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The Business Impact of Information Technology on the Banking Industry

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Introduction

The business impacts of information technology, deregulation and globalisation on the structure of the banking industry is analysed. It is shown how these forces are combining to create an unstable banking environment in which new entrants and innovation are reducing the income streams of banks. The dynamics of the banking industry are related to the reduction in revenues and it is postulated that the global banking industry is entering into a spiral of decline. The strategic responses of the banks, particularly the trend towards mega-mergers and internal cost-cutting, are shown to be insufficient in the long term to offset the reduction in income.

The banking industry is being driven by a group of inter-related forces, notably de-regulation, globalisation of markets and competition, and information technology. To understand the dynamics of the banking industry, it is necessary to consider the collective impact of these forces on the strategies and structures of individual banks. Research on banking tends to be narrow in its focus, for example to analyse a particular market segment (Large 1996, cross-border payments), a particular type of technology (Tomasula 1996, relational databases) or a specific geographic market (Javetski 1996, French banks). This is true for both academic research papers and also for many market research projects carried out by the banks. The purpose of this paper is to give an overview of the diverse range of phenomena occurring in the banking industry and explain them in theoretical terms. The research is of importance for gaining a general understanding of the banking industry as a whole and also for understanding the development of individual bank strategy. The ideas are grounded in previous research which the authors have carried out with a range of international banks.

Banking Forces

The three forces of de-regulation, globalisation and information technology affect each other and it is their *collective* as well as individual impacts on banks which is of interest. De-regulation in the US banking industry creates new opportunities for regional banks to compete in other states (Harrington and Warf 1995), information technology makes it possible. For example IT and novel marketing strategies create opportunities to deliver financial services through alliances which allow the shared use of technology platforms such as Automatic Teller Machines (ATMs) and payment processing systems. Another example is the global management of international relationships (e.g. see Javetski et al 1995 and Nathans et al 1996 for a discussion of global strategies). Bank customers are creating new organisation structures which are managed on a global scale and co-ordinated through networked information systems. There are multiple decision makers located in different continents and complex inter-dependencies exist which require access to financial expertise across product ranges and across geographic boundaries (Javetski et al 1995). It no longer makes sense for a bank to treat these types of customers as national entities. Instead an approach must be taken which can handle the requisite variety of the customer by offering bank products, knowledge and expertise, and relationship management on a global scale. The only way to co-ordinate this type of relationship quickly is through an electronic delivery channel.

At an aggregate level what has made the competitive forces of de-regulation, globalistion and information technology so powerful in the 1980s and 1990s is the extent of the changes: de-regulation of financial markets on a global scale; the emergence of truly global trading systems composed of networks of individual organisations; and the creation of extremely cheap and effective telecommunications networks for both retail and industrial customers which make the international flow of trade and bank data an almost trivial exercise. Individual instances of change are continuously announced and analysed in the business press but the longer-term outlook is unclear. A prognosis of the business impacts of information technology on the banking industry is outlined in the next section.

Spiral of Decline in Bank Markets

Traditionally, bank markets have been relatively stable and bank profits have been high. Lending income and fee based income generate the most profit for a universal bank. In a stable environment it was possible for banks to secure low risk, high returns on their capital. Losses only occurred as a result of poor risk management or failed own account trading. However significant changes are occurring that are de-stabilising the status quo (e.g. see *The Economist* 1996a for a discussion of the relationships between shrinking bank markets, bank strategy and risk). The basic argument is that traditional banking strategies and structures based on high investments in buildings and legacy computer systems are being undermined by a combination of innovation within the banking industry and the entry of new banking products from outside the industry. Taking two different bank markets, the international payments and the retail banking markets, the business effects of new entrants and innovation can be illustrated.

International payments has traditionally been carried out through the SWIFT network and the banking regulations ensure that the club of international banks who form the world-wide network of correspondent banks receive income for managing payment transactions and also from interest earned while the money is in their temporary control. This position has remained broadly static from the inception of the SWIFT network to the early 1990s when a range of alternative mechanisms for managing international funds transfer emerged. The new entrants include IBOS, smart cards, digicash and company based cash management systems designed to reduce the volumes of payments going to the banks by off-setting cash flows within a group of companies (Holland et al 1994, Holland and Cortese 1995). The effect of these new entrants is to reduce the overall size of the payments market by offering cheaper and in most cases faster methods of moving money. In the second example of retail banking, the traditional relationship has been between the bank's staff and individual customers. The bank's principal role was to act as an intermediary between the customer and the financial markets, typically using its own products. With the advent of electronic delivery channels and the de-regulation in many countries of the financial services market, it is possible for new entrants to offer banking and other financial services direct to the end customer. Technology such as database marketing, risk management software and electronic delivery channels such as the telephone, satellite communications, the internet or a combination of all of these, allows new entrants to quickly and easily enter the banking market and select the most profitable customers. This disintermediation of the traditional banking structures has several effects: it lowers profit margins, it makes economies of scale more difficult to realise for banks with expensive legacy systems, and it raises the expectations of the banking market as a whole because superior products are being offered in many cases. In addition to these two instances of market change, there are many others which are affecting bank profitability, for example reduced margins in the foreign exchange market (Harveson 1996), and reductions in the size and profitability of lending and deposit markets *(The Economist* 1996a).

Strategic Response of Banks

The strategic response of banks with expensive building and system infrastructures is to cut costs using a variety of methods. The most obvious change to the banking industry is the spate of mergers and acquisitions (*The Economist* 1996b), where economies of scale arising from shared technology and a larger customer base are cited - significantly better customer service is rarely mentioned. Cost cutting serves the purpose of maintaining profits in the short run but does not address the more fundamental issues of poor customer service, slow product innovation and falling or static revenues. It has also led to internecine debates about cost allocation of central systems to individual product groups and new product investment.

This is particularly noticeable in banks which have launched innovative products such as telephone banking which compete directly with established products. An internal focus on cost-cutting and management de-layering inevitably affects the ability of a bank to understand its customers' needs and may mask the spiral of decline. The increased sophistication and willingness of customers to switch banks exacerbates the situation.

The prediction from the argument is that income streams for a universal bank are gradually declining because of new entrants and disintermediation. If declining revenues are combined with economic cycles one would expect a cyclical downward curve of revenues and profitability. The cost-cutting of the banks improves the profit level but it is postulated that simple cost-cutting or economies of scale from shared operations arising from mergers will be insufficient to counter the long term loss of revenues.

Discussion and Conclusions

The 5-10 year outlook for banks is very poor. The combined forces of deregulation, globalisation and information technology have already changed the strategies and structures of individual banks, as witnessed by the spate of mergers in the late 1980s and early 1990s, and the development of innovative products which exploit electronic delivery channels. The important point about the impact of IT particularly, is that manufacturing industry underwent similarly dramatic changes approximately 10 years earlier than the banks. The future pace of change and scale of re-structuring in the banking industry is therefore likely to increase until at least the year 2005. This claim is easily supported when one considers the size, brand name, and global expertise in marketing of the new entrants: automotive, telecommunications and software companies.

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