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Strategies for the Financial Services Industry in the Internet Age*

by
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Abstract

Globalization of financial markets resulting from both IT (particularly internet standards) and increasing homogeneity of regulation has strongly affected the environment, financial services companies are operating in. Given these changes on the market, innovation is not a choice, but a necessity to survive. Observable today, however, are defensive strategies and poor service quality. In this paper based on investments in trust relationships with customers we propose Sophistication (fit) Banking enabled by IT and qualified staff and show first steps towards the implementation of a sophistication banking strategy. While traditional markets are characterized by shrinking margins and declining shareholder values, which can easily be explained by considering the digital character of financial products, new intermediaries for customer-centered Sophistication (fit) Banking have the opportunity of becoming spiders in the web and increasing shareholder values constantly.

I. INTRODUCTION

The market for financial services is undergoing a major shift towards the end of the second millenium. Mainly driven by information technology (IT) development, the market has seen a wave of mergers, competition has intensified and working patterns are changing dramatically. In this setting it is more important than ever for incumbents to have the right strategy in order to generate an adequate value for their shareholders. The authors suggest and justify an IT enabled Sophistication Banking approach, which is illustrated in this paper.

The remainder of this paper is organized as follows. The mega-trends changing the environment of the firms operating in the financial services industry are described and the impacts of these mega-trends in this market are discussed (Section 2). Based on our research results of the last years and on our practical experience from projects with partners such as Advance Bank, Hypovereinsbank and Deutsche Bank, some predictions of future market developments are discussed and strategic options are identified on a qualitative level (Section 3). In Section 4 we justify why we think Sophistication Banking is a superior strategy and present an implementation design for it including examples of the potential of the new approach. In section 5 we will provide some of the conceptual steps to become a sophistication bank. The article concludes with a short summary in Section 6.

II. MEGA-TRENDS IN FINANCIAL SERVICES

When discussing about mega-trends today there is no doubt that there is one development that will have the most impact on the financial services industry in the next centuries. “It is a power that is revolutionizing equities trading, a power likely to spread into core investment banking, in the process stripping away the inefficiencies previously integral to the financial system.” (Euromoney, 1991) It is the rise of IT, especially of the Internet and its multimedial and interactive service, the world wide web (WWW). The authors first of all see three outstanding reasons for this, namely the new quality in communication, the change in (working)

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life circumstances and the ongoing deregulation in many economic sectors. Let us look at these in more detail in the following paragraphs.

New Quality in Communication

Picking-up the first reason, the Internet enables non-face-to-face communication not only adequate for "basic" financial services like managing a current account or a stock order. It also supports complex consultations in order to generate high-level solutions for financial problems like real estate financing (Advance Bank, 2001). At the same time a huge number of people – everyone who is connected to the Internet – can be reached at nearly no costs. "The rapid emergence of universal standards for communication (is) allowing everybody to communicate with everybody else at essentially zero cost" (Evans & Wurster, 1997) . So with the Internet the former diversity between richness and reach of communication has vanished (See Figure 1) (Evans & Wurster, 1997). Former barriers of entry like a set of branches or a big sales force that took years to establish were forced down by this to a few months and to much less investment.

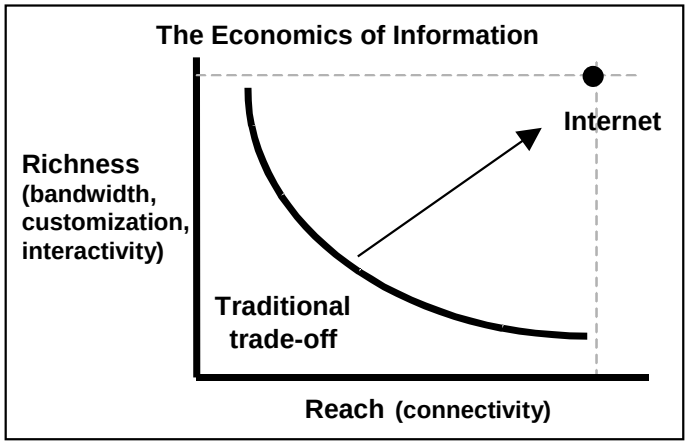

Figure 1: Trade-off between richness and reach

Consequently a lot of new intermediaries used their chance to establish purely web-based and thus relatively cheap and competitive services in the financial service business like the so-called discount-brokers, e.g. e-trade or Consors, or founded completely virtual banks, e.g. the United States netbank. A sharp rise in competition, especially in the field of online-brokerage where costs were cut dramatically is the impressive result of the new possibilities described above. Not only in this area but in many fields of banking, web-based solutions have been established and turn past investments of traditional banks into expensive liabilities and by this to competitive disadvantages. In addition these web-based companies reduce returns for traditional banks by targeting only special and interesting customer segments. This switching of customers to the web based companies is supported by an astonishing lack of quality in consultation by the established players (Finanztest, 2000).
But there is another development that is forced by information technology. So it seems to be likely that the diminishing costs for communication "are forcing firms to become more flexible." (Economist, 1998)

Change in (Working) Life Circumstances

Because now (after the defeat of the traditional economics of information) temporary organizations formed by specialized units that are connected by standardized (internet) communication channels have become possible. These virtual organizations are set together as parts of the former value chain creating new value networks by heavy use of (traditionally prohibitively expensive) communication (systems) and by this become able to better match the demand of the markets. The breakup of the hierarchical organizations brings firms both, opportunities and threats. It "foster(s) entrepreneurship and encourage(s) firms and individuals to exploit new opportunities and move into high value-added activities." (OECD, 1998) On the one hand the creation of virtual organizations or "hyperarchies" (Evans & Wurster, 1997) allows firms to react faster on market changes by recreating the virtual value networks. On the other hand there are impacts of this new organizational form on the ways of working and employment. There is a visible trend that a lot of the members of these virtual companies are freelancers (Abby, 1999) which are specialist in one or more parts of the value network.

The use of IT now offers the opportunity to coordinate these specialized parts and form a "best-of-everything" value network and by this enables to provide an improved solution for customers. The possibility of the fast exchange of the players in this network also allows a more flexible adaptation to changing market and customer needs. However, the income of this group might vary in a wide range. On the low-end there might be a group that is not even able to afford health insurance (Abby, 1999). On the high-end people will earn that much money that they are interested in large financial investments and possible tax savings. Still there is one thing that all of these freelancers have in common: They are not living in the world of regular income and constant cash flows any longer. In combination this means that in the future there will be an increasing number of customers that do not fit the standardized financial products and services of today, which are normally designed to fit to constant monthly income streams.
This trend towards an "income lifecycle" that is not corresponding to the income and asset growth of a lifetime typical after World War II is reinforced by another forseeable development. The number of people who will inherit a lot of money from their ancestors is growing tremendously. For example in Germany the value of money that will be shifted from one generation to the next will rise from 102 billion marks in 1987 to 415 billion marks in 2002. The average amount of money being shifted will increase from 199.100 marks in 1990 to 471.600 marks in 2002 (Spiegel, 1998). This means that there will be a lot of people facing the "problem" to decide at one time what to do with an amount of money they normally would have to work a long part of their life for. This also seems to indicate that there is a growing number of people who have a demand for financial services, that do not require constant income streams. Instead these people need sophisticated solutions that allow them to handle "unusual" amounts of money at one point in time.

Deregulation

Another development that is not enabled by information technology but has also great impact on the financial services sector is deregulation. By suspending the Glass-Steagall Act in 1999 the separation between commercial and investment-banking in the United States that was settled in 1933 has been abolished. In result the conditions for American financial services providers are now similar to the rest of the world. By this the entry in foreign markets for U.S. based companies as well as for the rest of the world in the U.S. is more likely and therefore competition will increase.

In summary, on the one hand the rapid development in modern information and communication technology, especially the Internet, has the consequence of increasing competition in the financial services industry that is also supported by deregulation. On the other hand there is a growing number of people who have no demand for traditional financial solutions, because their income situation does not match to the assumption of periodical income streams. In consequence a lot of innovative products that cover the needs of the described group of customers should be observable in the near future. Hence, in the third section we will have a closer look on the current developments in the financial services industry and the strategic options for financial services firms.

III. STRATEGIC OPTIONS

Having discussed mega-trends of the financial services industry, we will now assess the strategic options for companies that operate in this dynamically changing business environment. In the end, it seems to come back to Porter (Porter, 1985). The decision is whether to pursue to gain cost leadership or whether to differentiate the offered services from other competitors (Steffan, 1997). In the context of the booming Internet industries and the global information network, this has to be examined in more detail.

Mergers and Acquisitions

What we observe in the financial services industry is a splurge of mergers, mainly driven by the objective to lower costs and thus become more competitive in this global market. Some examples of 1999 are Unicredito and BCI (March 99), San Paolo IMI and Banca die Roma (March 99), Fleet and Bank Boston (March 99), HSBC and Repulic New York (Mai 99), Bank of Ireland and Leicester (June 99), and Banca Intesa and BCI (June 99) (see also ECB, 1999; De Swaan, 1999;, Economist, 1999). Obviously, it is impossible to judge the success of a strategy upfront but the authors argue that merging is the wrong strategy basically because of two reasons.

- Firstly, it is a defensive reaction on market trends instead of an offensive action that influences and sets these trends.
- Secondly, in the long run cost leaders offering commodity products on net markets won't be able to generate shareholder value, because competition is driving prices and profit margins down (see e.g. Gölz

& Göppl, 1999). This holds especially true with regard to web-based commodity markets (Kundisch, 2000).

Although the volume of mergers – especially in the financial services industry – has seen two record years in a row, there are in fact still lots of opportunities to combine the business of two or more financial services companies in order to cope with excess capacity. For instance, in the euro area the total number of credit institutions was 8,249 at the beginning of April 1999 (ECB, 1999) while many predictions claim that there is just place for a handful of players in the global battlefield. However, examining research about the success of mergers, there is an astonishingly consistent high number of failures. Though it is difficult to clearly define what a successful merger is, all studies – regardless of the chosen research method – show a failure rate well above 50% (see e.g. CSC, 1998a; AT Kearney, 1998, Bain & Company, 1999). This makes a merger in such a dynamic environment a high-risk-venture instead of giving the new company some relief. Moreover, the best employees are busy merging the company, that is, integrating the IT systems, training the employees in using the new systems, creating a new corporate identity and a shared vision, while the market is dynamically changing at a breathtaking pace. In addition, post-merger costs are often underestimated and the argument that bigger – merged – banks are safer than small ones is not necessarily true (BIS Quarterly Review, 1999).

Differentiation: Sophistication Banking

These disappointing results pose the question, why still so many financial services firms decide to merge. This might stay a miracle from a rationale point of view, especially since there is a choice: Differentiation. In the context of this article we mean by differentiation to become an innovative solution provider. The market for financial services is still dominated by a product and supply side view instead of a customer driven and solution oriented view. Because most financial services companies are organized around products, they have failed so far to fully leverage their relationships with customers and their superior knowledge of customers' lifecycle behavior.

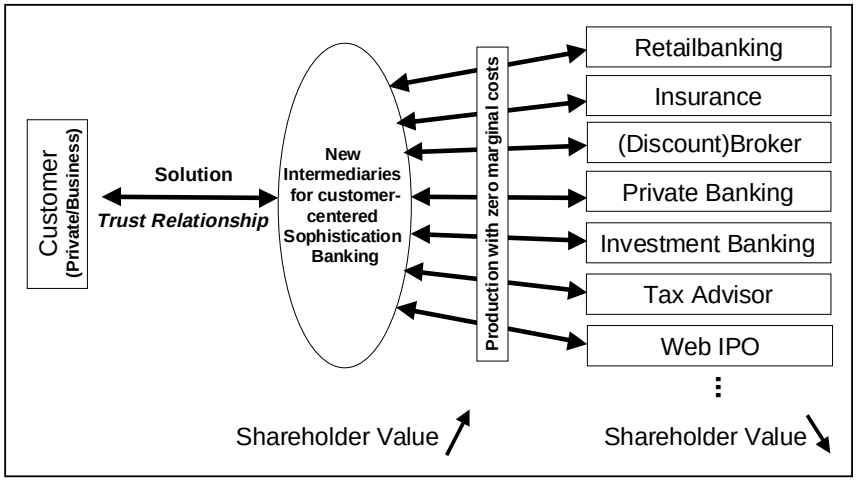

Figure 2: New intermediaries and shareholder value implications

In contrast to Porter's view that was based on the trade-off between flexibility and productivity, on net markets serving the mass market and pursuing differentiation are not mutually exclusive strategies (Piller & Schoder, 1999). Applying state of the art information technology in all business processes enables a company to pursue a hybrid strategy of mass customization – and the market for financial problems with innovative and financially sound solutions is definitely not just a niche, but a mass market with enormous potential. By sound solutions, we mean using Financial Engineering methods to create innovative and intelligent bundles of financial services that optimize a specific objective function

It is important to note the difference between a cost leader producing commodity banking products and a solution provider producing highly individualized and tailored solutions (Buhl & Wolfersberger, 2000a) to the customer. On the one hand, in the future the first one might not even have customer contact anymore and just serve as a "production bank" (Buhl & Wolfersberger, 2000b) for the solution provider delivering commodity banking products. In a competitive environment prices will be driven down to marginal costs. Obviously, banking products are digital products and their marginal costs are (close to) zero. Hence, we argue that in the long run most financial services companies pursuing a cost leader strategy will not be able to generate an adequate shareholder value. On the other hand, the solution provider (also: relationship manager)

takes care of a highly valuable asset: The contact to the customer, that includes a lot of information about his preferences and objectives as well as his trust (See Figure 2). Information can be gathered, formalized and processed in order to achieve a win-win-situation for the customer as well as for the solution provider, since particularly tailored solutions can be offered by Data Warehouse and Data Mining techniques.
It is vital for a solution provider to be as independent as possible from the "production banks", since regulative, legal, institutional and other settings may change quickly. In result, the ingredients (i.e. products) of solutions may change at the same pace. These changes should not force the customer to switch to a new supplier, instead a sophisticated solution provider should be able to adjust its process of finding a solution and eventually find new cost leading "production banks" that deliver the needed products at the best price. How a relationship manager should leverage its customer relation best, will be discussed in the next section.

IV. IS IT-ENABLED SOPHISTICATION BANKING A SUPERIOR STRATEGY?

As outlined above in the traditional financial services markets we observe poor quality of consultation and service (not only for retail customers, but also for high end customers in private (investor) banking (Buhl, Huther, Reitwiesner, Schroeder, Schneider, Tretter, 2000) and for small/mid-size corporations), increasing customer willingness to switch banking affiliations and thus strong pressure on margins. At the same time financial services firms are facing increasing risk from (also IT-driven) continuously increasing volatile global markets. Thus according to Drucker (Drucker, 1999) they only have two options, namely to either innovate or die.

Concentrating on "High Net-Worth Individuals"?

So far, in addition to cost-oriented merger strategies discussed above banking firms on the marketing side have been trying to concentrate on "high net-worth individuals". These are usually defined as having high income, high property or both. In many cases, for instance in the early years of Germany's Advance Bank this strategy has failed due to low willingness of these high-end customers to switch banking affiliations. Thus for the entrant per capita acquisition costs were quite high. Other income/property based segmentation strategies have also failed due to the fact that (because of lack of consultation service) interesting customers could not be retained. In contrast, successful exceptions on the financial services markets such as MLP AG concentrate on potentially interesting customers such as students of business administration, computer science and engineering, invest heavily in winning them early and accompanying them along their (often freelancer) career with increasingly sophisticated (and profit generating) financial products and services. Using IT as enabler and pursuing such a lifecycle-oriented strategy of (mass-individualized (see e.g. Hansen, 1995a, 1995b; Hansen & Scharl, 1998)) sophistication banking seems promising to us for the following reasons:

- Particularly (potentially) interesting customers are often convenience-oriented and prefer (given a trust-relationship) financial services bundled by one sophistication supplier instead of spending their scarce time with shopping around and coordinating multiple suppliers.
- Financial services firms pursuing a strategy of investing in long-run trust relationships with (potentially) interesting customers are facing lower costs, because it is much cheaper to sell additional products to existing customers along their lifecycle instead of winning new interesting customers.
- Appropriately individualized bundles of financial services are usually advantageous for both the supplier and the customers for reasons of taxation and diversification as we have shown in a number of studies (see e.g. Buhl, Sandbiller, Will, Wolfersberger, 1999; Buhl, Hinrichs, Satzger, Schneider, 1999; Buhl & Wolfersberger, 2000b).

Financial services firms from the US are often both short-term- and big deal-oriented. Thus such a long-run strategy applied to customers becoming interesting tomorrow seems promising for European financial services firms as a differentiation strategy on global markets. Moreover, German/European banking firms are in a good starting position of establishing the necessary trust-relationships with their customers: Investigations such as (CSC, 1998b) show that customers are trusting them much more than, for instance, insurance companies: "Bankers are rated by consumers as the most trusted financial advisor twice as often as brokers and three times as often as insurance agents." From the customer's point of view such a trust-relationship is required because the customer cannot (or does not want to spend effort to) monitor the quality of financial products and services.

IT Implementation Design

For mass individualization of financial services firms have to replace their traditional segmentation strategies.

Figure 3 shows a traditional situation where data about customers are extensively available but cannot be used appropriately to target customers with the appropriate services. Thus, financial services firms usually define a small number of different customer segments and allocate their customers to these segments. As a result, customers get (really) fitting services just by chance since they may have completely different preferences with respect to the different products which cannot be reflected in these segments. For instance imagine a customer who is very cost sensitive with regard to a current account but may be very convenience oriented with respect to mortgages.

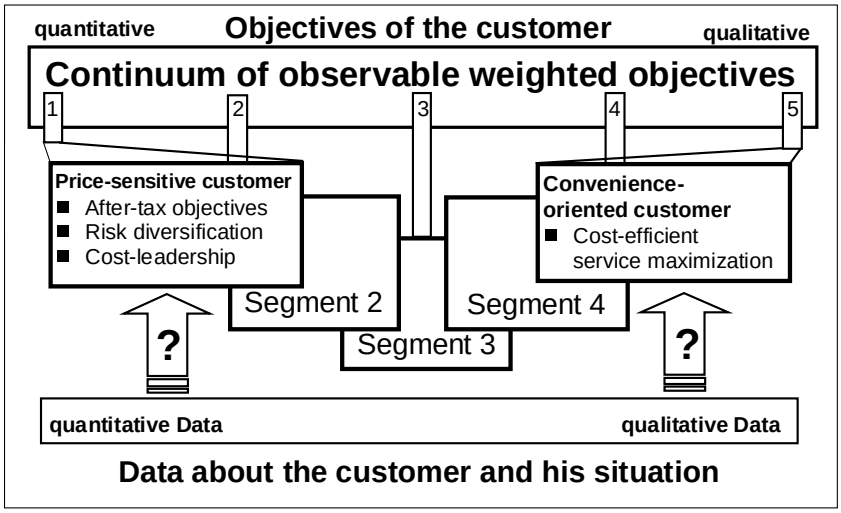

Figure 3: Traditional segmentation approach

Thus, as figure 3 indicates, such a segmentation approach (if at all) only fits a small part of the customers. In addition, most financial services companies so far have not been able to utilize the valuable data of their customers: This is true for reasons of the (terabyte) data volume in their operational legacy systems. And it is particularly the case for the qualitative data available from customers' web usage and from personal communication with staff in call centers and branch offices.

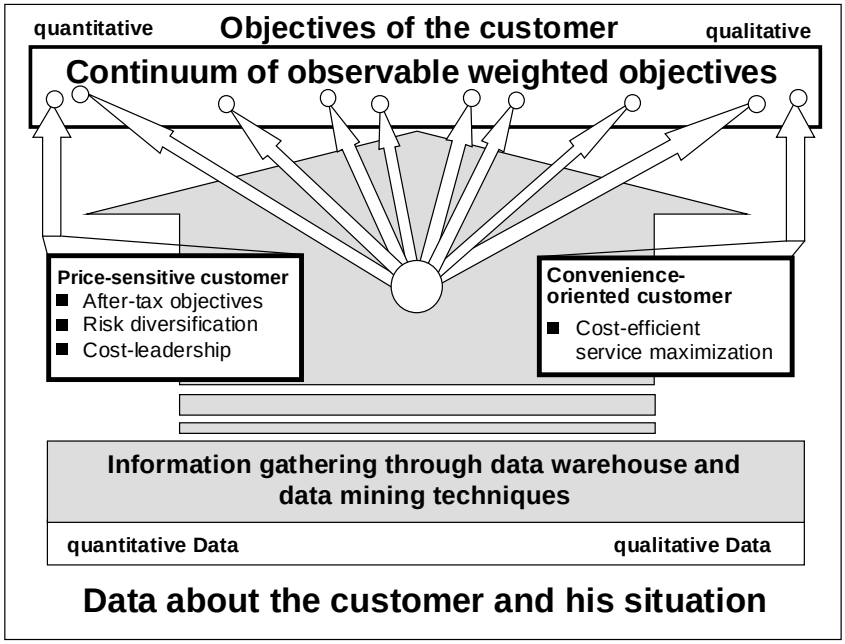

Figure 4: Customer objectives and available data

IT allows (see figure 4) for a much better approach. Using internet/intranet-technologies as integration platform for all the channels to the customer (see figure 5), relevant customer information can be obtained via Data-Warehouse- and Data-Mining-Technologies by analyzing both quantitative (hard) operational data and qualitative (soft) customer data e.g. from web tracking. Based on that IT application one-to-one-relationships can be established taking account of the specific (convex combination of) quantitative and qualitative customer objectives. In this area our research group is cooperating both with scientific partners from finance, information systems, computer science and economics in Augsburg and Nuernberg and with a leading German universal bank in Frankfurt.

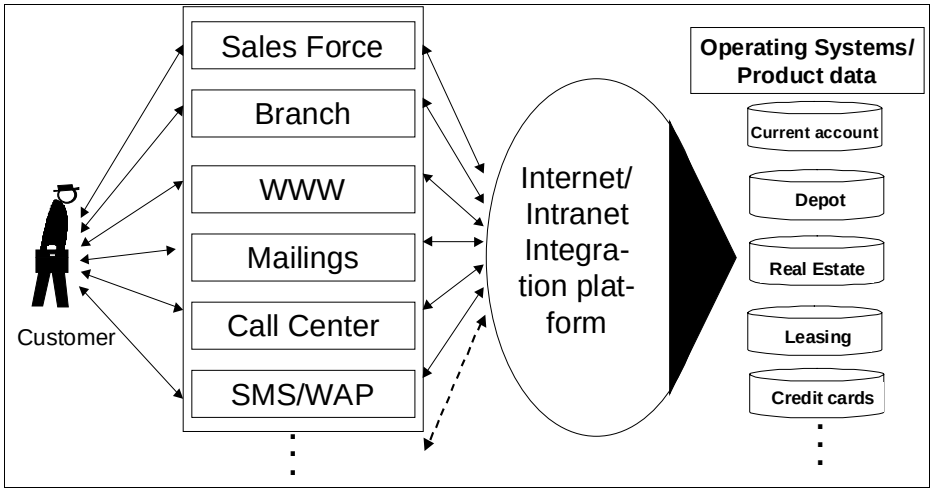

Figure 5: Multi-channel approach with an integration platform

If the financial services firm succeeds in replacing usual segmentation strategies by a potential-oriented strategy ensuring that competence of its consultants fits to the customer, individualized sophistication banking is feasible: for competent customers and complex financial problems along their lifecycle sophisticated solutions with substantial advantages for both the customer and the financial intermediary can be provided.

Superior Financial Engineering Solutions: Examples

For instance, in (Buhl & Wolfersberger, 2000a) we have shown that via sophisticated financial engineering the net present value of payments necessary for financing an office building of a small corporate compared to traditional financing can be reduced by some 70% via an appropriate combination of leasing with upfront one-time-payment, loan financing and zerobond investment. If instead of the zerobond a life insurance contract is employed and it is assumed that its present tax exemption holds in the future, a tax paradoxon can be constructed where the small corporate can use the office building for free. Of course such outstanding opportunities often do not last very long. Legal or institutional changes as well as reactions of competitors require to adapt quickly to changing market conditions. Customer-centered intermediaries can quickly react and reconfigure their value network by either dropping or picking up new providers of financial products – without affecting the trust-relationship to the customer.

For private banking customers we have shown in (Buhl, Hinrichs, Satzger, Schneider, 1999) that the net present value of residential property financing can be reduced by some 30%. Briefly described, the financial engineering solution is constructed on the following observations and ideas: If the private banking customer finances his residential property traditionally, neither depreciations nor interest payments are tax-deductible in Germany. If, however, a leasing company is the (tax) owner of the house, first there are tax advantages from depreciation. In addition by optimizing the financial contracts between the leasing company and the customer additional advantages stemming from asymmetric taxation of both can be obtained. By simultaneous optimization of refinancing such businesses as described in (Schneider & Buhl, 1999) the leasing company can gain additional advantages from either factoring of leasing payments or constructing asset-backed-securities from these future payments sold to a funds company. The latter case is particularly interesting if the private banking customer is purchasing such funds shares for his retirement plan: He finally "repurchases" (part of) the depreciation of his own residential property. As a result the financial engineering solution has turned non tax-deductible payments into tax-deductible ones and provided considerable advantages for the customer, the leasing company, the fund and a refinancing banking firm. Such a solution

is currently transferred into practical application also with a leading German universal bank and its subsidiaries.
While on traditional (mortgage financing) markets margins are driven to zero by competition, such individualized sophisticated solutions can generate substantial advantages. However, the pre-condition is a trust relationship with deep knowledge about the customer and sophistication fit with respect to competence, consultation, products, services and appropriate usage of (multi-)channels. Based on that the sophistication banking provider can generate on the one hand much larger profit/shareholder value compared to traditional markets and on the other hand construct a network of brains with high-potential customers benefiting both the members of the network and the economy as a whole by solving better a number of problems being poorly (or not all) solved today in our society.

V. TASKS FOR THE SOPHISTICATION BANK

Having described the advantages of sophistication banking, in the following we will provide some conceptual steps to become a sophistication bank, generating an increasing shareholder value by concentrating on trust relationships and offering adequate financial engineering solutions. Basically, there are three steps, that have to be considered. Firstly, customers have to be attracted. Secondly, (potentially) profitable customers have to be identified. Thirdly, the relationships to these customers have to be managed. Obviously, all steps are strongly interrelated and have to be seen as an ongoing (and often parallel) process.

Attracting Customers

Before we can start identifying (potentially) profitable customers and adequately servicing them, we have to attract them. Principally, two ways to attract customers may be distinguished: a passive and an active one.
Passively attracting customers can be performed by ensuring that a potential customer which is looking for financial services, will choose the sophistication bank on his own. Here, branding is one of the most important tasks that have to be carried out. Especially, since the basic building blocks of a financial engineering solution are standardized financial products, hence commodities, branding has to generate an emotional value (Eichelmann & Wild, 2000). According to a current survey by (Interbrand, 2000), a brand consultancy, just two corporations in the financial services markets were able to establish a brand ranking among the top 75 global brands (Citicorp as 16th and Amex as 19th). This gives at least some hints that financial services firms might have enormous potential to improve their situation.
Though branding and passively waiting for customers is one side of the coin, actively fighting for customer relationships is the other side. Certainly, branding should be an important part of a firms strategy so that customers affiliate positive characteristics, like security or sophisticated solutions, with a brand name in the financial services industry. However, branding is very expensive and the (short-term) success of a branding campaign can hardly be measured monetarily. Often a lot of money will be wasted just to reach a comparably small group of target customers. Hence, actively trying hard to build customer relationships seems to be a very promising – if not necessary – approach as well. The question has to be raised, when in the lifecycle it is a good time to target a potential customer. We argue that companies should not wait until post graduates apply for their first jobs after their studies to approach them with appropriate services.

- Firstly, it is quite difficult to approach post graduates since the university as a communication and networking platform cannot be utilized anymore.
- Secondly, a majority of post graduates will already have at least one relationship to a financial services firm due to their jobs during their studies. If they made good experiences with their current firm, they might be at least reluctant to switch. Thus, acquisition cost will be much higher for these relationships.

Therefore, firms should approach (high) potential customers as early as it is adequate to build a relationship. Here, the university and chairs in particular, lend themselves preeminently as a communication and networking platform. This holds true not only for recruiting purposes, where the struggle for the best brains gets also harder every day, but also for building long-term customer relationships. From the experience at our chair, we are strengthened in our view. We successfully built up a network of partner firms and high potential students that generates a win-win relationship for all participants of the network. Another example is the (so far) very successful approach of MLP, a German financial intermediary, that focuses its marketing efforts mainly on graduates.
An issue that is strongly related with fighting for customer relationships, is the question of profitability or potential of prospective customers. Profitability should not only be a concern with respect to existing customer relationships but it makes a lot of sense to think about the potential profitability of customer target groups – like specific graduate students to be considered in more detail later. Here, the concept of the customer lifetime value plays an increasingly important role: Companies try to determine the likely value of a customer relationship along the whole lifecycle of that customer.

Identifying Profitable Customers

The example of MLP AG shows that if you want to be successful in the financial services industry, you first of all have to identify and attract the valuable customers. But what does valuable mean regarding to our context?

A lot of companies try to value their customers based on the turnover they individually generate (Rieker, 1995). This typical behavior can be found in the financial services industry as well as in many other industries. A lot of banks tend to divide their customers into two or more groups based on their current fortune or income, e.g. Deutsche Bank AG that has its unit Deutsche Bank 24 for the standard customer and Deutsche Bank Private Banking for the more wealthy customer. The resulting two groups of customers are treated different in a way that the first group is served with standard products while the second group gets more individual treatment. This might be the right strategy for short term profitability improvement, but we think that if you want to get the most out of your customers in the long term you need not only to focus on the customers who seem to be interesting right now, but also on the ones who will very likely become interesting in the future. So in general what we think the focus - not only - in the financial services industry should be, is that customers need to be evaluated not only by what they are or have right now but by their future potential. In this case the view of the customer shifts toward being an opportunity in which you have to invest first in order to get out your paybacks in the future. In the best case banks take the whole lifetime of their customer relationship into consideration and therefore track the whole development of the relationship from its beginning to the end. This view is called *customer life time value* (see e.g. Meffert, 1995). The question that still remains is how to separate the promising customers from the rest? MLP AG as one of the winners in the (German) financial services industry is doing this for example by targeting its clients to people with promising academic degrees such as business administration, computer science and engineering disciplines and so to the ones who will most likely have a very promising future with regard to their income. But for most banks this strategy might not be working. They need a way to identify the “valuable” customers from their customer base and then find a way to built a strong relationship over time with them. For this they first need new ways of measuring customer equity. This measures need to include more than the costs or turnover that is generated by an individual customer. They also need to take more qualitative factors into account, which allow an insight e.g. into the cross-selling-potential or the referential behavior of a customer. These factors become more and more important and the knowledge of them enables the companies to optimize their segmentation strategy. An optimized segmentation strategy combined with strong efforts to serve the customer with individualized products are not only a possible strategy existing parallel to a product-oriented strategy. It is the only way that enables companies to build strong relationships with their valuable customers. Otherwise these customers will use the new possibilities of comparison given by the Internet and switch their financial services provider within a short time. Therefore this step from "Inside Out": The Seller-Driven Enterprise to "Outside In": The Customer-Driven Enterprise (Renner, 2000) offers a lot of new opportunities. By successful relationship management it is not only possible to identify and select the most valuable customers, but also to increase margins, because of reduced costs for customer care and increasing selling numbers or prices (for individual products).

Customer Relationship Management

As we can see from the above it is not enough to identify the most valuable customers, but for a sophistication bank it is also important to give its customers the best financial solutions in response to their individual situation. This means to serve the customers perfectly regarding to their individual needs. Unfortunately, these needs are by no means static but changing over time – sometimes at a breathtaking pace. The question now is how it is possible to learn about the changing needs of the customers? The only way in our eyes again is to establish a intensive relationship between the financial services provider and the customer. This means to interact regularly with her to generate the information that is needed to engineer the solutions that perfectly fit for her individual needs.

In order to achieve the information that is needed we first of all have to think about the communication channels. In former times the customer primarily had one personal adviser that (if he did his job well) after a couple of years knew almost everything relevant about his customer and was able to generate good solutions. Today the situation has changed not only because of the mentioned changes in life circumstances that force the financial services providers to establish new communication channels like call-center or internet but also because the financial services providers can cut their costs by an intelligent mix and use of the different channels. However, it is very important and challenging, though, to preserve consistency between all these different channels. Just imagine a customer buys stocks using the call-center or the Internet channel and afterwards asks his personal adviser where to put his stop-loss limit. If the personal adviser has no clue about this stock purchase, customer satisfaction might suffer severely. Thus, there must be one database that serves

every channel and is served by every channel itself. Getting back to the issue of cutting costs, a very popular example is that a money transfer the customer is directly doing by using the Internet channel offered by the financial services provider is very much cheaper compared to a money transfer that is done personally by a counter clerk in a branch.

But the new channels should not only be seen as passive reactions to changes in life circumstances or tools in order to reduce costs. Moreover, they can contribute to high level financial solutions by collecting information about the customer. We think that especially the WWW should be used as a source of information. This, because it has some special abilities like the following: You are able to collect information about the customers interests that is not influenced by an adviser. With the WWW the time between contacts with the customer can be reduced dramatically. If you identify changes in the customers interests you can react very fast and suggest financial solutions. All in all the WWW can be used as a high quality information source about the customer if the financial services providers are able to rise high value information. For this it is necessary to design and implement web-tracking systems that go far behind standard abilities like counting the number of page views or visits. Hence, to find out the customers interests you have to track not only the technical information mentioned before but also meta information about the content she is interested in, like “stocks; biotechnology; amgen”. For this intelligent concepts for marking content with semantic based on XML or other meta-languages have to be developed.

In the following, we will present two conceptual models from our research on customer relationship management and one-to-one marketing. The first one deals with the customer model, i.e. the formal and machine readable presentation of customers’ preferences. The second one is a model to formally describe finance related content as a prerequisite to individually provide customers with the appropriate content at the right time via the right channel.

Customer modeling is one possible solution for establishing a central repository, which can provide services for various sophistication banking applications. (Fridgen, Schackmann, Volkert, 2000) show that those generic customer models should include both, knowledge, e.g. about risk-affinity, attitude towards net present value and affinity towards special products, in the form of preferences, but also plain information, like age and know-how. Furthermore, they suggest an approach for one-to-one-banking, which, in a first step, completes customer models from given information and thereby lays ground for the ongoing step two, in which user specific actions are inferred.

Figure 6 summarizes this process: The preferences of a customer are deducted by an inference process (I_1) from the customer information base built up in (a) and (b). Domain specific and domain independent knowledge about building customer models is used for this deduction. Inference process I_2 is the actual consulting process, in which starting from an instance of the customer model, the adequate individualized action is determined. This process is supported by a domain specific and domain independent knowledge base built up for consulting processes as well (Fridgen, Schackmann, Volkert, 2000) It is important to note, though, that individualized goods and services are not advantageous at all costs. (Schackmann, Steck, Hummel, Rödl, 2000) and (Link & Schackmann, 2000) analyze conditions where CRM and individualized services should be preferred. Main advantages of the proposed approach compared to the state of the art one-step approach are the following (for a detailed discussion see (Fridgen, Schackmann, Volkert, 2000):

- The complexity of the whole process is significantly reduced.
- The matching algorithm/inference process I_2 may be specified more precisely.
- The two different inference processes I_1 and I_2 can follow different paradigms.
- The two-step approach provides for more flexibility.
- The processes of knowledge generation can be traced more easily.

We should mention though that there is one major deficiency affiliated with this approach: Since the deducted knowledge about a customer (preferences base) is performed by a so-called pre-process (inference process I_1) the actual matching process (I_2) cannot take place in real-time.

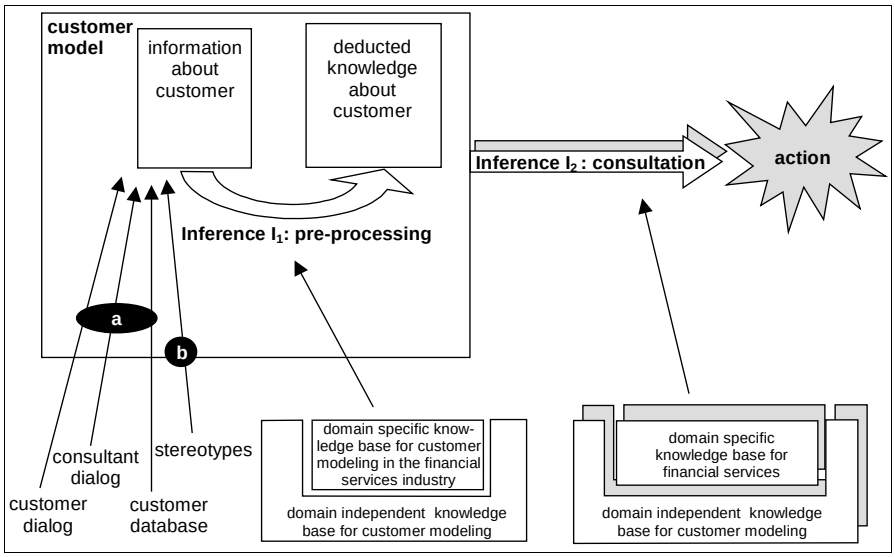

Figure 6: Process of establishing customer models and deducting user-specific actions [35], modified

While in (Fridgen, Schackmann, Volkert, 2000) the structure of the knowledge base is not discussed, (Fridgen, Volkert, Harnagell, Marko, Zimmermann, 2000) propose a conceptual model that may serve to establish a central customer repository using a quasi-hierarchical graph to deduce knowledge. In particular, problems of inconsistency, changing needs over time, and explicating and deducing implicit knowledge are discussed there.

A profound customer model is a prerequisite to be able to offer individualized services on a broad scale, but also models to formally present finance related content and financial products have to be developed. With respect to the content model, (Kundisch, Wolfersberger, Calaminus, Klöpfer, 2001) propose to describe finance related content with a standardized set of 11 attributes (See Table 1) as a basis for a matching with an instance of a customer model. The overall objective is formulated as to individually provide a customer with the right content at the right time via the appropriate channel. Conveniently, the basic setup of the model is quite comparable to the customer model described in (Fridgen, Schackmann, Volkert, 2000). In the content model, there is also a two-step inference process. First, a knowledge base is built up using a pre-process. Meta information is mainly derived by an IT-enabled inference process and partly by human content managers. Consequently, the meta information about finance related content can be used in a second step for a matching with knowledge about customers. As a result, content may be individually provided based on the customer's preferences and according to market developments and the customer's current situation.

Table 1. Relevant attributes to describe finance related content

Right Content	Author, Source, Subject Categories, Language, Release Date, Content Type, Recommendation Level, Specificity, Sophistication Level
Right Time	Subject Categories, Length, Sophistication Level
Right Channel	Subject Categories, Length, Content Style
Complete Attribute List	Author, Source, Subject Categories, Language, Release Date, Content Type, Recommendation Level, Specificity, Sophistication Level, Length, Content Style

All this research has not just been done with the far vision to enable true one-to-one marketing and an optimal customer relationship management but – using current technology – vital parts of this vision have recently been realized and implemented in a project with the private banking part of Frankfurt based Deutsche Bank AG.

The discussion about conceptual models concludes the paper and we will now summarize our main findings.

VI. SUMMARY AND CONCLUSIONS

We have illustrated the mega-trends affecting the financial services industry and discussed strategic options for the upcoming global and volatile markets. We have argued and justified why cost-oriented strategies such as mergers/acquisitions are not beneficial in the long run; using IT and people instead concentrating on the customer's problems along the lifecycle and becoming a Sophistication Banking intermediary seems much more promising: Offering the appropriate channel, product, service and advice for each specific customer/problem combination is superior with respect to convenience, cost, tax and diversification

advantages. Financial engineering combining IT and people based on long-term trust relationships with customers is a strong element to succeed in future markets turning the mega-trends from threats into business opportunities.

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