Broadening the CRM domain of application to higher educational (e-learning) environments

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Abstract. In this paper, we reflect about the broadening of the field of application of CRM from the business domain to a wider context of relationships in which the inclusion of non-profit making organizations seems natural. In particular, we focus on analyzing the suitability of adopting CRM processes by universities and higher educational institutions dedicated to e-learning. This is an issue that, in our opinion, has much potential but has received little attention in research so far.

Keywords. Customer Relationship Management, e-CRM; Higher Education; e-Learning; e-Monitoring.

Track: Marketing of Public and Non-Profit Organisations

1 Introduction

The efforts made by universities and public administration to improve the quality of higher education, often at the behest of market forces, have led universities to rethink their strategic orientation in order to respond adequately to the various transformations they face (Hemsley-Brown and Oplatka, 2006); i.e. student demands, the needs and patterns of differentiated behaviour; increasingly competitive global markets, frequent innovation in teaching/learning procedures, etc. In this context, it is not surprising that universities opt for intelligence and information systems and CRM technologies (Seeman and O'Hara, 2006; Neville *et al.*, 2005) in order to identify those students who require greater attention and provide them with a more personalised service, thus reducing the number of dropouts and maximising the value of the service on offer.

Though most CRM studies and applications have usually been developed for the profit-making organization framework, its essential foundations make CRM highly suitable for non-profit making organizations (Arnett *et al.*, 2003; Weir and Hibbert, 2000). This idea is strongly related to a wider subjacent view of the customer concept that is more appropriate nowadays, which transcends the consumption framework.

The adoption of CRM systems is coherent in those organizations which practise a customer-centric approach. The final aim pursued by any organization that uses such systems is to provide its customers an added value based on the individualized understanding of their preferences. This philosophy of management, thanks to the intelligence coalition of Information Technologies, working processes, analytical methods for databases, knowledge management capabilities, etc., should contribute to "build and sustain a profit-maximizing portfolio of customer relationships" (Zablah *et al.*, 2004, p. 481).

The non-profit making organizations are suffering increasingly competitive pressure, which has led them to offer services of quality. This explains why non-profit making organizations like universities, now more customer/student focused (Neville et al., 2002) and attracted by the advantages associated to them, have begun to adopt CRM systems (Hemsley-Brown and Oplatka, 2006; Neville *et al.*, 2005; Seeman and O'Hara, 2006). Besides, the adoption of these kinds of systems by institutions whose organizational culture defends a long-term relational orientation, favours the achievement of institutional goals, as well as the generation of positive results for both their own organization and its primary stakeholders; mainly, students and scholars (Jayachandran *et al.*, 2005). In short, the adoption of CRM systems should be viewed as a plausible mean to strengthen the adding-value process of universities. However, we ought to be aware of the fact that just investing in these technological systems does not guarantee a competitive advantage. On the contrary, any CRM system developed and adopted by a university must achieve an in-depth knowledge about its customers, and use such knowledge to properly evaluate the state of relationships, take the right decisions, and address appropriate actions. This is, in our opinion, the gist and challenge of any CRM adoption process at the universities.

Developing CRM systems in higher educational contexts it is not always a mere translation of those applied in the business field. This is why CRM technologies,

applications and processes require adaptation to the distinguishing characteristics of the institution (Fjermestad and Romano, 2003; Raman *et al.*, 2006).

Particularly, if we focus on the e-learning arena, the adoption of the CRM systems is even more interesting and challenging. In the electronic context defined by the Internet framework, e-CRM systems are very convenient for revealing the relationships with the primary stakeholders of the universities. In this regard, one of the most critical tasks in the determination of the whole value provided to the students depends on how the institution monitors the learner behaviour during the interaction with scholars, classmates and the e-learning system in general (Rodrigues et al., 2006); i.e., our main concern is the online monitoring of the students' e-learning process.

This paper brings forward part of a wider research focused on developing e-CRM solutions to be applied in e-learning environments. Specifically, we carry out a literature review of CRM and, especially, its extension to the field of non-profit making organizations, with particular attention to the case of the universities and the e-learning environments. Next, we discuss the clear necessities that such institutions have to monitor their students' behaviour and performance. Finally, we point out the main ideas the reader can find in this paper.

2 A brief approach to the CRM general background

CRM is the result of the evolution in marketing as well as its integration of different ideas and concepts that have arisen from new data, technologies and organisational processes (Boulding *et al.*, 2005; Payne and Frow, 2005). This evolution began in the 60s with Theodore Levitt (1960), who stated that organizations should assure their long-term future not by placing and selling their products but by satisfying the needs of those who were going to use them. Years later, Berry (1983), the initiator of relationship marketing, proposed the adoption of a business philosophy (Berry, 2002) in which service companies focused on attracting, maintaining and improving customer relations. Based on the construction of this relationship, the concept was taken further (e.g.: Grönroos, 1994; Gummesson, 1987; Webster, 2002). In addition, the processes and capabilities needed to maintain good customer relationships were studied, which led to the development of market orientation (Jaworski and Kohli, 1993; Narver and Slater, 1990). Alongside the spread of IT among companies and the consequently huge increase in customer data that it generated, there arose the concepts of one-to-one marketing (Peppers and Rogers, 1993) and massive customization (Pine, 1993).

So, in the 90s many companies began to apply these principles (satisfying the customer by giving value, orientation towards the relationship, marketing intelligence, personalisation of communications, etc), and especially the marketing relationship (Bolton and Tarasi, 2006; Payne and Frow, 2006; Zablah *et al.*, 2004), combined with technological solutions that came to be called CRM; these were to allow experts to obtain, store and analyse with greater ease data on customer behaviour and its interaction with the organisation. Through this, there emerged a broader concept of CRM now regarded as a strategic approximation through which the management of relationships with the organisation's key clients is appropriately developed (Payne and Frow, 2005).

In accordance with the latest and most relevant contributions in marketing literature (Bolton and Tarasi, 2006; Payne and Frow, 2005 and 2006; Zablah *et al.*, 2004), this approximation defends the creation of value, the intelligent use of technological systems and inter-functional business processes to obtain and spread knowledge on customers as

well as the development of advantageous and long-lasting relationships with customers and segments of specific customers (Boulding *et al.*, 2005).

3 Toward the adoption of the relationship perspective and CRM practices in higher educational contexts - A brief overview

Although most of the research on CRM has concentrated on business, the principles, technologies and procedures that derive from this concept are also applicable to non-profit making areas (Arnett *et al.*, 2003; King, 2007; Pan *et al.*, 2006, among others). It is important, therefore, to consider the particular characteristics of the relationship or certain factors that condition its development (Cervera *et al.,* 2001*)*. This idea is coherent, in essence, with the premises defended some decades ago by Kotler and Levy (1969) regarding the widening of the field of application of marketing.

Even though these proposals received a mixed response from those in public and non profit-making organisations, it has not proved to be an obstacle for the acceptance of the expansion of marketing into public and non profit-making organisations in general (Cervera *et al.*, 2001) and into universities in (e.g.: Gibbs, 2002; Hemsley-Brown and Oplatka, 2006). In universities, the debate on the application of marketing principles continued into the 90s (for more detail see: Sharrock, 2000; Hemsley-Brown and Oplatka, 2006). The main resistance to the use of business concepts and principles came from academics and educators opposed to applying market forces to the university system. They considered that these principles contradicted educational values. This concern about the "marketisation" of university education led to the debate, for example, around considering the student a customer of the institution (e.g. Barrett, 1996; Franz, 1998).

Curiously, alongside the increased application of marketing to public services and non profit-making organisations, there has been a greater acceptance of the evolution of the theoretical development of marketing. In fact, the principles that currently carry greater weight are closer to the specific problems of these institutions (Stokes, 1997; Weir and Hibbert, 2000). Today's marketing focus is not so much on getting "buyers" as on customer satisfaction, giving them what they want and cultivating a relationship with them that is not just strictly commercial, unilateral and impersonal. Thus, the adoption of CRM by educational institutions brings with it the use of appropriate instruments to acquire greater knowledge of the needs of students in terms of training, to help organise services tailored to their characteristics and requirements, to improve the process of education and get better results that reduce the number of dropouts (Neville *et al.*, 2005).

However, marketing education literature has not developed uniformly and there is a lack of development of theoretical models that are clearly adapted to educational services (Hemsley-Brown and Oplatka, 2006). As Oplatka and Hemsley-Brown (2004) point out, when literature originated in the 80s, it was fundamentally theory and norms oriented, based on the application of models initially conceived for business, especially those from marketing communication, to the promotion of educational institutions. Later, the debate was about if students fitted into the "customer" label (in their "consumption" of training programs) or whether it was about "products" that educational institutions "offered" to the labour market (Conway *et al.*, 1994; Emery *et al.*, 2001).

At around the same time, education was being labelled a service, which situated marketing education literature within marketing services (Mazzarol, 1998; Chung and McLarney, 2000). Other subjects that sparked the interest of researchers were the processes of internationalisation in the educational context (Binsardi and Ekwulugo, 2003; Mazzarol *et al.*, 2003; etc.), as well as factors that determined the choice of a university (e.g. Maringe, 2006).

The adoption of the relationship perspective and the principles and instruments of CRM have been considered as the latest and most recent subject for study in marketing education mainly due to the fact that the studies applied to non profit-making organisations have highlighted their rich contribution to the development of the organisation's activities (Arnett *et al.*, 2003; King, 2007; Pan *et al.*, 2006). In the specific field of education, studies like those undertaken by Klassen (2002) y Trim (2003), have provided additional support to the organisational philosophy that marketing relationships propose, proving that this orientation is compatible with providing educational services.

Nevertheless, there is still very little specific research on CRM in education. In this sense, based on the literature review we have undertaken in this paper, we have only identified two previous studies. Seeman and O'Hara (2006) demonstrate how the development and implementation of a CRM project improves the obtaining and management of information, reduces the number of dropouts and increases student satisfaction with programs and educational services on offer. These researchers consider that the CRM impact on university education is greater when the institution adopts e-learning systems. Also, Neville *et al.* (2005) examined the results of an e-learning management system developed and implanted using a CRM strategy. This study shows that the effectiveness of a virtual educational environment does not depend so much on a system's complex technology as on the teaching-learning methodology, and that the technology to be used must serve specific educational proposals.

Indeed, more research is required in order to increase understanding of CRM initiatives, as well as the design of specific technologies and instruments for the service of teaching/learning processes (Hemsley-Brown and Oplatka, 2006) in general, and for e-learning in particular.

4 E-monitoring students and virtual teams in e-learning environments: our research motivation

The technological CRM tools available in the field of education allow us to make use of database capabilities, data mining systems and interaction technologies in order to obtain and store huge quantities of information on the characteristics and behaviour of students, and to generate knowledge about the same and make it available to the educator so that he/she can contribute more efficiently to the students' learning process. However, the usual technologies are limited for obtaining and analysing information on student behaviour in a virtual environment; especially when students cooperate in carrying out learning activities. Thus, although these tools allow the educator to consult the most relevant personal and academic data (prior qualifications, academic report on current university course, etc), giving the educator knowledge of the student's educational needs, there are still limitations regarding following the student's behaviour when navigating and interacting with learning environment (Jerman *et al.*, 2001; Zumbach *et al.*, 2002).

The current limitations of CRM systems when applied to e-learning can be illustrated, for example, in the lack of consideration of relevant variables like frequency of access to the student classroom, the student's consultation of on-line information and educational resources, their individual contribution to the development of activities in collaboration with other students, etc. In fact, work in this area focuses on conceptual aspects of monitoring (Guerrero *et al.*, 2005; Jeong, 2004), providing simple, limited monitoring instruments (Stahl, 2006). Therefore, if we consider that the resulting information from monitoring processes of learning on-line is particularly relevant for the university and its educators, as it would permit them to know the level of progress of each student and team in the development of each activity, motivate the participants according to their level of progress and organise the working group, etc, (Dillenbourg 1999; Daradoumis *et al.*, 2006), then it is worthwhile researching the development of proposals for the monitoring of added value.

It is possible to resort to a variety of generic methods to be imported and/or adapted to the monitoring of students and working groups to the e-learning field. These methods range from formal methods (e.g.: statistical analysis, social network analysis, monitoring through shared information and objects) to informal ones (Reffay and Chanier, 2002; Martínez *et al.*, 2003; Mazza and Milani, 2005). Also, differences exist as regards the sources of information used for monitoring, such as log files of synchronous and asynchronous communication, bulletin boards, and electronic discussion information reports. Besides, the necessity for adequately integrating the application of a particular e-monitoring solution to the rest of the CRM technologies used, as well as to the e-learning environments (as e.g.: Basic Support for Cooperative Work or BSCW system, Moodle, WebCT, eClass, etc.), also requires the use of a common data format.

Taking the previous questions as a backdrop, it is convenient to create first a conceptual model that allows us to develop an e-Learning Monitoring System that provides monitoring or activity reports about the primary stakeholders of the institution. This is currently our main research motivation, and where we are focusing our research efforts. Specifically, we are developing a system, based on the combination of easy-to-use spreadsheets models and MS/OR techniques, in order to be used for tracking a group's and an individual's activity and performance in any e-learning environment.

5 Concluding remarks

We have tried to make some contribution to the general CRM framework of non-profit making organizations and, in particular, to the CRM applications used in the e-learning arena. We are all aware of what CRM is. We find lots of academic papers that offer their vision of this management model during the last decade. Most of them could be aggregated into a small set of perspectives; i.e. CRM as a process, strategy, philosophy, etc.). However, no matter what the perspective is, it is reasonable to agree with the essential purpose of any CRM perspective: a process for managing the relationships with the firm's customers that, based on the application of capabilities for knowledge generation, aims to maximize the value offered to every one of them.

In this paper, we have highlighted the importance of amplifying the scope of CRM application, from the more restrictive arena of businesses to the non-profit making organizations. Consequently, the concept of "customer" must not be constrained by the business context, but it has to be open to the non-profit making context. Specifically, we have focused on analyzing the potential that CRM has to be applied in e-learning

domains. In this respect, educational institutions are advised to make use of CRM systems in order to better know their "customers" –i.e. the students– and address specific actions, with dynamicity, to improve the value provided to every one of them, so to increase the students' performance. Besides, we defend the use of CRM systems in this context, not only to maximize the value offered by the e-learning institution to the students, thus focused on managing the institution-student relationships, but also to favour collaborative relationships with and among scholars' and students' working groups. In other words, we point out that, in the e-learning contexts, it is interesting to apply CRM by broadening its focus from customer/student to a group of primary stakeholders compounded by the students and scholars of the institution.

One of the key questions that should be considered in any CRM process aiming to obtain successful results is that of monitoring and evaluating the customers' performance in order to know the right ways to address, if necessary, accurate actions to improve it. This is especially interesting when CRM is applied to the e-learning domain.

References

Arnett, D. B.; German, S. D. and Hunt, S. D. (2003). The identity salience model of relationship marketing success: the case of nonprofit marketing. *Journal of Marketing* 67(2) 89-105.

Barrett, L. R. (1996). On students as customers: some warning from America. *Higher Education Review* 28(3) 70-1.

Berry, L. L. (2002). Relationship marketing of services: perspectives from 1983 and 2000. *Journal of Relationship Marketing* 1(1) 59-77.

Berry, L.L. (1983). Relationship marketing. In: L. L. Berry, G. L. Shostack and G. Upah (Eds.). *Emerging perspectives on services marketing*. Chicago, American Marketing Association, 25-28.

Binsardi, A.; and Ekwulugo, F. (2003). International marketing of British education: research on the students' perception and the UK market penetration. *Marketing Intelligence and Planning* 21(5) 318-327.

Bolton, R. N.; and Tarasi, C. O. (2006). Managing customer relationships. In: N. K. Malhotra (Ed.). *Review of marketing research*, Vol. 3, New York, M.E. Sharpe, 3-38.

Boulding, W.; Staelin, R.; Ehret, M.; and Johnston, W. J. (2005). A customer relationship management roadmap: what is known, potential pitfalls, and where to go. *Journal of Marketing* 69(4) 155-166.

Cervera, A.; Mollá, A.; and Sánchez, M. (2001). Antecedents and consequences of market orientation in public organisations. *European Journal of Marketing* 35(11/12) 1259-1286.

Chung, E.; and McLarney, C. (2000). The classroom as a service encounter: suggestions for value creation. *Journal of Management Education* 24(4) 484-500.

Conway, T.; Stephen Mackay, S.; and Yorke, D. (1994). strategic planning in higher education: who are the customers. International *Journal of Educational Management* 8(6) 29-36.

Daradoumis, T.; Martínez, A.; and Xhafa, F. (2006). A layered framework for evaluating online collaborative learning interactions. *International Journal of Human-Computer Studies* 64(7) 622-635.

Dillenbourg, P. (Ed.). (1999). *Collaborative learning. Cognitive and computational approaches*. Elsevier Science.

Emery, C.; Kramer, T.; and Tian, R. (2001). Customers vs. products: adopting an effective approach to business students. *Quality Assurance in Education* 9(2) 110-115.

Fjermestad, J.; and Romano Jr, N.C. (2003). Electronic customer relationship management. Revisiting the general principles of usability and resistance – an integrative implementation framework. *Business Process Management Journal* 9(5) 572-591.

Franz, R. S. (1998). Whatever you do, don't treat your students like customers! *Journal of Management Education* 22 (1) 63-69.

Gibbs, P. (2002). From the invisible hand to the invisible handshake: marketing higher education. *Research in Post-Compulsory Education* 7(3), 325-338.

Grönroos, C. (1994). Quo vadis, marketing? Toward a relationship marketing paradigm. *Journal of Marketing Management* 10(5) 347-360.

Guerrero, L., Madariaga, M., Collazos, C.; Pino, J.; and Ochoa, S. (2005). Collaboration for learning language skills. In: *Proceedings of 11th International Workshop on Groupware CRIWG'05*. Pernambuco, Brazil, 284-291.

Gummesson, E. (1987). The new marketing: developing long-term interactive relationships. *Long Range Planning* 20(4) 10-20.

Hemsley-Brown, J.; and Oplatka, I. (2006). Universities in a competitive global marketplace. A systematic review of the literature on higher education marketing. *International Journal of Public Sector Management* 19(4) 316-338.

Jaworski, B. J.; and Kohli, A. K. (1993). Market orientation: antecedents and consequences. *Journal of Marketing* 57(3) 53-70.

Jayachandran, S.; Sharma, S.; Kaufman, P.; and Raman, P. (2005). The role of relational information processes and technology use in customer relationship management. *Journal of Marketing* 69(4) 177–192.

Jeong, A. (2004). The combined effects of response time and message content on growth patterns of discussion threads in computer-supported collaborative argumentation. *Journal of Distance Education* 19(1) 36-53.

Jerman, P.; Soller, A.; and Muhlenbrock, M. (2001). From mirroring to guiding: a review of state of the art technology for supporting collaborative learning. In: *Proceedings of EuroCSCL*. Maastricht, NL, 324-331.

King, S. F. (2007). Citizens as customers: exploring the future of CRM in UK local government. *Government Information Quarterly* 24(1) 47-63.

Klassen, M.L. (2002). Relationship marketing on the Internet: the case of top- and lower-ranked US universities and colleges. *Journal of Retailing and Consumer Services* 9(2) 81-85.

Kotler, P.; Levy, S.J. (1969). Broadening the concept of marketing. *Journal of Marketing*. 33(1) 10-15.

Levitt, T. (1960). Marketing myopia. *Harvard Business Review* 38(July-August) 45-60.

Maringe, F. (2006). University and course choice: implications for positioning, recruitment and marketing. *International Journal of Educational Management* 20(6) 466-479.

Martínez, A.; Dimitriadis, Y.; Rubia, B.; Gómez, E.; and De la Fuente, P. (2003). Combining qualitative and social network analysis for the study of social aspects of collaborative learning. *Computers and Education* 41(4) 353-368.

Mazza, R.; and Milani, C. (2005). Exploring usage analysis in learning systems: gaining insights from visualizations. In: *Proceedings of the 12th International Conference on Artificial Intelligence in Education* (AIED). Amsterdam.

Mazzarol, T. (1998) Critical success factors for international education marketing. *International Journal of Educational Management* 12 (4) 163-175.

Mazzarol, T.; Soutar, G. N.; and Seng, M.S.Y. (2003). The third wave: future trends in international education. *International Journal of Educational Management* 17(3) 90-99.

Narver, J. C.; and Slater, S.F. (1990). The effect of a market orientation on business profitability. *Journal of Marketing* 54(4) 20-35.

Neville, K., Adam, F., McCormack, C., (2002) Mentoring Distance Learners: An Action Research Study – Xth European Conference on Information Systems (ECIS 2002), Gdañsk, Poland, June 6-8, 2002.

Neville, K.; Heavin, C.; and Walsh, E. (2005). A case in customizing e-learning. *Journal of Information Technology* 20(2) 117-129.

Oplatka, I.; J. Hemsley-Brown (2004). The research on school marketing: current issues, future directions. *Journal of Educational Administration* 42(3) 375-400.

Pan, S. L.; Tan, C. W.; and Lim, E.T.K. (2006). Customer relationship management (CRM) in e-government: a relational perspective. *Decision Support Systems* 42(1) 237-250.

Payne, A.; and Frow, P. (2005). A strategic framework for customer relationship management. *Journal of Marketing* 69(4) 167-176.

Payne, A.; and Frow, P. (2006). Customer relationship management: from strategy to implementation. *Journal of Marketing Management* 22(1/2) 135-168.

Peppers, D.; and Rogers, M. (1993). *The one-to-one future: building relationships one customer at a time*. New York, Currency/Doubleday.

Pine, J. B. (1993). *Mass customization. The new frontier of business competition*. Boston: Harvard University Press.

Raman, P.; Wittmann, C. M.; and Rauseo, N.A. (2006). Leveraging CRM for sales: the role of organizational capabilities in successful CRM implementation. *Journal of Personal Selling and Sales Management* 26(1) 39-53.

Reffay, C.; and Chanier, T. (2002). Social network analysis used for modeling collaboration in distance learning groups. In: *Proceeding of Intelligent Tutoring System conference* (ITS'02). Juin, France, 31-40.

Rodrigues, M.F.; Bressan, G.; and Ruggiero, W. (2006). "Monitoring e-Learning: Concepts, Scenarios, Architecture and Conceptual Model. In V. Uskov (Editor) *Proceedings of the Conference Computers and Advanced Technology in Education (CATE)*, Lima, Peru.

Seeman, E. D.; and O'Hara, M. (2006). Customer relationship management in higher education. Using information systems to improve the student-school relationship. *Campus-Wide Information Systems* 23(1) 24-34.

Sharrock, G. (2000). Why students are not (just) customers (and other reflections on life after George). *Journal of Higher Education Policy and Management* 22(2) 149-164.

Stahl, G. (2006). *Group cognition: computer support for building collaborative knowledge*. Acting with Technology Series, MIT Press.

Stokes, D. (1997). A lesson in entrepreneurial marketing from the public sector. *Marketing Education Review* 7(3) 47-54.

Trim, P. R. J. (2002). Corporate intelligence and transformational marketing in the age of the Internet. *Marketing Intelligence & Planning* 20(5) 259-268.

Webster, F. E. (1992). The changing role of marketing in the corporation. *Journal of Marketing* 56(4) 1-17.

Weir, L.; and Hibbert, S. (2000). Building donor relationships: an investigation into the use of relationship and database marketing by charity fundraisers. *The Service Industries Journal* 20(2) 114-132.

Zablah, A.R.; Bellenger, D.N.; and Johnston, W.J (2004). An evaluation of divergent perspectives on customer relationship management: Towards a common understanding of an emerging phenomenon. *Industrial Marketing Management* 33(6) 475-489.

Zumbach, J.; Muehlenbrock, M.; Jansen, M.; Reimann, P.; and Hoppe, U. (2002). Multi-dimensional tracking in virtual learning teams: an exploratory study. In: *Proceedings of the Conference on Computer Supported Collaborative Learning* CSCL-2002. Boulder, CO, 650-651.