies. Hence, the research issue was defined as 'the integration of web and database marketing strategies'. Of particular interest were the strategies that drive the development of database/web marketing sites, the role of personalisation and interactivity in collecting and using Internet information for database/w'eb marketing and the use of technology to enable to marketing objectives.

A qualitative approach using case studies was deemed appropriate due to the lack of empirical research published on the research issue (Galliers 1992; Perry 1998; Yin 1994). This was an exploratory study, therefore a number of convergent interviews were conducted to identify the key issues. Convergent interviewing is a qualitative interpretivist approach that allows the researcher to go into the field without any notions or items to measure. The convergent interview technique allows the researcher to identify and confirm the key issues when there is little previous theory available (Dick, 1990). After interviewing a number of practitioners with practical experience, the key issues are progressively identified and stabilised as common recurring themes.

In-depth interviews were conducted with informants from three direct marketing companies. The interview process was guided by a interview protocol which consisted of questions initially framed from existing knowledge. The convergent interviewing technique adds a procedure to analyse the interview data. In brief, each interview goes through the complete process of design, data collection, interpretation and back to redesign.

The cases in this study were used in this manner and the cases are a precursor for future work. In addition the cases were selected on the basis of them all being direct marketing companies. Direct marketing companies were chosen as these types of organisations are considered to be early adopters of web based marketing. Direct marketing organisations are using database marketing techniques extensively and have existing distribution strategies that are readily adaptable to web based marketing.

The key stakeholders interviewed in the cases were senior management, a marketing manager and a system analyst. Over a series of interviews, a number of common themes were identified. The interviews were taped with the informant's permission. The conversations between interviewees and the researcher were transcribed from tape. The tape transcripts were analysed using structured qualitative case analysis techniques (Miles and Huberman 1994). The interview data was used to look for patterns, similarities, differences in the cases and to highlight key issues for further study.

OVERVIEW OF THREE CASES

In order to investigate the state-of-the-art in web based database marketing in Australia, three direct marketing companies in Queensland were selected for an in-depth study. These firms were chosen specifically because they have integrated their traditional marketing channels with their web sites. These firms already had considerable experience with database marketing in conventional marketing channels and therefore were considered to be suitable cases to investigate the integration of database marketing with the web in current practice.

The three firms have been given fictitious names in this paper in order to preserve the identities of the companies and individuals involved in the study. Table 2 provides brief introduction to the three case organisations (Business Software Solutions, BSS; Good Health Products, GHP; and Quick 'n Ezi Film Processing, QNE). The table summarises the firms' characteristics. Descriptions of the three firms are provided below.

	Business Software Solutions (BSS)	Good Health Products (GHP)	Quick n' Ezi Film Processing (QNE)
Product	Business Software Applications	Health Food Products	Film Processing
Years in operation	13	20	23
Number of employees	30	100	78
Extent of Web site integration with internal systems	No integration	No integration	Fully integrated (but not in real time)
Level of Web site sophistication	Basic	Medium	High

Table 2: Details of the three cases

Business Software Solutions (BSS) is a small company that publishes, republishes and distributes business software to a number of large retailers. BSS also sells software directly to customers by mail order and uses the Internet as additional marketing channel. BSS is mindful of its role as a supplier to retailers and is careful about marketing products over the Internet so as not to be seen to be competing with its retail clients. The web site is mainly used in a supporting role allowing customers to down-load software upgrades and demo software. BSS is in the process of upgrading its web site.

Good Health Products (GHP) is a medium sized company which manufactures and direct markets health products by mail order. The web site is seen as complementary to its existing marketing channels. GHP wants to be strategically placed for the expected growth of the Internet as a marketing channel as GHP believe their product is a good fit for the Internet.

Quick n' Ezi Film Processing (QNE) is medium sized company that provides film processing services by mail order and is using the Internet to complement this service. QNE see the Internet as an excellent delivery vehicle for their products as the film processing industry is starting to embrace digital film processing. Customers are able to view their developed photos via the QNE web site and can decide on which photos they want before ordering printed copies. They also offer a number of complementary products and services (e.g. printer cartridges, photo framing and email photos).

In the near future, customers with digital cameras will be able to up-load film to QNE's web site via the Internet.

ANALYSING WEB STRATEGIES OF THREE CASES

In this section, the influence of core products and/or services on web site strategy and level of personalisation and interactivity used in each case's database/web marketing strategy are discussed.

Core Products And/Or Services Influencing Web Site Strategy

The core products and/or services of each case influenced web site strategy. The information intensity of a product, the variety of products available and the value adding that was possible determined the web site strategy adopted by each case. The three cases have been positioned on the revised customer differentiation matrix (see Figure 4). Dotted arrows indicate possible paths for moving the customer base to increased profitability.

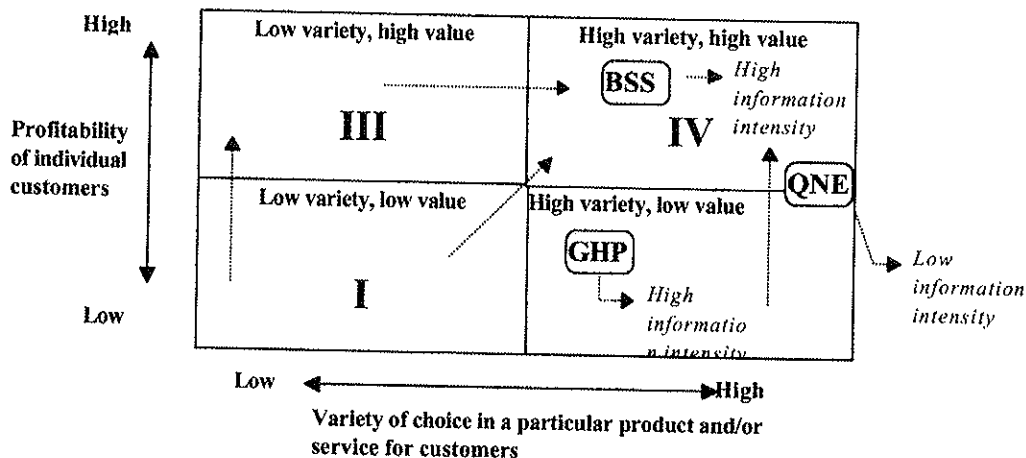


Figure 4: Positioning the three cases in Customer differentiation matrix (Source: adapted from Gillenson *et al*, 1999)

Some products are easily adapted to the web. Film processing and software can be easily digitalised even though there are some limitations due the bandwidth that is currently available on the Internet. While GHP has a physical product that can not be digitalised, the Internet offers much potential in enhancing the presentation of information relating to health products. The Internet can provide personalisation, integration and extension of information in an interactive manner not possible with a paper based catalogue.

BSS's products (software) have the characteristics that are suited to database marketing (high information intensity, variety of choice, high value added). Business software products are sold wholesale to major retail outlets, hence the present reluctance to actively promote and sell direct over the Internet. BSS do not wish to be seen in competition with the retail outlets selling their products. While BSS are not currently actively using database marketing techniques over the Internet, they are in the process of building an database of customers with Internet access.

QNE are actively selling their products/or services over the Internet and are using database marketing techniques and email to market one-to-one to the customer. They are also using the

personalisation and interactivity of the Internet to attract customers or potential customers to their web site. They are also providing complementary products and services by cross selling through alliances. QNE's products are not as information intensive, varied or as highly value added as BSS's products. However, by leveraging the personalisation and interactivity of the Internet using database marketing techniques, QNE have be able to move their customer base towards the highly profitable fourth quadrant of the customer differentiation matrix.

Enhancing marketing processes with the Internet

There are two main opportunities for the enhancement of marketing when using the Internet: increased interactivity and increased personalisation. The experiences of the three cases in relation to these two issues are now discussed in turn. Figure 5 below presents the attractors grid and places the three cases in the appropriate quadrant of the attractors grid.

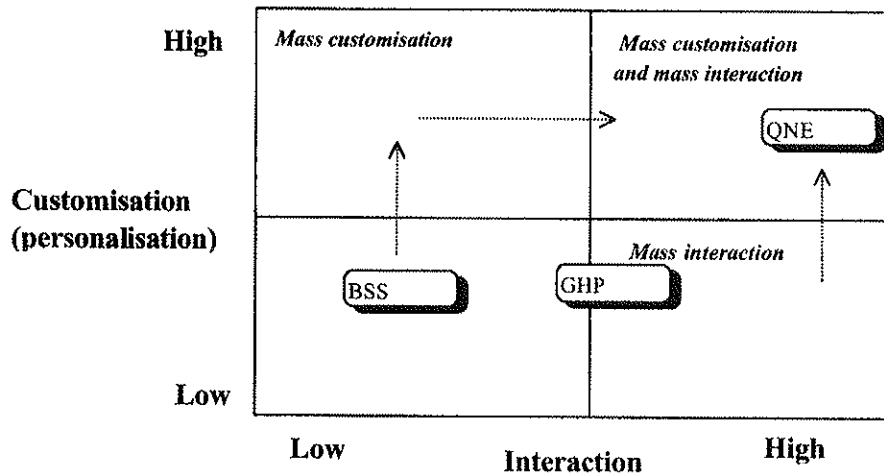


Figure 5
Positioning the three cases in Attractors Grid
(Source: adapted from Watson et al. 1998, p. 46)

QNE provides a member lounge for registered customers which is highly interactive and customised. QNE is taking advantage of this increased marketing functionality by using database marketing techniques to market its products and services one-to-one. BSS and GHP are in low customisation and low interaction attractors quadrant which is adequate for their current functional marketing strategies that use database marketing over the Internet in a limited manner. The evolutionary nature of web sites could result in BSS and GHP moving to the mass interaction and/or the mass customisation quadrants, but this would require a significant change in the web site strategy of the organisations.

Overall, the impetus in web sites has been towards customised upper quadrants (as noted by the direction of the dotted arrows in Figure 5). Ultimately, the combination of mass customisation and mass interaction can result in increased marketing functionality. Database marketing over the Internet is reliant on the enabling web technologies which are constantly evolving and pushing organisations toward the highly interactive and personalised quadrants of the attractors grid.

Increasing interactivity between organisations and their customers

A web site can offer a level of interactivity between the customer and an organisation that is not possible with conventional marketing channels thus providing opportunities for the collection of rich customer information. There were some differences in the methods used by each case to collect information from the Internet. It would appear that the different web site goals of the cases can explain the different approaches. Table 5 compares information collection methods used with the goal of each web site.

	BSS	GHP	QNE
Passive information collection	Web traffic	Cookies Web traffic	Cookies Web traffic
Active information collection	Registration Surveys	On-line orders Voluntary information	Registration On-line orders Voluntary information
Goal of Web site	<i>Support distribution of software products</i>	<i>Sell and promote products and services</i>	<i>Sell and promote products and services</i>

Table 5: Collection of Internet Information

The different approaches to the collection of information can be explained by looking at the primary strategy goals of each web site. BSS was not as active as GHP and QNE in the collection of information for database marketing purposes. BSS's primary goal for their web site is a supporting role for their products which are sold in major retail outlets. They are not actively selling their products over the Internet, hence there was less need to collect information from their web site. One of BSS's secondary goals is to collect information from on-line software registrations and surveys. This is part of the overall process of building an Internet customer database that is merging new customers with existing customers. BSS is concerned that pending privacy legislation regarding the Internet will restrict the sale of customer lists with email addresses. BSS sees this as having serious consequences for any company wishing to use the Internet for direct marketing as you will need to build your own database of Internet customers.

GHP and QNE, on the other hand, are actively selling and promoting their products and services on the web. Hence it is important for them to collect information from their web sites for database marketing purposes. Both GHP and QNE use cookies to track sales orders placed in the shopping basket by customers. Furthermore, QNE use cookies to customise interaction with their registered customers. QNE's strategy is much more proactive in attracting customers and potential customers to its web site than GHP's strategy which sees their web site playing a supporting role to the conventional marketing channels.

Increasing personalised communication with customers

Once a web site starts to generate traffic, opportunities arise to not only collect information about visitors, but to use that information to market products and services directly to a customer or potential customer in a highly personalised manner not possible with conventional marketing channels.

All three companies are using information collected from their web sites in their database marketing strategies. Due to the interactive nature of the web, a number of uses for Internet information have been identified (Kannan, Chang and Whinston, 1998; Murray, 1997; Rowson, 1998). Usage varies from monitoring performance of a web site, using email and database marketing techniques to direct market products and services to the customer and/or potential

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customers. Internet information also provides a feedback loop to the organisation and can be used to customise a web site to a customer profile. Table 6 summarises the use of information collected from each case's web site.

Type of usage	BSS	GHP	QNE
Monitor Web site performance	Web site traffic	Web site traffic Volume of Web sites sales Comparison with other marketing channels	Web site traffic Volume of Web site sales Comparison with other marketing channels
Use for direct marketing purposes	Notify customers of software upgrades and new and existing products using email	n.a.	Notify customers of new and existing products and services using email
Use as a feedback loop to the customer	Reply to customer concerns and inquiries	Reply to customer concerns and suggestions regarding Web site design, security and privacy	Reply to customer concerns and suggestions regarding Web site design, security and privacy
Customise Web site	n.a.	n.a.	Registered customers

Table 6: Personalisation – use of Internet information

For each case it was important to monitor the performance of the web site in terms of web traffic. BSS is using Internet information to support its strategy goals of providing software support for products sold by retail clients and to build an Internet database of customers.

For GHP and QNE selling and promoting their product on their web sites is a primary goal so it is important to analyse the sales generated by the web and to compare web sales against conventional marketing channels. BSS and QNE are using the information collected from their web sites to direct market products and services using database marketing practices. For example BSS is promoting new products to existing and potential customers using email, QNE is using direct marketing to sell products and services to registered customers using email. By using email and database marketing techniques, QNE can segment their markets to the profile of registered customers in a very efficient and effective manner.

Because of the inherent interactive nature of the web all three cases are using Internet information to provide a feedback loop with customers on a wide number of issues. These issues range from general inquiries about products and services, security and privacy concerns, to problems with the web site interface. QNE has a much more advanced and proactive web site strategy than the other two cases so it not surprising that QNE has the only web site that is customised for registered customers.

IMPACT OF THE WEB MARKETING SITES ON THE CASES

It is difficult to quantify the impact of the web site/database marketing strategies adopted by each of the cases but it is possible to make subjective judgements based on the comments of the informants. In all three cases it was evident that the core product or service had influenced the degree of sophistication of the web site strategy adopted and its impact on each firm.

For example, QNE had a sophisticated web site strategy which was in response to the move towards digitalisation in the film processing industry. Management has played a large part in driving the web site strategy of QNE. The success of the web site was noted by the General Manager: "Web site was generating in excess of one million hits per month and the bandwidth of the web site was 80 percent utilised from 8:00 am to 11:00 pm on most days of the week". The success of web site was also creating opportunities for complementary products, thus creating more profitable customers.

Similarly while the web site of GHP was not presently as successful as QNE's web site, GHP is moving to an increasingly sophisticated web site as management is very optimistic about the long term viability of the web site. Management felt that: "they needed to be strategically positioned for expected uptake in electronic commerce" and that: "the web site was a viable and complementary marketing medium to support their call centre". GHP are looking utilise database marketing strategies more aggressively in the future as the web matures as a marketing channel.

On the other hand, BSS had a much more low key web site strategy and do not wish to be seen competing with retail outlets selling their products. They see the web site as providing valuable support to their role as a distributor of business software solutions. The web site provided customers with an efficient and cost effective way down-loading software upgrades and demos. Currently, BSS is not actively using database marketing techniques over the Internet. However, BSS is in the process of building an Internet customer database to strategically position themselves for database marketing over the Internet in the future.

Overall, while the impact of each web site is difficult to quantify, each firm saw their web site as having a positive effect on core business activities and were very optimistic about the future viability of web marketing.

CONCLUSIONS

This paper investigated an under-researched area: the integration of web and database marketing strategies. Newly developed marketing frameworks such as the customer differentiation matrix and the attracters grid provided the basis for analysing the three cases in this study. The three direct marketing firms were able to provide an enhanced customer experience by delivering extended and integrated information content, special and free services not possible on traditional marketing channels. While information intensity of core products and/or services would appear to influence web site strategy, interactive and personalised content delivered by database marketing techniques can improve customer profitability by moving a customer base towards the more profitable regions of the customer differentiation matrix. Interactive and personalised content delivery is becoming a reality as web technologies are increasingly capable of providing the necessary marketing functionality.

The customer differentiation matrix and attracters grid allow organisations to assess their current situation and to choose appropriate web/database marketing strategies for their products and/or services. By re-assessing their web and database marketing strategies, organisations can re-positioning themselves on the customer differentiation matrix and attracters grid. The strategic alignment of web and database marketing can facilitate the movement of an organisation's customer base towards the more profitable regions of the customer differentiation matrix.

Database marketing on the Internet is still in its infancy and further work is required to formalise the integration of web and database marketing strategies and to fully investigate the specific technologies needed to support such an approach.

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BIOGRAPHICAL NOTES

Michael Lane is an Associate Lecturer in the Department of Information Systems at the University of Southern Queensland. He holds an Associate Diploma of Mathematics and Computing and a Bachelor of Information Technology (First Class Honours) from the University of Southern Queensland and currently enrolled in a PhD program at the same university. His research interests include the development of web based systems, requirements engineering, systems effectiveness, web based database marketing and customer relationship management.

Angèle Cavaye is a Professor in the Graduate School of Management at Southern Cross University. Her research interests include the adoption and implementation of e-commerce, the use of IS by small business, IS implementation issues. She has published over 40 refereed articles about these topics. She has worked at several Australian, New Zealand and European universities before joining the Graduate College of Management. She is actively involved in teaching in both the MBA and the DBA programs; she is DBA Academic Coordinator and Director of Research.