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Online Shopping in the 1980s

Michael Aldrich

In 2008, the UK online home shopping market was worth more than £50 billion, £2.6 to £3.9 billion of which was from grocery shopping. This development was founded on advances made in the 1990s such as ubiquitous access to the World Wide Web, reasonably secure use of credits cards across the Internet, and so on.

A decade earlier, Redifon Computers had introduced online shopping—then known as teleshopping. Redifon found a business-to-business market for online shopping in 1981 and a business-to-consumer market in 1984, presaging the home shopping industry we see today.¹

The Technology, Circa 1979

In 1979, Redifon Computers was part of the UK Rediffusion Group of companies. The company was based in Crawley in Southern England. It manufactured minicomputers and designed systems for companies including Inland Revenue, British Aerospace, and Harrods. These were typically real-time systems utilizing minicomputers and desktop terminals with visual display units.

At the time, I was the Board Director in charge of marketing and I became CEO on January 1 1980. We investigated an interesting piece of equipment from the domestic electronics world. In the 1970s, there was a lot of interest in home information systems, and the British public telephone service (now British Telecom) developed the Prestel (Press the Television) system, whereby news, weather, and other text information was fed through a telephone line to a domestic television. Redifon was not in the home information business, but the company had been sent a modified television for evaluation. One of our engineers, Peter Champion, opened up the TV and found it contained a chip set with a chip modem, a character generator, and an auto-dialer that could hold four telephone numbers.

My background was in computer marketing; I had worked for Burroughs and Honeywell after studying history at university. One day in the summer of 1979 I was walking with my wife and wishing that we could avoid the boring weekly shopping expedition.

All of a sudden, I thought about that television and about hooking it up to the supermarket and getting the supermarket to deliver the groceries. My reasoning was that we had a domestic TV that could communicate, and we had a computer that not only could handle transaction processing from multiple users but also communicate (network) with other computers. We could build a networked real-time transaction processing system. Using an inexpensive domestic TV with a remarkably simple human interface, it could be used by anyone without training. With its ability to dial into any computer via a normal domestic telephone line, and using a standard communications and human interface, it could be used for multiple applications. It was not restricted to talking to just one computer for one function (like the airline reservation systems). It had genuine open market independent teleshopping capabilities.

Looking into the possibility more deeply, the product development and marketing costs would also be low. We already had the basic hardware and software, and we had a potential client base of large corporations and public and government institutions.

We did our first market research at an exhibition at the Data Entry Management Association Conference in New Orleans in September 1979. Our stand consisted of a table covered in green cloth with the TV on top. Under the table concealed by the cloth was Peter Champion, our intrepid engineer, lying on his back ready to patch through the connection at the right moment during the presentation. It was a bit cheeky, but it worked. The visitors were interested, intrigued, and excited. We hurried back to the UK and set to work building an I/O controller, courtesy of Roger Newman and his team, and a software interface by Jim

Bethell.

Prestel was an implementation of videotex technology—basically analogue TV plus asynchronous digital data communication by telephone line—for a nationwide UK public information service (see Figure 1). Its origins were therefore the telecom and consumer electronics industries rather than the computer industry, which largely ignored it. As a result, it became a kind of IT playdough where different organizations fashioned it according to their own needs and interests, and experimentation was widespread. Knight-Ridder in the US thought it could be used to deliver newspapers. France Telecom used it to substitute printing Telephone Directories, installing 10 million terminals and building the largest and most successful pre-Internet service in the world. Redifon never used the Prestel system. Redifon used the Prestel data transmission protocol so that televisions could become real time terminals and created new types of system.



Figure 1. 1979 pre-production online shopping system. Redifon used the Prestel (Press the Television) data transmission protocol to make televisions into real-time terminals for the first online shopping system (Courtesy of Aldrich Archive.)

But such was the publicity surrounding the technology that viewdata and videotex were confused in the marketplace. Redifon called it videotex most of the time, but sometimes it was easier to explain it as “viewdata plus.”

Initial Applications

I had thought the first application would be home (business-to-consumer) shopping. However, our system based on connecting a modified domestic television via a telephone line to a real-time multiuser transaction processing computer first led us to a new line of business with corporations, using the system for business-to-business online shopping such as for holiday travel, vehicle and spare parts, sales, loan finance, and credit ratings. These applications, which became operational in 1981, used the dial-up public-switched telephone network, leased lines, or both.

The first of these 1981 online shopping systems was for Thomson, which sold packaged holidays through High St. travel agencies. A system for Horizon Holidays provided the same capability.

John Phelan was the application designer and project manager for some of the shopping projects, including one for Peugeot-Talbot (then trading as Talbot Motors). John designed and developed the world’s first online, real-time car locator system that let dealers locate and buy either a new car from the

manufacturer or a used car from other dealers in the UK.

The company had other auto industry customers. Ford eventually had the largest system in the UK and continental Europe that helped its dealers order and locate new cars for customers. Nissan UK had a clever system that also sold online car finance in dealer offices by using a subsystem that automatically accessed customer credit histories from credit ratings agencies. General Motors used the system to sell spare **parts**. Most of these auto industry systems used Teleputers² rather than TVs as the terminals.

These business-to-business systems created in the 1980s were later adapted for use with the Web in the 1990s.

Home Shopping at Last

Finally in 1984, my initial idea of home shopping came to fruition in the north of the English city of Gateshead. The Gateshead Shopping and Information System was largely instigated by the late Ross Davies, a professor specializing in retail geography (the science of locating new retail stores) at the nearby University of Newcastle who later founded the Oxford Institute of Retail Management at Templeton College and became a retailing guru in Britain.³ The customers had access to the machine in the social center attached to their housing or in their homes. They entered their own orders. Television news footage exists showing the first customer, Jane Snowball, ordering her Tesco groceries from her home TV in 1984. (The re-created 1984 shopping machine used by Mrs. Snowball is expected to be operational by the end of 2011.) The scheme also included a chemist, Lloyds Pharmacies, and a baker, Greggs.



Figure 2. Jane and Ned Snowball shopping online in 1984. Television news footage captured Mrs. Snowball ordering Tesco groceries from her home. (Courtesy of Aldrich Archive.⁴)

The home shopping application connected supermarket chain Tesco with its customers, specifically with elderly people living at home or in retirement communities who were not able to go shopping. The project was a social service experiment, but it proved the concept of online grocery sales and home delivery.

A second project involved another city in northern England, another public body, and grocery shopping. The Bradford Centrepoint 1986 project provided public information and support services for citizens of Bradford, particularly those who were disadvantaged. One of the services was “teleshopping,” which offered online shopping and home delivery for 4,000 grocery items in conjunction with the large supermarket company Wm Morrison. The Bradford project was on a larger scale than the Gateshead system, with a primary objective of providing high-tech jobs for unemployed people. Clerks at Centrepoint entered the customer’s orders into the system. The Bradford system also provided news services. Both the Gateshead and Bradford initiatives were designed to help people unable to shop in the normal way.

My original idea—and what has become the practice for millions—was that remote shopping become a form of normal shopping. Among other things, online shopping required a revolution in payment systems—that is, Mrs. Snowball paid in cash because credit cards were not yet in universal use.

John Phelan was the application developer for both the Gateshead and Bradford systems. For these projects to succeed, it was necessary to develop many of the concepts that have since become commonplace: account login; an online shopping basket; the tailored prescreening of shopping usage providing repeatable shopping lists; and collective roll-up of multishopping stores succeeded into an easy-to-use, plain-to-see, and understandable shopping list with associated billing. Goods were collected and

dispatched within hours of receiving an order, or collection of orders, with simple-to-use technology and a softened customer-facing software interface.

Context and Reflection

Redifon Computers was briefly renamed Rediffusion Computers, and then in November 1984, it became and remains ROCC Computers. The company went on supplying systems for business work and at least one of the original shopping systems was in use until 2000.

Online shopping was only part of the story we told the world as we released these systems. In April 1980, Redifon released its Office Revolution concept—enabling corporations to connect all their communicating correspondents by digital networks (what today is called e-business). Both the specifics of online shopping and the generality of the office revolution were linked by two basic ideas. First, both business and shopping were essentially constructs of time, place, and space. Second, transportation costs were going up and telecom costs were coming down. Thus, shopping and business could be conducted 24/7, worldwide, in the telecom ether (or cyberspace, as it is now called).

These developments and prospects excited me to such an extent that I wrote a series of papers and a book⁵ describing them and trying to assess their impact on society. Reading those publications from the 1980s, the social impact of the developments has been pretty well as predicted even if the videotex technology proved short lived. The market wasn't ready for joined-up digital business in the 1980s. Business processes needed to be reengineered, as they were in the 1990s. Today's Internet shopping is beyond our wildest dreams.

As a fusion of PC, TV, and telecoms in 1980, the Teleputer is very much an idea of the moment.⁶ The current generation of Teleputers, however, will be based on cell phones rather than a desktop PCs.

High-bandwidth broadband from cable TV in the UK was another pioneering concept that became a practical reality. Information technology as interactive and participative mass communication is the basis of social networking. Today millions of families are doing something like this with a PC and a phone rather than a TV, as I originally used.

Business-to-consumer online shopping did not become commercially viable until the late 1990s when a critical mass of installed home computers was reached, improved telecommunications with the Internet opened up continents, and service providers appeared in volume. The terms online shopping, e-commerce, and e-business came into use during the 1990s. From 2000 onward, improved availability of bandwidth (broadband) at affordable prices, improved encryption for payment processing, improved search engines, exponential growth in service providers, and near saturation in installed home computers in first world countries made business-to-consumer applications ubiquitous. Tesco, the participant in the original Gateshead experiment of 1984, is probably the world's largest online grocer. It is also a major online shopping provider for non-food items.

My own focus now is on continuing to collect the technical history relating to online shopping and other aspects of history from the times I was active in the information technology industry. There are huge challenges in tracking old clients for their recollections and trying to re-create the original shopping system in a sustainable form for a museum. In an effort to do just that, the Michael Aldrich Archive has been working to re-create the 1984 shopping machine used by Mrs. Snowball using original vintage hardware and software. We expect the system to be operational by the end of 2011. This effort has been possible due to the dedication of a virtual team of contributors spread throughout the UK. Much of our time has been spent gathering and sorting necessary artifacts. After all, we live in a world where we recycle long before we reevaluate.⁷

Michael Aldrich had a 38-year career in the IT industry, 20 years of which were spent as CEO of the international computer company Redifon/Rediffusion/ROCC Computers. He retired as CEO in 2000 and became non-executive chairman. Contact him at michael.aldrich@rocc.co.uk.

References and Notes

1. This anecdote focuses on UK activities with which I had firsthand involvement and does not try to place these

activities in a larger historical or international context.

2. Redifon manufactured and sold several versions of Teleputers (which combined televisions and computers) in the 1980s, including the Teleputer/3,
http://www.aldricharchive.com/downloads/TELEPUTER_SPECIFICATIONS.pdf.
3. J. Reynolds and M. Lowe, "Commemorating the Life and Work of Professor Ross Davies, 1940–2005," *Int'l J. Retail & Distribution Management*, vol. 35 no. 8, 2007, pp. 616–619.
4. For an interview with Mrs. Snowball, see <http://www.aldricharchive.com/snowball.html>.
5. M. Aldrich, *Videotex – Key to the Wired City*, Quiller Press, 1982.
6. A. Hamilton, "The Return of the Teleputer," *Time*, 11 Nov. 2002;
<http://www.time.com/time/magazine/article/0,9171,1003620,00.html>.
7. Many of the original documents associated with the developments I describe here are held by the Aldrich Library, University of Brighton, England. Some are reproduced as part of the Michael Aldrich Archive,
<http://www.aldricharchive.com/index.html>.

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