

Modelling Customer Relationships in e-Business

Alexander Osterwalder & Yves Pigneur
University of Lausanne

Abstract

The goal of this paper is to provide an ontological approach to modelling customer relationships, which helps managers optimize channels, improve customer acquisition, retention and add-on selling. The advantages of a systematic approach are multiple. Modelling and mapping customer relationships allows a better understanding of the way a company interacts with its customers. A formal description is also communicable between the various stakeholders. Further, conceptually seized customer relationships are comparable to the customer relationships of competitors. We illustrate the model with two examples of the mobile industry. The customer relationship ontology presented in this paper is part of the more general business model ontology of Osterwalder & Pigneur (2002).

1. Introduction

Customer Relationship Management, short CRM, is one of the current management and Information Systems (IS) buzzwords and hundreds of application vendors praise the merits and miracles of their CRM software. Consequently, CEO's and CIO's sometimes tend to reduce managing customer relationships to a problem that can be resolved by technology. Rather, they should perceive CRM as a conceptual management problem that can be resolved with the assistance of IT. In this paper we outline a conceptual approach to customer relationship that shall help understanding the essence of and the relation between a company's value proposition, target customer segments, distribution channels and the actual customer interactions. This understanding is particularly important in a time where Information and Communication Technology (ICT) multiplies the number of channels, intermediaries and customer interactions and therefore causes more complexity.

The paper is structured as follows. In the second section we explain the role of the customer relationship ontology outlined in this paper in the more general business model ontology of Osterwalder & Pigneur (2002). In section 3 to 7 we explain the customer relationship model and its elements, target customer, criterion, channel, and channel link. The following two sections treat of channel strategy and channel conflict. After that we continue explaining the model's last two elements, namely the relationship element and relationship mechanisms, which we illustrate through a mobile telecom operator case study in section 12. We conclude in section 13.

2. Customer Relationships – an Integral Part of a Business Model

The conceptual approach to customer relationships that we explain in detail in this paper is an integral part of the wider concept of the business model ontology (Osterwalder and Pigneur 2002). A business model is a conceptual tool that contains a set of elements and their relationships and allows expressing the business logic of a specific firm. It allows to easily capture, model, understand, share (Peterovic, Kittl et al. 2001), observe over time, and, maybe even measure and simulate business models. Further, some authors see it as a new unit of analysis and interesting tool for innovation (Stähler 2002). A business model can be broken down into four simple pillars, which are the "what", the "who", the "how" (Markides 1999) and the "how much" of a firm. In other words, these pillars allow to express *what* a company offers, *who* it targets with this, *how* this can be realised and *how much* can be earned by doing it. These pillars can be translated into four main business model blocks that can then be further decomposed: Firstly, the product innovation block, which describes the value proposition of a firm. Secondly, the customer relationship block, which describes how a firm gets in touch with its customers and what kind of relationships it wants to establish with them. Thirdly, the infrastructure management block that describes what activities, resources and partners are necessary to provide the first two blocks. And finally, the financial aspects block, which describes the revenue flows and the pricing mechanisms of a firm, or, in other words, how a company makes money through the other three blocks (see figure 1). In this paper we focus on the customer relationship block and specify how it is conceptualized. It consists of three elements, which are channels, relationships and target customer segments.

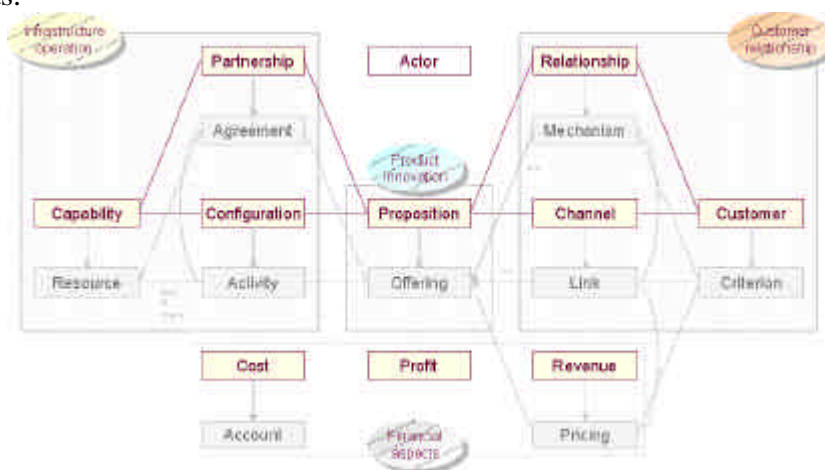


Figure 1: Business Model Framework

3. Customer Relationship

This element refers to the way a firm goes to market, how it actually reaches its customers and how it interacts with them. ICT has traditionally had a very strong influence on the ways companies organize their customer relationships. The use of databases for managing customer related information, the introduction of scanners in supermarkets, the offering of toll-free numbers connected to call centres or the use of new distribution and communication channels are just some of the

numerous applications that have transformed customer relationship. Especially the dissemination of the Internet has further increased the range of possibilities of interacting with customers. Generally, it can be said that the falling cost and improving performance of ICT has contributed to the facilitation of customer-related information gathering and customer- and product-related information diffusion. Data warehousing, data mining and business intelligence are just some of the technologies that have allowed managers to gain insight on their customers buying behaviour and improve customer relationship. Exploiting customer information can allow managers to discover new and profitable business opportunities and to ameliorate customer satisfaction. ICT also helps companies to provide their customers and prospects with ever richer information (Evans and Wurster 1997) and offer them innovative ways of interaction and thus contribute to the firms value proposition. Finally, in order to serve customers better or to reach new markets companies introduce new distribution and communication channels, such as the Internet or mobile phones, but also new relationship mechanisms, such as personalization and trust.

The CUSTOMER RELATIONSHIP ontology covers all customer related aspects. This comprises the choice of a firm's TARGET CUSTOMERs, the CHANNELs through which it gets in touch with them and the kind of RELATIONSHIPs the company wants to establish with its customers. The CUSTOMER RELATIONSHIP describes how and to whom it delivers its VALUE PROPOSITION, which is the firm's bundle of products and services.

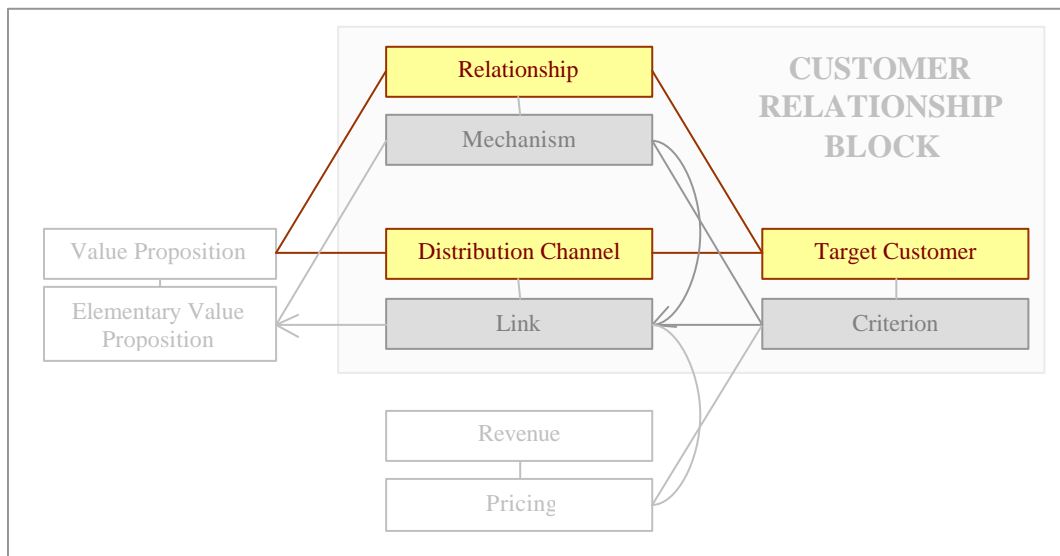


Figure 2: Customer Relationship Ontology

4. Target Customer Element

Selecting a company's target customers is all about segmentation. Effective segmentation enables a company to allocate investment resources to target customers that will be most attracted by its value proposition. The most general distinction of target customers exists between business and/or individual customers, commonly referred to as business-to-business (B2B) and business-to-

consumer (B2C). The TARGET CUSTOMER definition will also help a firm define through which channels it effectively wants to reach its clients.

Name of BM-Element	TARGET CUSTOMER
Definition	A TARGET CUSTOMER segment defines the type of customers a company wants to address.
Part of	CUSTOMER RELATIONSHIP
Related to	VALUE PROPOSITION
Set of	CRITERION(s) (see figure 3)
Cardinality	1-n

Segmentation has a long history and goes back to the 1950s (Winter, 1984). But even nowadays, in the one-to-one marketing era, where customers can potentially be addressed one by one, market segmentation keeps its value. In fact, ICT helps companies make the strategic choice to target their market at any level between “mass” and “one-to-one by balancing revenue against cost (Wedel, 2001).

Especially post-hoc market segmentation techniques like data mining, multidimensional segmentation and data clustering with artificial neural networks can lead to more efficient marketing and enhance profitability (Neal and Wurst, 2001).

With the expansion of reach through ICT, such as the Internet, companies increasingly target not only groups that are geographically localisable, but also widely dispersed online communities with common characteristics. Hagel and Armstrong (1997) divide these into communities of transaction, interest, fantasy and relationship.

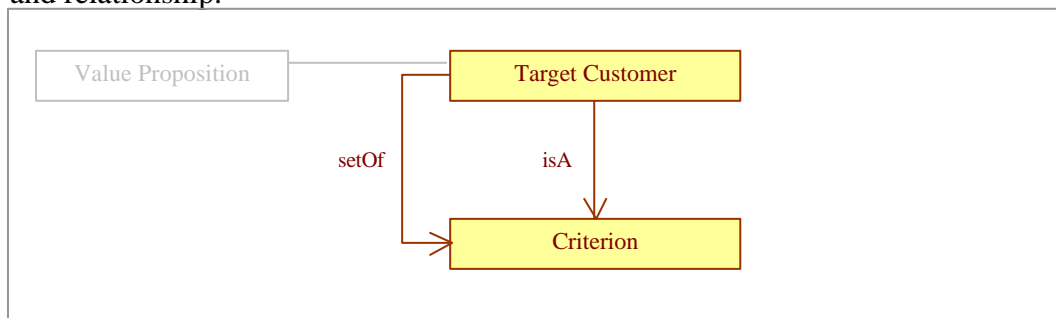


Figure 3: Target Customer

5. Criterion Element

In order to refine a customer segmentation companies decompose a TARGET CUSTOMER segment into a set of characteristics, which we call CRITERION. These could be of geographical or socio-demographic nature (Kotler, 1999).

Name of BM-Element	CRITERION
Definition	A CRITERION defines the characteristics of a TARGET CUSTOMER
Element of	TARGET CUSTOMER
Cardinality	0-n

6. Channel Element

Distribution channels are the connection between a firm's VALUE PROPOSITIONs and its TARGET CUSTOMERs (see figure 4). A CHANNEL allows a company to deliver value to its customers, either directly, for example through a sales force or over a Website, or indirectly through intermediaries, such as resellers, brokers or cybermediaries. The topic of channels has become exciting in recent years with the proliferation of new successful channels and the promise of a stream of more new ones resulting from advances in ICT (Wyner 1995). But this magnitude of change demands a strategic perspective that views channel decisions as choices from a continually changing array of alternatives for achieving market converge and competitive advantage (Anderson, Day et al. 1997). ICT, and particularly the Internet, has a great potential to complement rather than to cannibalize a business's existing channels (Porter 2001; Steinfield, Bouwman et al. 2002). However, selling through several channels simultaneously eventually causes channel conflict when they compete to reach the same set of customers (Bucklin, Thomas-Graham et al. 1997).

Name of BM-Element	CHANNEL
Definition	A CHANNEL describes how a company gets in touch with its customers. Its purpose is to make the right quantities of the right products or services available at the right place, at the right time to the right people (Pitt, Berthon et al. 1999) - subject of course, to the constraints of cost, investment, and flexibility (Anderson, Day et al. 1997). A CHANNEL links a company's VALUE PROPOSITION to its CUSTOMER(s) and can be maintained by a firm itself or by its partners. Normally a firm disposes of one or several direct or indirect CHANNEL(s) that can be decomposed into their CHANNEL LINK(s).
Part of	CUSTOMER RELATIONSHIP
Inherits from	CHANNEL LINK
Related to	<i>Delivers</i> VALUE PROPOSITION (1-n) <i>Delivers to</i> TARGET CUSTOMER (1-n)
Set of	CHANNEL LINK(s) (0-n)
Cardinality	1-n
Attributes	Inherited from the CHANNEL LINK element (see figure 4 and next section)

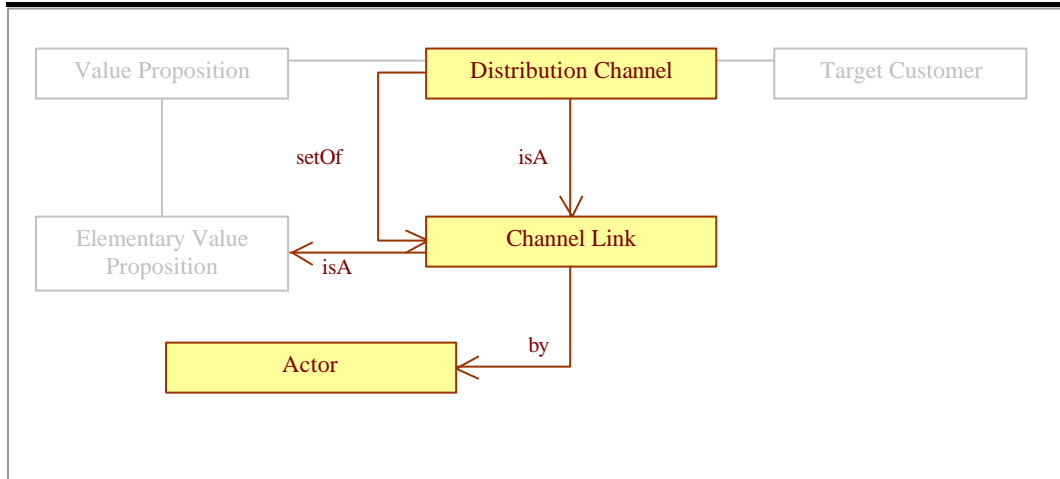


Figure 4: Distribution Channel

7. Channel Link Element

While the CHANNEL element gives an aggregated view of how a company reaches its customers it can be further decomposed into its CHANNEL LINK(s). We do this because channels are not the basic building blocks of a marketing systems; the channel tasks or roles are (Moriarty and Moran 1990).

Name of BM-Element	CHANNEL LINK
Definition	A CHANNEL LINK describes a part of a firm's CHANNEL and illustrates specific marketing roles. A set of CHANNEL LINK(s) together represent a CHANNEL. The CHANNEL LINK(s) of the different CHANNELs may sometimes be interrelated, in order to exploit cross-channel synergies. In addition to the traditional role of simply delivering value, modern channels and their CHANNEL LINKs increasingly have a potential for value creation and thus contribute to a firm's VALUE PROPOSTION (Wyner 1995)
Element of	CHANNEL
Related to	A CHANNEL LINK can be <i>connected to</i> an other CHANNEL LINK The channel role described by a CHANNEL LINK is <i>delivered by</i> an ACTOR
Cardinality	0-n
Attributes	Name Description Reasoning Customer Buying Cycle Value level

	Price level
--	-------------

NAME: This attribute captures the name of the CHANNEL LINK

DESCRIPTION: This attribute captures a narrative description of the CHANNEL LINK

REASONING: A CHANNEL LINK can (but does not necessarily have to) contribute to value creation in three distinct ways: Either through *use*, reducing *risk* or reducing a customer's *efforts* (Osterwalder and Pigneur 2002).

Use

ICT has extended simple distribution channels to value adding components of value propositions. Corporate Websites for instance are a place for ordering products, a source for product and service information, for online problem solving and specific after sales services.

Risk (based on Kambil et al. (1997))

A CHANNEL LINK may also reduce risk. A relatively inexperienced customer buying a PC over the Internet may have the higher risk of buying an inappropriate model than in a specialized store with vendor assistance. Although these two channel functions fulfil the same role, the store adds value for the specific segment of inexperienced PC buyers by reducing their risk of making a bad choice.

Efforts

One of the most recognized impacts of ICT on channels and value creation has been on the reduction of customer efforts. This can be through online ordering, troubleshooting, offering manuals, FAQs or even direct links to product engineers.

CUSTOMER BUYING CYCLE: A channel should be studied over the customer's entire buying cycle. Therefore we create an attribute, which has the goal of identifying which one of the functions of the customer buying cycle a CHANNEL LINK fulfils (based on (Ives and Learmonth 1984; Ives 1999; Muther 2002)). The customer buying cycle reflects all possible contact points between a supplier and a customer (Muther 2002). The cycle is divided into four phases, namely the customer's *awareness*, his *evaluation* of the company's VALUE PROPOSITION, the moment of *purchase* and *after sales* (see figure 5).

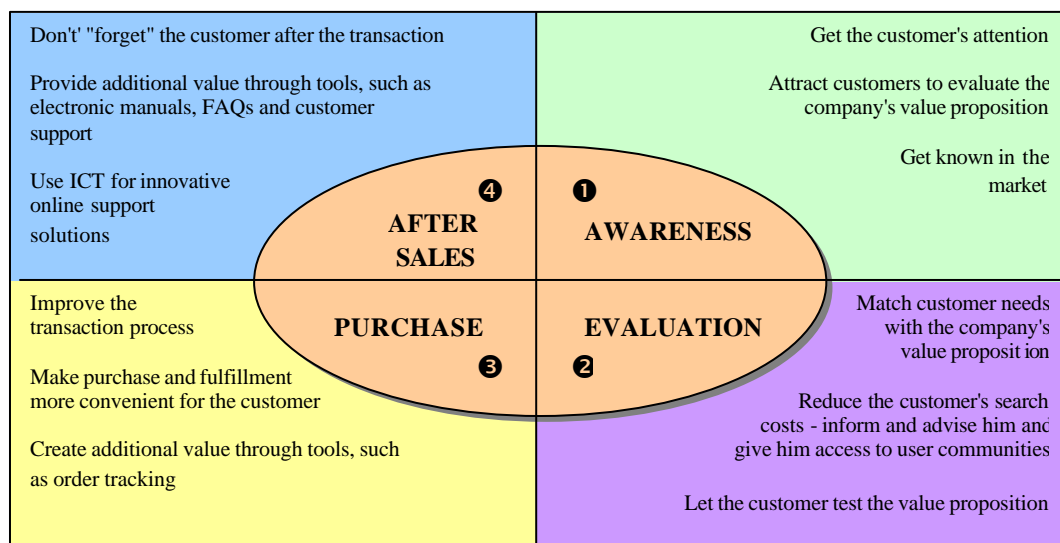


Figure 5: Customer Buying Cycle (CBC)

Awareness

At this stage of the Customer Buying Cycle the customer identifies a company's VALUE PROPOSITION that may match his needs. He develops an awareness that an organization exists and that it might be able to fulfil his requests. The company tries to reach its TARGET CUSTOMER segments by means of advertising, promotions, public relations and partnerships. Amazon.com also used affiliated Websites to attract customers. Affiliate or associate programs pay commissions to people or companies that refer visitors to their products or services.

Evaluation

Once a customer has identified a specific firm as a potential solution provider to his problem or his needs he will want to learn more about the organization and the bundle of products and services it offers. As mentioned earlier, ICT helps firms improve reach and richness of the information they offer (Evans and Wurster 1997), which helps customers evaluate a firm's VALUE PROPOSITION. Besides traditional sales forces or value added resellers (VAR), companies increasingly make use multimedia applications to help customers in their evaluation process. Several tools, such as Online Chat, Voice-over-IP or Web cams streamline the consulting process and may make physical face-to-face contact unnecessary. Further, customers may also want to rely on more independent information from user communities or consumer groups.

Purchase

During the purchase phase the actual transaction takes place. This includes negotiation, decision, contract, order & tracking, billing & payment and fulfilment. Whereas negotiation, decision and contracting are very important in B2B they are less significant in B2C. However, electronic channels may help to streamline the purchasing process and add value through "memorizing" customer information or through real-time order tracking.

After sales

This last phase of the buying cycle has the potential to create loyal customers. After sales services enormously contribute to a customer's satisfaction by helping him maximize profiting from the value proposition and by assisting him in case of problems. It can embrace implementation, use, training, maintenance, monitoring, troubleshooting and reverse logistics (i.e. disposal).

VALUE LEVEL: If a CHANNEL LINK contributes to the company's VALUE PROPOSITION we measure its value level. To do this we have created a qualitative value scale that relates to the value offered by competitors rather than using a quantitative scale that ranges from low to high. Our measure goes from *me-too* value (e.g. commodities), over *innovative imitation* (e.g. pocket pc) and *excellence* (e.g. Swiss watches) to *innovation* (e.g. Viagra in the 90's) (Osterwalder and Pigneur 2002).

PRICE LEVEL: If the CHANNEL LINK costs the customer something we indicate its relative price level compared to the firm's competitors. The scale goes from *free* (e.g. online newspapers) over *economy* (e.g. Southwest, EasyJet, RyanAir) and *market* (e.g. stocks) to *high-end* (e.g. Rolex) (Osterwalder and Pigneur 2002).

8. Channel strategy

Companies reach their customers through various different channels. While the sports brand The Gap owns a network of over 2000 retail stores, Tupperware sells its food storage containers through over 950'000 independent Tupperware "consultants". The car manufacturer BMW reaches its customers in the United States through about 300 franchised dealers selling its automobiles, but designs and implements national advertising itself (Dolan 2000). The computer manufacture Compaq (now HP) sells its products primarily through third-party resellers, whereas Dell concentrates on direct channels, such as the Internet and telephone. These examples illustrate just some of the multiple ways to go to market, while the advances in ICT promise even more to come (Wyner 1995). This evolution increases the complexity of channel issues and demands an integrated approach to channel design. Therefore we propose a tool for channel design and management that is based on the Customer Buying Cycle (Ives and Learmonth 1984; Ives 1999; Muther 2002) and the so-called Hybrid Grid (Moriarty and Moran 1990; Dolan 2000).

This tool consists of a matrix with the different phases of the customer buying cycle on the one axis and a company's range of CHANNELs on the other axis. We illustrate this in figure 6 with a simplified example of the mobile phone manufacturer Nokia, who has a wide range of virtual, physical, owned and partner CHANNELs. The boxes in figure 6 which you find at the intersection of the CHANNELs and the four phases of the customer buying cycle represent the aggregated CHANNEL LINKs of the company. These CHANNEL LINKs are connected to each other inside and/or across different CHANNELs. Nokia's most important sales channels are the national mobile phone network operators, which sell the bulk of its phones, and, the various electronics or other retailers. But the other channels, such as Nokia.com, Club Nokia or Nokia Academy (a place to learn about Nokia phone features) also have a very important role to play. Club Nokia, for instance, re-establishes a direct communication link between Nokia and the final customer, which has traditionally been the operators' sphere of influence. This link has an enormous value in loyalizing customers, selling them additional products and collecting information on their behaviour.

Erreur ! Il n'y a pas de texte répondant à ce style dans ce document.

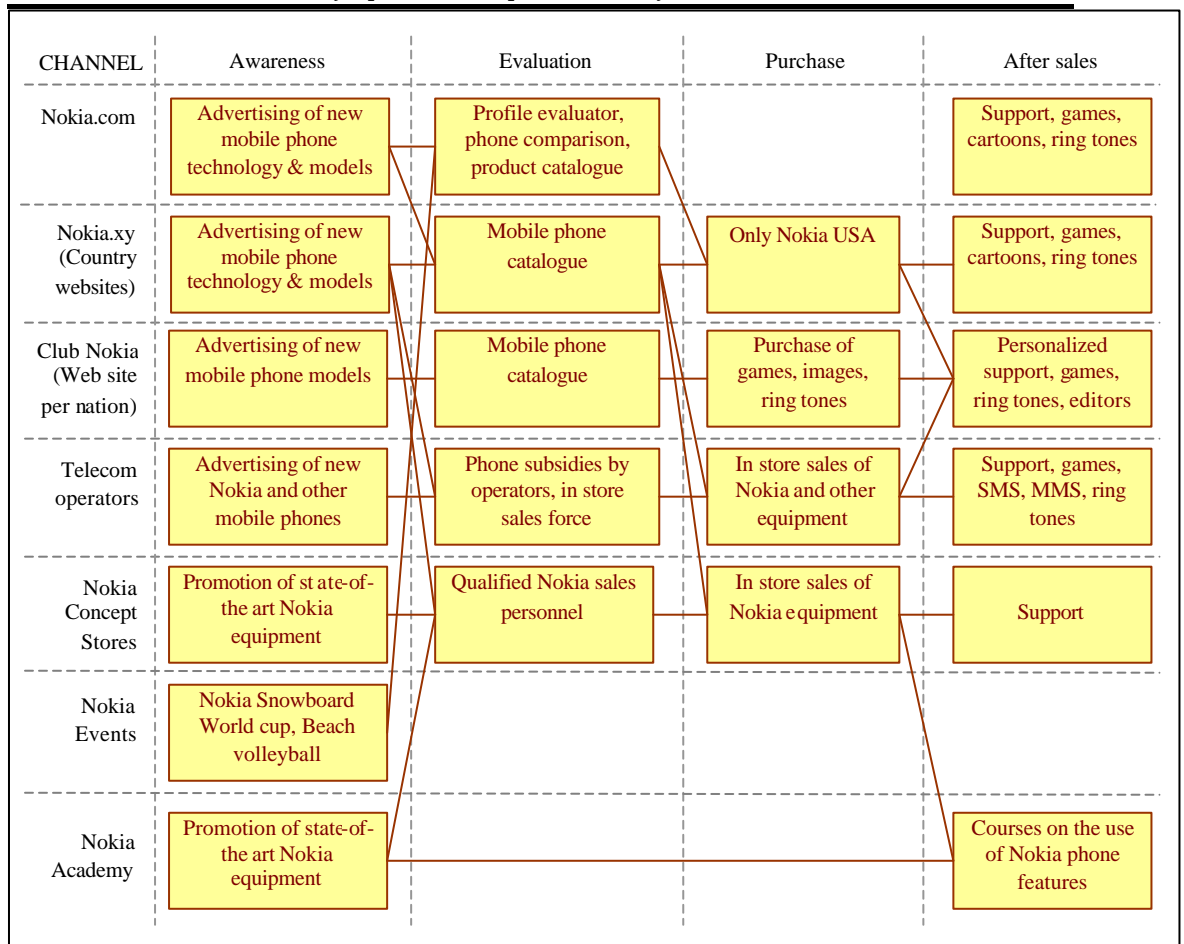


Figure 6: Channel Strategy at Nokia Mobile Phones

9. Channel Conflict

An important element of a channel strategy is managing channel conflicts. When more than one channel competes for the same customers there is a high chance of channel conflict (Bucklin, Thomas-Graham et al. 1997). An illustrative example is the one of the computer manufacture Compaq (now HP), a company that sells a majority of its products through resellers. When it started to copy Dell's direct channel strategy in the late 90's it drew a hostile reaction from its resellers, who correctly felt the company was competing with them. This conflict delayed the introduction of a new direct channel (HBSS 1999). In the record industry the majors, such as Sony Music, EMI or Warner Music long hesitated to introduce digital music distribution (e.g. online channels, MP3 players, in-store CD burning) because they were frightened of profit cannibalisation, channel conflict and illegal copying. Sony for instance, who disposes of a huge consumer electronics and a strong music department, could have easily introduced a device capable of storing and playing the popular digital music format MP3. But Sony was not favourable to the proliferation of its content in a digital form. The record companies' hesitation to act on the Internet was an even bigger disaster, because through their initial indecision to introduce a viable online distribution channel the market was soon dominated by free music trading platforms, like the infamous Napster.

Though the record companies avoided profit cannibalisation and channel conflict with traditional retailing (i.e. retailing) they let customers get used to free content (although mostly illegal). Clearly, evaluating the trade-off between channel conflict, cannibalisation and introducing new channels is a difficult task.

10. Relationship Element

Besides the customer interaction points (i.e. channels), companies must also analyze the nature of the interactions, because they affect the strength of the relationship a company builds with its customers. But as interactions come at a given cost, firms must carefully define what kind of relationship they want to establish with what kind of customer. Profits from customer relationships are the lifeblood of all businesses. These profits can be achieved through the acquisition of new customers, the enhancement of profitability of existing customers and the extension of the duration of existing customer relationships (Grant and Schlesinger 1995). Companies must analyze customer data in order to evaluate the type of customer they want to seduce and acquire, are profitable and worth spending retention efforts and are likely to be subject to add-on selling (Blattberg, Getz et al. 2001). The trend to move from simple transactions to more complex customer relations makes sense, since an arsenal of new ICT tools has made this possible at reasonable costs.

Name of BM-Element	RELATIONSHIP
Definition	The RELATIONSHIP element describes the relationship a company establishes with a target CUSTOMER SEGMENT. A RELATIONSHIP has a goal and can be decomposed into several RELATIONSHIP MECHANISMs.
Part of	CUSTOMER RELATIONSHIP
Inherits from	RELATIONSHIP MECHANISM
Cardinality	1-n
Attributes	Goal All other attributes are inherited from the RELATIONSHIP MECHANISM (see figure 7 and next section)

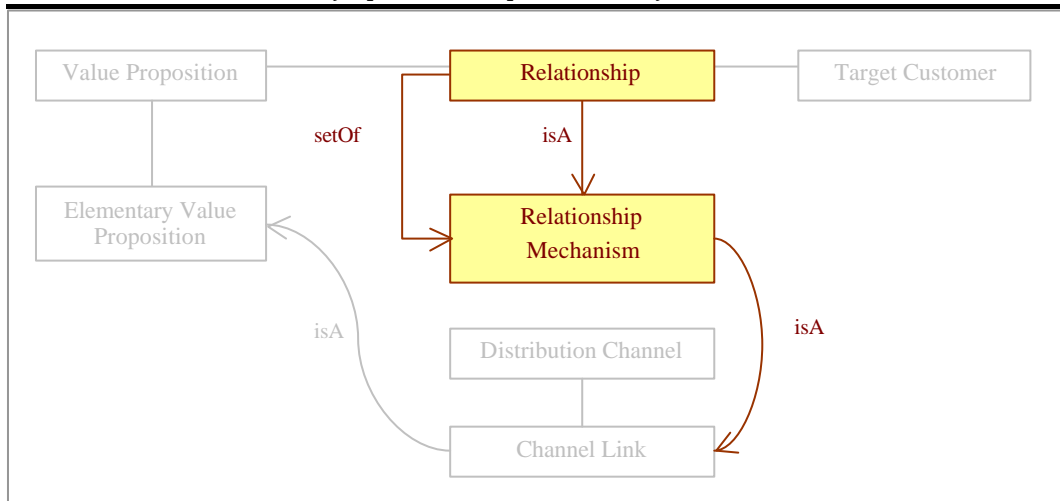


Figure 7: Relationship Element

GOAL: In our framework we classify relationships according to their goals which are acquisition, retention and add-on selling (Blattberg et al., 2001).

Acquisition

It's very straightforward to say that companies must acquire customers to make business. Even firms with high retention rates lose customers and thus must continuously acquire new customers to stay in business. Because customer acquisition is a very expensive affair and because the relationship developed during the acquisition phase strongly influences retention and add-on selling it must be carefully managed and evaluated. Hewlett Packard, for instance, sells very cheap inkjet printers and makes money from ink cartridges. Many mobile phone operators subsidize new and expensive mobile phone models to make them affordable to customers and cash in on the new services they can sell them (e.g. data and multimedia services).

Retention

The goal of customer retention is to leverage customer acquisition investments. Because customer acquisition is normally more expensive than retention it makes sense to find ways and mechanisms to extend the duration of the relationship between firm and customer. Of course the focus must be set mainly on the most profitable customers. Blattberg et al. (2001) mention the following drivers that affect customer retention: customer expectation versus delivered quality, the value of the good or service, product uniqueness and suitability, loyalty mechanisms, ease of purchase, customer service and ease of exit. In our model we consider only the mechanisms that can be directly assigned to retaining customers, such as loyalty programs, customer defection programs or installing switching cost. An customer changing airlines will lose his loyalty "miles", while a customer leaving Amazon.com will have to re-enter his personal data, re-create his wish lists, and re-create a profile for personalized book recommendations based on purchase history.

Add-on selling

Add-on selling is the activity associated with selling any additional products and services to current customers (Blattberg, Getz et al. 2001). These products can, but do not necessarily have to be related to each other. getAbstracts.com, a start-up that sells abstracts of business books online also allows its customers to purchase these books directly over their website. Telecommunication companies

and recently also mobile phone operators try to increase their revenues by selling their existing customers additional data services.

11. Relationship Mechanism element

A RELATIONSHIP MECHANISM is a specific mechanism that has a function in relationship building with a company's customers. It can contribute to personalization, trust and brand building.

Name of BM-Element	RELATIONSHIP MECHANISM
Definition	A RELATIONSHIP MECHANISM is part of a RELATIONSHIP and describes the function it accomplishes between the company and its customers. It may also be a CHANNEL LINK or a part of the VALUE PROPOSITION.
Element of	RELATIONSHIP
Inherits from	CHANNEL LINK
Cardinality	1-n
Attributes	Function Inherits the other attributes from the CHANNEL LINK element (see figure 7 and section 7)

FUNCTION: This attribute describes which function the REALTIONSHIP MECHANISM fulfils. It can personalize a relationship, contribute to customer trust, or contribute to brand building.

Personalization

Historically, vendors had a personal relationship with their customers (e.g. the Mom and Pop grocery store where the shopkeeper knows every client personally and is familiar with his needs and habits). But the size of today's companies, their lower employee-to-customer ratios and the high turnover among employees has made personal one-to-one human relationships between customer and supplier rare. ICT now allows companies to re-introduce a more personalized relationship with their customers at a reasonable cost. Customer profiles with historical buying behaviour, tastes and needs and their contact history with the firm are stored in large databases. Afterwards, this data can be used to simulate a kind of Mom and Pop store relationship. But personalization does not necessarily mean a one-to-one relationship. Rather it could also mean personalizing for a group of customers with common characteristics, which is known as one-to-tribe marketing (reference xxx). The choice between one-to-one and one-to-tribe depends on the relationship a company wants to establish and the cost factor.

An important field of personalized mechanisms is one-to-one marketing. This is nothing else than tailoring marketing activities to specific customers, their needs, behaviour and their particular transaction history. Imagine the impact on customer loyalty of an airline customer that by accident has taken two delayed flights the same week. Wouldn't he be pleased if his airline were able to detect this incidence and address him personally with an excuse letter or maybe even a goodie?

Another field of one-to-one marketing are so-called personalized product recommending systems, which are based on attributes, item-to-item correlation or user-to-user correlation (Schafer, Konstan et al. 2000). The first technique is

based on a set of rules that makes recommendations derived from a customer's profile of attributes. The second technique identifies items frequently found in association with items in which a customer has expressed interest. The third technique, also known as collaborative filtering and to date the most powerful method (Sarwar, Karypis et al. 2000), recommends products to a customer based on the correlation between that customer and other customers who have a similar purchase behaviour.

Trust

"Trust of a party A in a party B for a service X is the measurable belief of A in that B will behave dependably for a specified period within a specified context" (Dimitrakos 2001). This shows that the notion of expectation is central to the concept of trust (Jones 2002). In a business environment that has become increasingly global, transactions more and more virtual and where the implicated parties do not necessarily know each other anymore before conducting business, new trust mechanisms have gained importance. ICT offers a large range of innovative or improved mechanisms to build trust in e-business environments (Friedman, Kahn et al. 2000) by improving the expected output of a transaction. Especially the role of reputation in contributing to trust has received a boost through ICT. The large body of literature on this subject shows how reputation is based on independent user communities (Hagel and Armstrong 1997; McWilliam 2000), dedicated reputation systems or third parties. Labelling services, such as TRUSTe's Privacy Seal (McKnight, Choudhury et al. 2000), certification services as provided by VeriSign, or authorization and verification services are just some of the trust mechanisms offered by third parties. Further, rating companies also receive much attention by customers. SmartMoney.com, the online branch of the well-known investor's magazine provides annual ratings of online and offline brokers and a fancy little tool called "broker meter" that will show you how fast your broker's site is compared to other brokers.

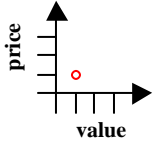
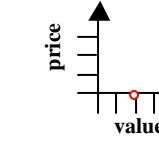
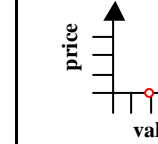
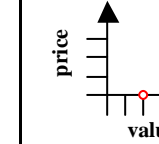
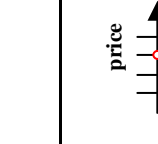
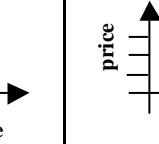
More traditional, but often ICT enhanced trust instruments are mediation services in case of disputes or insurance guaranties to prevent financial loss. Technology and its perception can also play a role in establishing trust. Credit card transactions on the Internet, for example, are often perceived as particularly insecure, even though it might be more dangerous to hand over your credit card to a malicious waitress in a restaurant.

Brand

Brands constitute a pivotal resource for generating and sustaining competitive advantage (Aaker 1989). They help creating a distinction among entities that may satisfy a customer's need (Berthon, Hulbert et al. 1999) and they help the communications programs do not inadvertently send conflicting or confusing messages to customers (Joachimsthaler and Aaker 1997). Nokia, the Finnish mobile phone manufacturer, established an incredibly strong brand in the mobile phone market by creating an image of a young and dynamic innovator. It achieved this through sponsoring such events as the Nokia Snowboard World Cup tour and a number of top-ranked beach volleyball professionals. Further, Nokia also uses ICT for branding purposes. Owners of a Nokia phone can join the Club Nokia online by entering the serial number of their phone and then benefit from games, cartoons, movies, images and ring tones. This branding strategy proved to be very successful resulting in a No.6 ranking in Interbrand's year 2002 list of the world's top 100 brands (Bensinger 2003).

11. Mini case: Customer relationships at Orange Switzerland

Orange is one of the three mobile telecommunication operators in Switzerland and is a 100% subsidiary of France Télécom. With about 1'600 employees, 78 points of sale and its Network that covers 98% of the Swiss population it makes a turnover of CHF475 million and an EBIDTA of CHF33 million. Besides building and maintaining its networks, managing customer contracts belongs to Orange's main business tasks. In the following lines we outline a part of the company's relationship strategy in acquisition, retention and add-on selling by using the framework described in this chapter. The columns represent the RELATIONSHIP elements and the RELATIONSHIP MECHANISM elements of Orange and the lines represent the elements' attributes. It remains to be said that besides the elements outlined below, Orange maintains a number of sponsorships, such as OrangeCinema, OrangeOpera and HandyHero in order to contribute to brand building.

Goal	Acquisition			Retention		Add-on selling	
Relationship description	Orange tries to make new phone models affordable and tries to be present in the market as a young brand for communicating human emotions.			Orange rewards its customers with points for their loyalty and the use of their mobile phones. These points can be used to buy a new mobile phone		Orange tries to make customers use SMS and MMS as much as possible (especially teenagers).	
Name of the relationship mechanism	Phone subsidies	Orange World portal	Habbo Hotel	Loyalty points	Location based services	SMS Publisher	Orange Heartbreak
Relationship mechanism description	Orange pays a part of or the whole price of a new phone a customer wants to buy in exchange for a 12-month contract with Orange	A portal that provides a mixture of news, sports, entertainment and mobile phone features, such as games. Customer login for Orange phone account management	A virtual meeting place with public and private rooms where people can gather and chat, handle e-mail, instant messages and SMS'	-	Use: Location based services are	A tool that allows customers to create their own SMS-channel to send information to channel-subscribers	SMS-based services that allow (teen) customers to flirt anonymously by using their mobile phone
Reasoning	Risk: Minimizes the risk to be stuck with an expensive phone that is soon outdated. Use: Customers can afford the newest mobile phones with the newest phone features (e.g. MMS)	Use: Provides customers and prospects with an information portal and mobile entertainment services. Allows customers to manage their phone account	Use: Provides potential (teen) customers with a place to hang out and manage their e-mail, instant messages and SMS'.	Risk: Minimizes the risk to be stuck with an expensive phone that is soon outdated. Use: Customers can afford the newest mobile phones with the newest phone features (e.g. MMS)		Use: Allows customers to send information to a list of people that are interested in the same topics (e.g. info for the members of a hobby soccer team)	Use: Allows teenagers to resolve the most pressing problems of their age - love issues – without losing their face.
Customer Buying Cycle	Evaluation	Awareness	Awareness	After Sales	After Sales	After Sales	After Sales
Value level/ price level							
Function	-	Brand	Brand	-		Personalization	-
Channel	Orange shops Retailers	Internet	Internet	-		Mobile phone Internet	-
By	Self	Self	Self	Self		Self	Self
Target customer	All prospects	Customers and prospects	Teen customers and prospects	All current customers		Active teen customers	Teen customers

12. Conclusion

The Customer Relationship Ontology helps managers formally define which customer segments they want to offer value, through which channels they want to do this and by establishing what relationship. By using such a rigid approach, customer relationships become communicable, comparable, analyzable and easily modifiable because of the building-block-like structure. On the one hand this should improve communication between managers, middle managers, process modelers and Information Systems staff. On the other hand this should foster innovation in customer relationship management, because modelers can easily “play around” and experiment with the building blocks of the model presented in this paper. It is to be further explored if this ontology could also facilitate business and IT strategy alignment. Finally, to understand how a company’s customer relationship management contributes to the entire business logic it must be analyzed as part of the more global business model ontology by Osterwalder & Pigneur (2002), which additionally embraces the product innovation, the infrastructure management and the financial aspects of a firm.

13. References

- Aaker, D. A. (1989). "Managing Assets and Skills: The Key to Sustainable Competitive Advantage." *California Management Review* **31**(2): 91-106.
- Anderson, E., G. Day, et al. (1997). "Strategic Channel Design." *Sloan Management Review*.
- Bensinger, A. (2003). The Call on Nokia: Buy, Business Week Online. **2003**.
- Berthon, J.-P., J. Hulbert, et al. (1999). "Brand Management Prognostications." *Sloan Management Review* **40**(2): 53-55.
- Blattberg, R., G. Getz, et al. (2001). *Customer Equity*. Boston, Harvard Business School Press.
- Bucklin, C., P. Thomas-Graham, et al. (1997). "Channel conflict: When is it dangerous?" *McKinsey Quarterly*(3).
- Dimitrakos, T. (2001). *System Models, e-Risks and e-Trust*. IFIP I3E, Zurich, Kluwer Academic Publishers.
- Dolan, R. (2000). *Going to Market*. Boston, Harvard Business School.
- Evans, P. and T. Wurster (1997). "Strategy and the New Economics of Information." *Harvard Business Review*.
- Friedman, B., P. Kahn, et al. (2000). "Trust Online." *Communications of the ACM* **43**(12).
- Grant, A. and L. Schlesinger (1995). "Realize Your Customers' Full Profit Potential." *Harvard Business Review*: 59-72.
- Hagel, J. and A. Armstrong (1997). *Net Gain: Expanding Markets through Virtual Communities*. Boston, Harvard Business School Press.
- HBSS (1999). *The Network Economy*, Harris Bretall Sullivan & Smith L.L.C.
- Ives, B. (1999). *Customer Service Life Cycle*, Center for Virtual Organization and Commerce, Louisiana State University. **2002**.

- Ives, B. and G. Learmonth (1984). "The information system as a competitive weapon." *Communications of the ACM* **27**(12): 1193-1201.
- Joachimsthaler, E. and D. A. Aaker (1997). "Building brands without mass media." *Harvard Business Review* **75**(1): 39-37.
- Jones, A. (2002). "On the concept of trust." *Decision Support Systems* **33**(3): 225-232.
- Kambil, A., A. Ginsberg, et al. (1997). *Rethinking Value Propositions*. New York, NYU Center for Research on Information Systems.
- Markides, C. (1999). *All the Right Moves*. Boston, Harvard Business School Press.
- McKnight, D. H., V. Choudhury, et al. (2000). *Trust in e-commerce vendors: a two-stage model*. International Conference on Information Systems (ICIS), Brisbane, Association for Information Systems.
- McWilliam, G. (2000). "Building Stronger Brands through Online Communities." *Sloan Management Review*: 43-54.
- Moriarty, R. and U. Moran (1990). "Managing Hybrid Marketing Systems." *Harvard Business Review*.
- Muther, A. (2002). *Customer Relationship Management - Electronic Customer Care in the New Economy*. Heidelberg, Springer.
- Osterwalder, A. and Y. Pigneur (2002). *An e-Business Model Ontology for Modeling e-Business*. Bled Electronic Commerce Conference 2002, Bled, Slovenia.
- Peterovic, O., C. Kittl, et al. (2001). *Developing Business Models for eBusiness*. International Conference on Electronic Commerce 2001, Vienna.
- Pitt, L., P. Berthon, et al. (1999). "Changing Channels: The Impact of the Internet on Distribution Strategy." *Business Horizons*.
- Porter, M. (2001). "Strategy and the Internet." *Harvard Business Review*.
- Sarwar, B., G. Karypis, et al. (2000). *Analysis of Recommendation Algorithms for E-Commerce*. ACM Conference on Electronic Commerce.
- Schafer, B., J. Konstan, et al. (2000). "E-Commerce Recommendation Applications." *Journal of Data Mining and Knowledge Discovery* **5**(1/2): 115-152.
- Stähler, P. (2002). *Business Models as an Unit of Analysis for Strategizing*. International Workshop on Business Models, Lausanne, Switzerland.
- Steinfeld, C., H. Bouwman, et al. (2002). "The dynamics of Click-and-Mortar Electronic Commerce: Opportunities and Management Strategies." *International Journal of Electronic Commerce* **7**(1): 93-119.
- Wyner, G. (1995). "Researching Channels." *Marketing Research* **7**(3): 42-44.