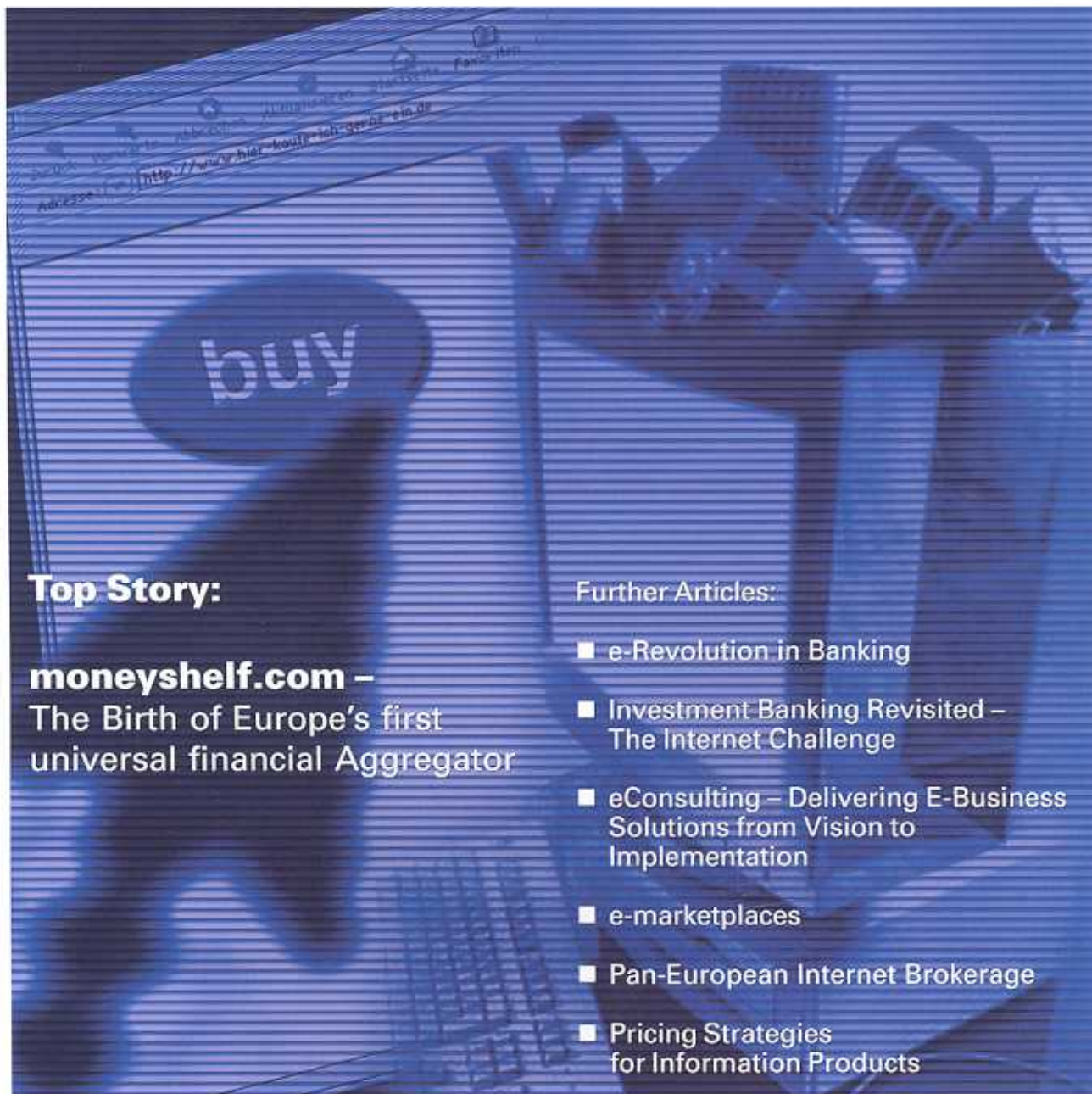


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Pan-European Internet Brokerage

IT Consulting

Thomas Beemelmann, Bernd Sperber, Jan D. Wiede

This article discusses the general conditions and success factors which support the use of Internet brokerage to complement traditional banking in future, what a pan-European Internet bank can look like, which products can be traded there, and how a modular structure allows both bank-internal and external partners to participate.

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1. Success Factors and general Conditions of a pan-European Internet Brokerage

Over the past few years, use of the Internet at companies and households has grown at an unprecedented speed. While in the case of radio and television it took these technological advancements 21 and 16 years respectively to reach half of all households in the U.S., this process will take no more than nine years in the case of the Internet. It is assumed that the 50 percent mark will be reached in the U.S. in the year 2002. According to surveys by GfK, 16 million people in Germany already

have Internet access, indicating a lag of approximately 1.5 years behind the U.S.¹ The GfK study also confirms the importance of brokerage services on the Internet, citing the purchase and sale of securities as one of the most frequently used services on the Internet. The ten million online account holders at the end of 1999 above all appreciate the high level of market transparency, access to financial services at all times and greater market transparency on the web.² In future, they expect to see further fee reductions owing to customers' high own input, which allows banks to settle transactions automatically (see Exhibit 1 & 2).

Internet Penetration in the U.S. and Germany³

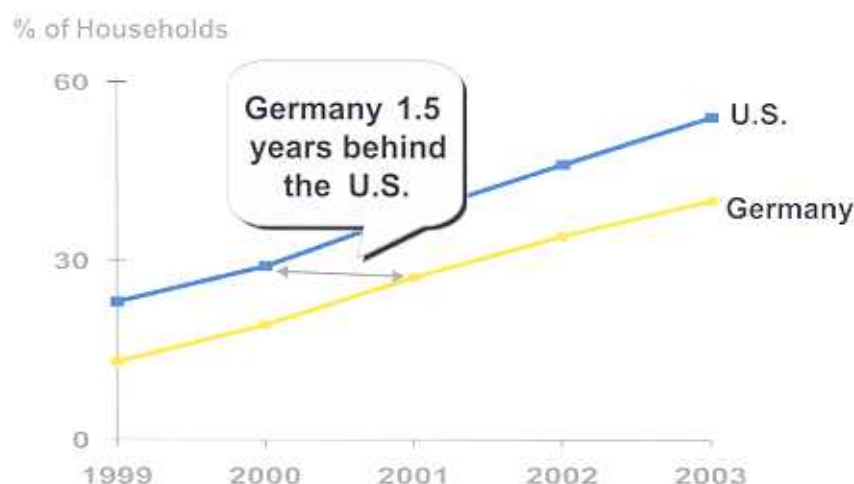


Exhibit 1

¹ cf. www.gfk.de.

² cf. W. Becker/U. Krück: economics, Internet-Revolution und "New Economy", Finanzportale: Chancen und Risiken für Kunden und Banken, Deutsche Bank Research, Arbeitsbericht September 2000.

³ Source: Deutsche Bank Research.

Changed Behaviour of Banking Customers⁴

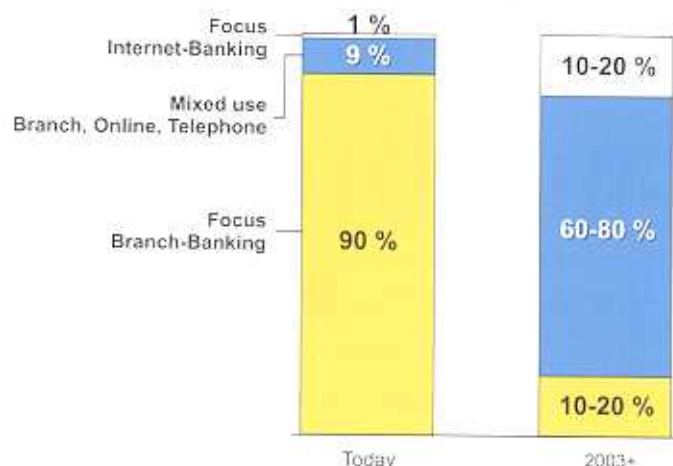


Exhibit 2

Owing to the widely acknowledged advantages of online trading for customers, combined with a rise in Internet penetration among German households and around the world, a significant shift in user behaviour can be expected among banking customers. Booz, Allen & Hamilton rightly assume that up to 20 % of all companies will do their banking business exclusively via the Internet in the year 2003, 60 - 80 % via various media (the Internet, tele-

phone, self-service terminals and branches), and that only 10 - 20 % will regard the traditional branch as 'their bank'.⁵

The point to be emphasized here is that the current development of Internet banks and online brokerage firms is not merely a temporary fad – rather, delivery channels are being developed today that will be accessed by up to 80 % of all banking customers in the near future.

A closer analysis of European online-brokerage firms shows appreciable differences in the development stages and growth rates of the various providers. Whereas some banks see their online activities as a distribution platform for disseminating information and providing access to basic services such as account balance and transfer order queries (me-too approach), other providers see the Internet as the delivery channel for entering new markets. The U.S. brokerage firm DLJ-direct, for example, very aggressively entered the European market solely via the Internet, at present with a focus on the U.K.

It is nonetheless striking that competition on European markets has so far largely been characterized by national providers. Although leading providers (among others, Consors, Comdirect, Charles Schwab, Brokerage 24, e*trade) aim to implement comprehensive internationalization strategies, national solutions have always been offered so far. For platforms like Brokerage 24 this means that it is obliged to offer a new solution tailored to the respective customer needs and legal situation for each market it enters and all the necessary functions of an Internet bank as well (front-end, backend with transaction settlement and IT, distribution and management) (see Exhibit 3).

This strategy of isolated, country-specific Internet activities, however, will be exposed to increasing pressure within the next 2-3 years, triggered mainly by the following factors:

- Driven by technological developments and an increasing number of competitors, the continuous price reductions per transaction will accelerate.
- With the introduction of the Euro and the progressive ratification of EU law

European Market for online Brokerage will not remain domestic – National Players will become international Competitors

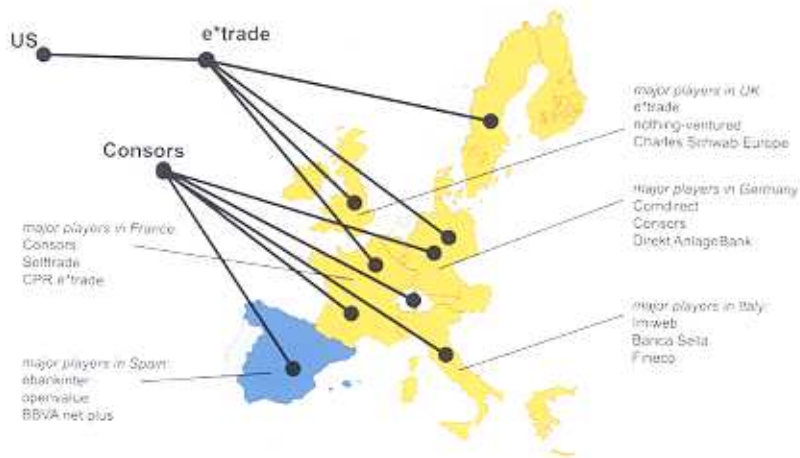


Exhibit 3

⁴ Source: Booz, Allen & Hamilton

⁵ Compare Booz, Allen & Hamilton, quoted in W. Becker/U. Krück: I.c. page 6.

within the member states, country-specific restrictions for the transfer of capital will increasingly be dropped since laws and regulations are adapted to a European standard (e.g. tax reporting requirements for shareholders for corporate actions).

From this point of view, one can forecast the following developments:⁶

1. Given declining transaction prices and high competitive pressures in banking business, the only way to balance the high fixed costs in transaction processing is to consistently benefit from economies of scale. Bundling all European transactions in one processing unit will produce benefits.

2. The current number of 80 national providers on the European market will shrink to five to eight pan-European online brokerage firms by the year 2010.

3. Online brokerage firms' scope for adjusting their pricing and product offerings will be determined partly and considerably limited by the establishment of financial portals.

2. How does the pan-European Internet Brokerage work?

An online brokerage system for all of Europe is largely based on country-specific front-ends (web pages), whose transactions are merged in a central transaction unit, processed and routed to the respective stock market for execution and settlement (see Exhibit 4).

Here, the process of a share purchase by an Italian customer on the London Stock Exchange (LSE) looks as follows: he logs into the Italian pan-European Internet Brokerage web page and enters his buy order and all necessary information into the system (e.g. buy limit). The pan-European Internet

Brokerage then routes the order via its broker directly to the central backend of the European Transaction Bank (etb) in Frankfurt, where the order is automatically accepted, matched and saved for a subsequent settlement check. In accordance with the customer's wish, the buy order is forwarded to the relevant stock exchange, here the London Stock Exchange, executed, and the securities transferred to the customer against payment. The backend monitors the correct settlement and, within minutes, reports back to pan-European Internet Brokerage Italy via the Internet, where the customer can view an online confirmation of his buy order before receiving a subsequent (depending on the legal requirements of the respective country) paper-based confirmation.

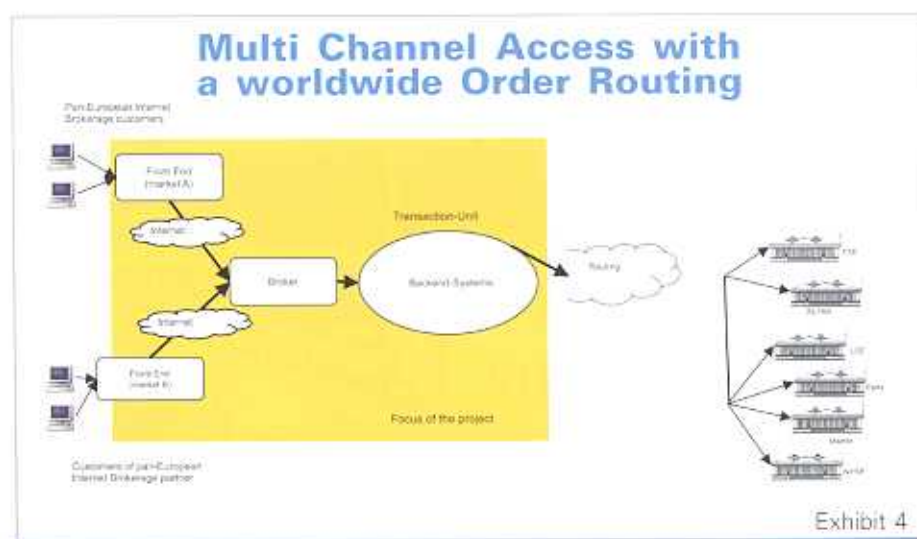
Owing to its modular structure, pan-European Internet Brokerage is able to link up various front-ends to the backend system. As a result, new countries can be entered with a country-specific front-end at a comparatively low cost. It can also offer its backend services to other providers as a white-label provider. For this purpose, it is merely necessary to link up the partner's front-end to the pan-European Internet Brokerage's backend technology with a few

interfaces. For the partner's final customer, however, this outsourcing is not visible.

Consequently, this project is aimed at the build-up and operation of an Internet brokerage system that can be used across Europe, that is capable of covering virtually all attractive markets and leads to low costs for the country-specific front-ends. The modular structure makes it possible to link up external partner front-ends and serves to realize higher transaction numbers and lower unit costs through economies of scale.

3. 'Pan-European Internet Brokerage' Project – Build-up of an online Brokerage

With a project lead time of over one year and more than 100 project staff, this project is one of Deutsche Bank AG's major e-initiatives. When completed in March 2001, existing backend systems will have been reprogrammed on a major scale, a new front-end developed for various countries, new processes and procedures implemented and tested in etb, and, last but not least, pan-European Internet Brokerage will be able to launch its services as a new bank.



⁶ cf. Inhouse Consulting-Research (Group Europe)

The project can be divided into various sub-projects, which are briefly presented below:

- Development of a country-specific front-end system
- Structure of the pan-European Internet Brokerage backend

3.1 Pan-European Internet Brokerage Front-end: Country-specific Customer Interfaces

For pan-European Internet Brokerage, the approach of a modular structure was implemented right from the beginning. Based on a Europe-wide standard entry page, the customer is directed to the applicable brokerage environment for his domestic market. Here, apart from information in his language which is tailored to the respective legal area, he can find the pan-European Internet Brokerage's entire offering in this country market (see examples in Exhibit 5).

Apart from the widely available possibility of opening an online account, the customer will be able to

use basic functions, such as securities trading, checking portfolios and orders awaiting execution, and will also find comprehensive information and research functions to help him choose and value securities. In this first release, customers will already be offered functions that differ markedly from those of other competitors:

- The system's realtime capability allows users to monitor prices and information without a time lag and buy and sell securities within very short intervals – something that is important for day traders
- The possibility to obtain information on IPOs across Europe and subscribe to them directly from each country via pan-European Internet Brokerage⁷
- Especially with a view to further harmonization in Europe and rising transaction volumes generated through additional partners, customers will gain very cost-effective access to all major stock exchanges

3.2 The new Backend – Restructuring IT and Transaction Processing Services

The special challenge here is to link an extremely stable backend tailored to the needs of retail business with the requirements of an Internet brokerage whose services will be realtime and multilingual. This required extensive amendments and reprogramming in the existing systems. When completed, the pan-European Internet Brokerage and etb will have a processing center supporting various languages (e.g. German, English, French, Italian and Spanish), including paper-based documentation, for customers, that displays all transactions at realtime prices without a time lag after their execution, supports day trading and can value a customer's portfolio in various currencies.

From the perspective of an online broker, an important aspect was the implementation of a Web-compatible and realtime information system for all of a customer's portfolios and transactions. The system promptly notifies customers of executed

Primary Functions of the country-specific Front-ends

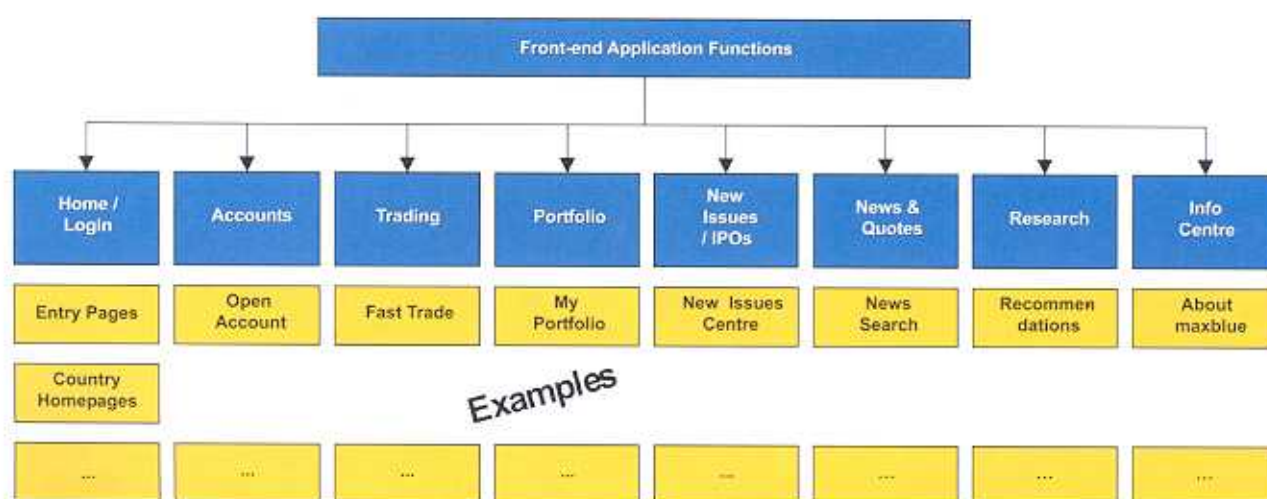


Exhibit 5

⁷ n.b.: The use of this function depends on the issuing company's consent to admit shareholders from other countries (example: Deutsche Telekom AG). It can be expected that more companies will in future decide to admit European shareholders to subscribe without restrictions.

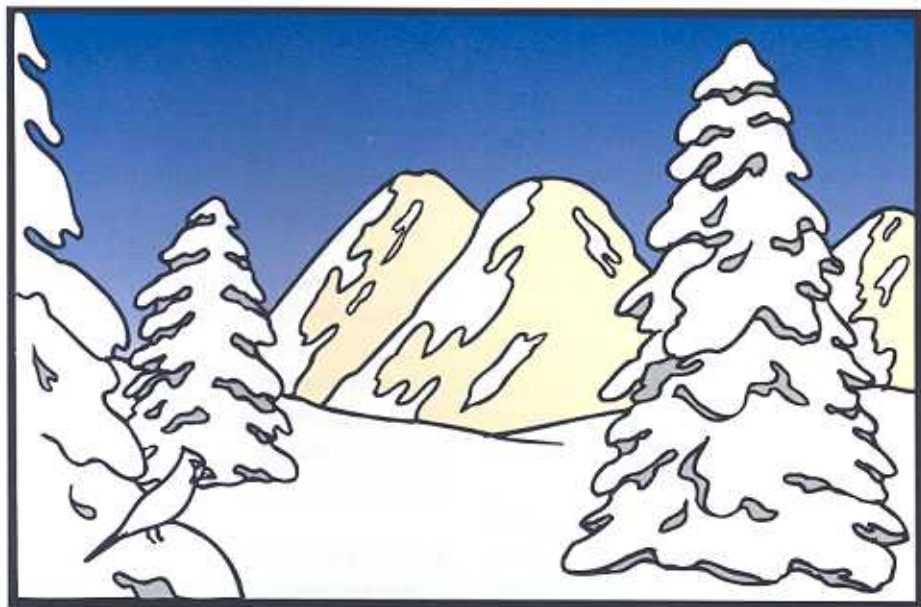
transactions via e-mail or a screen message while they are still logged in the pan-European Internet Brokerage. Apart from this high web capability, customers can open an online account themselves.⁸

In addition to the high level of service, a very stable backend that is capable of handling high capacities has been developed by using on existing systems and experience. Even if large partners are integrated, the system will still be able to process transaction volumes reliably, quickly, and above all cost-effectively.

4. Concluding Remarks

This article presented and critically analyzed the reasons for and functioning of a pan-European online brokerage according to the respective Deutsche Bank project. An important conclusion is to create an understanding for the need to adopt a European approach that allows the use of modular and country-specific front-ends for customers, but draws on a very efficient, safe and cost-effective transaction settlement system at the backend.

From a current point of view, it is sometimes argued that the country-specific Internet banks (multi-domestic approach) are easier, safer and adjusted to current cost levels. For today, this view is accurate, however, this article showed which trends must be considered within the next two years. Following the introduction of the Euro, Europe-wide standard guidelines and increasing competition from the U.S., the multi-domestic approach may lose its attraction in the near future. It is therefore necessary to develop new solutions for the future, gain the necessary experience as a first mover, and actively drive change.



Merry
Christmas
and a
successful
New Year 2001

⁸ n.b.: if legally permissible.