

The Development of Multimedia Delivery Channels for Financial Services at Barclays Bank

The convergence of four industries, namely the computer, TV and broadcasting, telecommunications and print/publishing industries into a multimedia industry brings much turbulence into the organisational domain and leads to considerable organisational redesign. This study shows some evidence how the deployment of multimedia information systems changes the nature of business processes within Barclays bank and leads to new products, services and enables the organisation to change delivery channels to reach their customers. Barclays sees video-on-demand as the model for a range of new multimedia services which will transform retail and wholesale banking over the next few years. Among the possible implications of multimedia IS are a virtual end to branch banking and its replacement by multimedia kiosks and interactive television.

The 1990s have brought and are bringing a number of evolutionary changes to the organisational and technical environments of organisations. The changes in

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IT are to be found in advances in speed and quality of hardware and software, the rise of powerful and transparent networks, the ease of access to distributed databases and the advent of multimedia IS and multimedia services. One category of strategic information systems, *multimedia information systems*, can be an enabling technology for Business Process Redesign, Business Process Reengineering (BPR), Business Reconfiguration or however else it is termed.

Theoretical Framework for Analysis

In this paper we use the MIT 1990s framework [7] as a conceptual frame of reference to understand the implications of multimedia IS usage regarding organisational redesign. The theoretical perspective and the normative orientation for the analysis of the case study is 'segmented institutionalism', to use Kling and Scacci's term [4], in the domain of the 'substance of theory' [5]. The 'causal agency' [5] used for analysis of the case is the 'emergent perspective' of action [6].

What are Multimedia Information Systems?

The IT industry seems to be in the midst of an evolutionary 'leap forward'. PCs are being transformed from computation-intensive to communications-intensive devices that use in addition to text and graphics the media types of audio, animation and video. But what is multimedia and what are multimedia IS? In this paper we use the term multimedia IS as a new category of IS which also includes components of a communication system, such as multimedia conferencing. There is no agreed definition in the literature of what multimedia or multimedia IS are because there is so much

turbulence in this area. However, to discuss multimedia IS we have to develop a working definition. The two main characteristics of a multimedia IS are being a real-time system not a 'batch' system and the degree of interactivity. Through the digitalisation of information in all media types and the emergence of ubiquitous information networks, sometimes referred to as 'information highways', some organisations are moving from their traditional organisational structure and strategy into a new and redesigned organisation.

Multimedia Information Systems at Barclays Bank

Barclays bank is a UK-based leading financial institution, the 3rd largest bank in the UK and the 5th largest bank in Europe with a market capitalisation of \$12'749.7 million in 1993, ranking 18th of the European top 500 companies [1]. The commitment to IT can be measured through the total investment in IT throughout the Group of £800 million during 1993. There are plans to invest £2.5 billion into new technology for the branch infrastructure over the next 3 years in addition to the £800 million that the Group already invests each year. These investments in IT have had a major effect in both domestic and global banking, with a consequential reduction in staff numbers whilst service levels have improved. As Andrew Buxton, chairman at Barclays, says: „Much has been achieved through rethinking business processes, economies

of scale and the introduction of new technology" [1].

The head of the Multimedia Department reports directly to the director of alliances at Barclays, since multimedia is seen as a strategic opportunity to broaden the business network and to redesign the business. The head of Multimedia at Barclays has formulated the multimedia motto: „Our objective is to have the information available when and where the customer wants it". Barclays Multimedia has a staff of over 15 and a budget of over one million £ a year. The main objectives of the Multimedia Department at Barclays are:

- evaluating Multimedia Information Systems through pilot studies
- developing electronic catalogues for retailers and Barclays Group companies
- developing a specification for a generic Multimedia application framework for retailers
- developing a software environment for Multimedia Information Systems for retailers
- developing and testing online loan services
- developing and testing online plastic card transactions

Strategic Multimedia IS at Barclays

Barclays' exploitation of multimedia IS shows a growing need to change the delivery channel from the branch infrastructure to a digital delivery channel. The potential target market served through a digital delivery channel is a mass market although multimedia IS will be used to customize the financial products. Hence, multimedia services are highly customized but delivered through a mass delivery channel, such as interactive TV or multimedia kiosks. The challenge of Barclays regarding design issues of multimedia services is to find a balance between customized IS and mass IS. The commitment to a customized product becomes clear in the following statement: „We recognise that customers are not

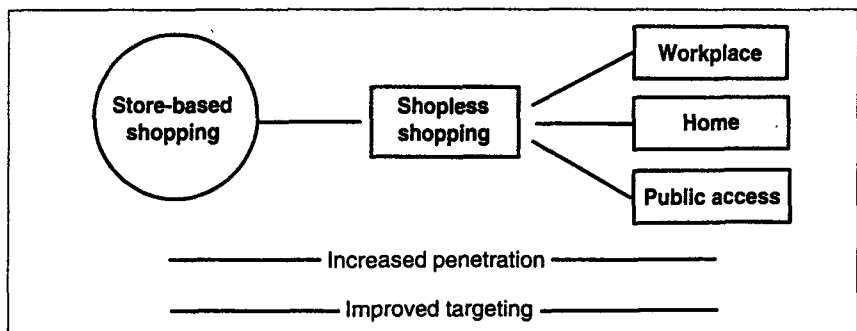


Figure 1: Redesigning organisational boundaries with multimedia IS

alike and we are becoming more focused in order to meet each customer's needs and desired level of service" [1]. In the past, selling of financial services was done solely through bank branches and travelling business bankers. Barclays' multimedia IS try to target the potential customers through redesigning their organisational boundaries as it is shown in Figure 1. The changing process of a 'store-based shopping' to a 'shopless shopping' paradigm is being implemented with multimedia IS. Financial services can be transmitted to the workplace, to the home and to public access ATM multimedia kiosks basically via the same technology and software.

The process of implementing multimedia IS is given highest priority, as Joseph De Feo, head of information technology, says: „We thought we had time. We planned to have the programme monitoring by 1996-97 based on our estimates of the investment in infrastructure the telcos would have to make to deliver these services. They have made faster progress. Here and in the US, the telcos can provide video-on-demand over the existing telephone network. We don't have five years now and this is putting pressure on developments" [3]. The main expected benefits of multimedia IS at Barclays are shown in Table 1.

Barclays develops multimedia IS for 'internal' use and for 'external' use. Internal multimedia IS are systems such as 'Career Builder', which is a Point of Information (POI) system. It contains a database of relevant job information and career opportunities to which users can interactively match their own skills. Multimedia training IS are used in Barclays sixty-three 'Learning Centres'. External systems are targeted at a mass market, although the products and services are being customized via multimedia components. External systems are the Homestead projects, the Business Needs Analyser and Touchbank. Figure 2, gives an overview of the internal and external multimedia IS developed in Barclays.

Concluding Discussion

As stated earlier, Barclays is now at the stage of exploiting multimedia information systems, hence the answer to the research questions are based on the early usage of multimedia IS. Regarding the first question, which multimedia IS play an important role for business process redesign, it is important to note that the emphasis is on the word 'role'. We agree with Ciborra and Jelassi [2] that the source of advantage cannot lie only in the possession of a unique sophisticated system, in this case a multimedia IS, be it internally or externally. Economic and technological forces push organisations to develop such systems jointly and even

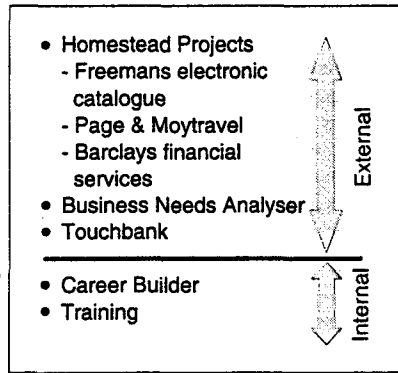


Figure 2: Overview of Barclays multimedia information system

open them to competitors as the classical cases of strategic IS, such as McKesson, American Hospital Supply (now Baxter) and American Airlines show. The new challenge is to harness IT to tap the core competencies of the organisation, to create new information and knowledge or new content, as suggested in Figure 3.

In the case of multimedia IS, Barclays is pushed to ask itself the main strategic question: Which business are we in and what are our core competencies? The answer to these questions is changing, as we can see through the deployment of CD-i and in the near future interactive TV as a delivery channel and the 'information highway' as a networked infrastructure for the delivery of services and new products, through a multimedia mass IS.

Networked multimedia systems, such as a public access kiosk, multimedia PCs

Multimedia IS plays an enabling role at Barclays in the process of redesigning and rethinking core competencies and skills. The most important multimedia IS used in Barclays exploitation is interactive TV. Interactive TV will be the successor to CD-i systems and will redesign Barclays business processes fundamentally. The delivery of customized multimedia services to a mass audience via CD-i, interactive TV or however else the technology is termed in future, is essential. The delivery channel will be changed from a branch infrastructure to a direct digital customer link into the home, public places and the workplace. The second key multimedia technology involved is the integration of Desktop-Videoconferencing capabilities into kiosks and other applications. They provide a direct link from the point of information or point of sales to Barclays staff, regardless where the staff is located - in offices, at home or travelling.

However, as stated above in the theoretical framework for analysis of this case, MIT's 1990s framework shows the importance of organisational and social issues and their interconnection with technology. Multimedia IS and particularly networked multimedia IS can be seen as an enabling technology to move Barclays into the state of a networked organisation. The organisational challenge lies in the increasing need to manage distributed complexity. Through strategic alliances Barclays is redesigning its business

Customer	improved service allows effective needs analysis impartial advice convenience allows financial modelling
Staff	sales aid free sales staff to concentrate on selling training branch office procedures fraud/security issues via video and audio in szenarios professionalism
Operational	branch infrastructure 24 hour availability interactive sales terminals (IST) recruiting new customers in public places online networked services/information

Tab. 1: Main expected benefits of multimedia IS at Barclays

or interactive TV devices at home, need to have a two-way interactive link to Barclays' staff via Desktop-Videoconferencing. Via Desktop-Videoconferencing Barclays staff can offer advice and consultation services to clients. John Maity, deputy director of delivery channel automation at Barclays, has reflected the concern about multimedia systems video-quality in his comment: „For staff support we can work with current technology, but for direct customer facing it needs to be of much higher quality”.

scope and developing new services and targeting customers differently than before. The problems of networked multimedia IS and the development of new services is closely linked with other parties than Barclays. Hence, Barclays is in close discussions with major multimedia companies such as, BT, AT&T, Mercury and with computer suppliers. An internal programme is looking at possible alliances and joint ventures. To offer truly global or at least European services, Barclays depends heavily on regulatory situation

since telecommunications and the associated network infrastructure (information highway) is still more or less regulated. Within the theoretical frame of 'segmented rationalism' [4], the case shows some evidence that through the redesigning of organisational boundaries (see Figure 3) and the move to direct digital customer links to workplace, home and public places, multimedia IS will increase their impact on social and organisational life tremendously. However, to measure and study the scope and degree of their impact, research of multimedia IS depends on their advanced status in organisational and social realities.

In answer to how multimedia IS redefine business processes, we can summarize that delivery channels shift from branch infrastructure to digital direct linkage to the customers. Hence, the way and the procedures in which customers learn about products and new services changes radically. Currently the shift from one-way communications to two-way, which is enabled by networked multimedia

IS, has and will have strong effects on consumer marketing. Furthermore, remote Barclays staff gives advice via Desktop-Videoconferencing links to customers and potential customers.

ucts with their financial service, as Freemans catalogue and Page&Moy travel multimedia IS show evidence. If the travel catalogue of Page&Moy could be delivered via interactive TV to the customer, customers who want to choose a holiday, press the desired continent, a list of special requirements, dates, in fact everything they would normally do in a travel agency. The customer then calls up video presentations of the resorts, including restaurants, hotels and sights. The key services which Barclays would offer are payment services, personal loans, possibilities to change foreign currencies, travel insurance, etc. Similarly the customer can select a car from the visuals, pick the upholstery, book a test drive and arrange financial details.

Regarding the core competencies and skills it is very important to mention that some 30,000 employees at Barclays have been through the multimedia training courses which were delivered at the sixty-three Learning Centres, but there are plans to deliver them through networked

companies in developing agent activities. We could find that we will get as much in the way of revenues out of our participation in the agent business as we do out of banking" [3].

To cope with the changing nature of work and the work force it requires the support of multimedia IS. It is an evolutionary development of IS and an enabling technology, first a competitive advantage to some organisations who deploy it, later a necessity for survival of the organisation. Organisations will have to think radically about how multimedia IS will affect them. As Joseph De Feo confirms, banks of the future will no longer control the delivery channel because customers will no longer go physically to branches. Multimedia IS will change the way organisations do business fundamentally. Moreover, multimedia IS have significant impact on social life and work itself.

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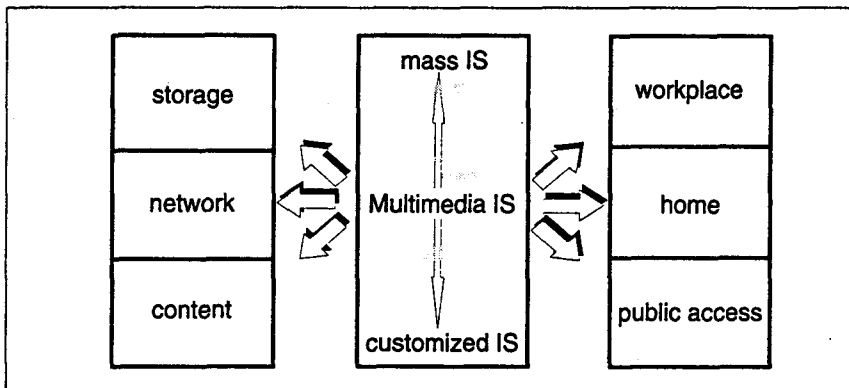


Figure 3: Multimedia IS and organisational redesign

The third research question asks what new products and services, markets and delivery channels will evolve. The following statement by the chairman of Barclays makes it quite clear what structural consequences multimedia IS will have at Barclays branch infrastructure: „I still believe that branches perform a valuable function at the interface between the bank and its customers, but technology and changing shopping habits mean that there will be fewer branches in the future" [1].

During 1993, the number of people employed in the Group reduced by 7'200 to 97'800. In 1988, the Group employed 118'400 people, so there has been a steady reduction over the last few years. New products and services are currently being explored by the external multimedia Homestead projects. Through electronic alliances Barclays is bundling prod-

multimedia PCs to the employees desktop very soon. As the chairman puts it: „Changes in work practices, particularly in the UK Domestic Bank, have meant significant extra resources being devoted to training. We also respect the changing nature of our work force. We allow increased flexibility in working arrangements - job sharing, a career break scheme for child care, responsibility breaks to care for elderly or sick people" [1].

Figure 3 shows the possible relationships between a service provider on the left and its client on the right side. In the case of Barclays, we can see an exploratory move of the organisation into the three domains. Joseph De Feo, head of information technology at Barclays, says: „Multimedia will make possible a range of services, but the customer will use an agent to gain access to them. The agent will be the brand. We would not want to get into agent work outside things we know about. But we believe we have to be a partner with the telcos or technology

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