sufficient, these could conceivably provide a reference for derivatives. Realistically, however, this is some way in the future.

Undoubtedly an active derivatives market, should it develop, would have a beneficial impact on the spot market. For the industry as a whole, the existence of an active derivatives market would provide a means of financial hedging against price risk, and a market established prediction of expected future pricing trends.

SUMMARY: "ANYTHING FOR WHICH YOU CAN BID OR OFFER IS A COMMODITY!"

So said a forthright customer of Band-X recently. Although minutes are not of a homogenous quality, they are similar enough to be traded like a commodity, as much as varying qualities of iron ore are traded. Provided the parties to a trade both understand the quality issues involved, then establishing a price is achievable.

A greater obstacle than quality to commoditisation is that the change of ownership continues to happen over an extended period of time rather than being a change of ownership that occurs at a single moment. Curiously, commercial wrangling is more complex and time consuming than agreeing the increasingly straightforward technical interconnection.

The managed bandwidth trades executed by Band-X to date have been less complex to execute than the switched minutes trades. Payment is normally agreed for a year or longer and does not have the complication of call data and billing data records.

So whilst it is a commodity with similarities to many others, it is difficult to view a minute as just a minute, and it would be truer to say that a bit per second is just a bit per second. It is therefore likely that bandwidth trading will become generally accepted as a commodity faster than minutes. Importantly both are now possible on Band-X.

PURCHASING ON THE NET – THE NEW OPPORTUNITIES FOR ELECTRONIC COMMERCE

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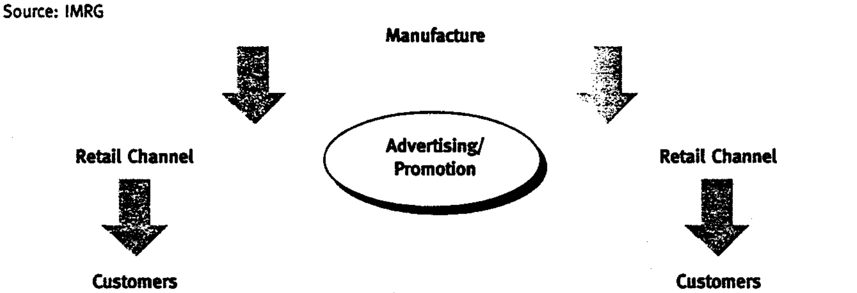
ONLINE ECONOMICS: THE NEW VALUE CHAINS

While a growing number of retailers have successfully implemented electronic commerce solutions, the experience of these early adopters provides valuable insights into how new value chains are constructed. The electronic commerce model requires a very different approach to customer acquisition, promotion, merchandising, and distribution.

In the conventional retail model, the transaction chain uses established middlemen – retailers, dealers and agents – to handle service, support and fulfilment. Advertising campaigns and instore promotions are employed to create awareness of products and services, and support the activities of the middlemen. The traditional retail model is characterised by a differentiated product offer by a large number of manufacturers, to a mass market of consumers, via a range of intermediary retail channels.

Figure 1
Conventional retail economics

Source: IMRG

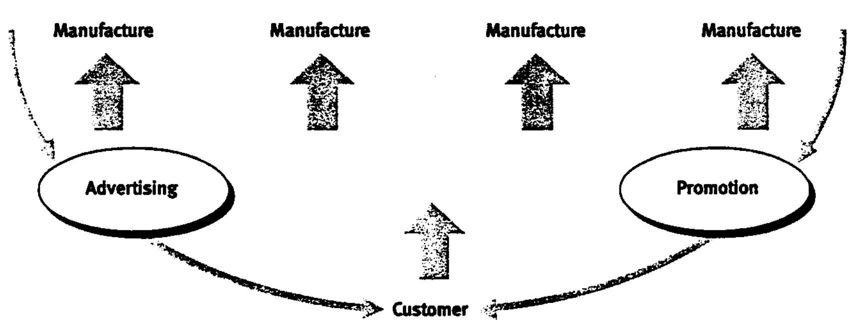


In the electronic commerce model, an individual consumer has the power to select one of many suppliers, based on value, price, perceived quality and other criteria.

A major difference is that manufacturers need to deliver both advertising messages, customer communication and products direct to the customer. The most important element in this new chain is the shift in level of control. The customer can manage the sales process to a much greater degree.

Figure 2
Electronic commerce economics

Source: IMRG



In addition to increasing the degree of customer control over the transaction, electronic commerce has many built-in advantages that enhance the purchasing experience, with potential benefits for both manufacturers and consumers:

- Products and services can be ordered at more convenient locations and times;
- Selection and buying is faster;
- Product information can be embedded in the selection process;
- Removal of around 35% margin represented by typical retail overhead;
- A personal, customised service.

Electronic commerce offers measurable cost advantages compared with setting up a conventional retail operation. The ratio of fixed to variable costs is shifted significantly in the seller's favour. By removing much of the necessary overhead – property, business rates, utilities and salaries – the operators of electronic commerce outlets can drive down start-up costs to an absolute minimum. And the operating costs of an electronic business are entirely variable – advertising, cost of sales and fulfilment.

Type of operation	Cost (£K)
Supermarket (greenfield site)	5,000
Bespoke online store (pre-1997)	1,000
Merchant application	20

Table 5
Comparative start-up costs of retail operations

DISINTERMEDIATION

Disintermediation is the process of cutting intermediaries out of traditional sales processes. Changes in the way products and services are distributed bring about changes in the roles that the different types of intermediaries are required to undertake in new types of electronic transaction chains. By fragmenting the point of sale, electronic channels disintermediate existing sales processes and create a transfer of value from one medium to another.

As the electronic channel grows, companies with greater organisational flexibility will be able to maintain competitive advantage despite the threat of disintermediation. The emphasis will shift from conventional channels of distribution: the high street and the supermarket – to channels that can service customer demand directly. This approach allows organisations that are less functionally oriented and more responsive, to better identify new opportunities. Smart organisations will use technology to streamline new business processes. Limitations caused by traditional commercial practices will break down, as businesses become better at identifying mechanisms to create and deliver value.

THE ELECTRONIC BUSINESS MODEL

Already, established retailers are being challenged by new entrants using direct channels to undercut them and build market share. Direct sales of many products – books, music CDs and multimedia titles – already exceed store-based volumes in many regions. It's likely that the direct sales channels of today will evolve into the electronic commerce channels of tomorrow. Gemini Consulting forecasts UK online commerce revenues of £21 billion – 30% of the market – in just seven years, pointing to enormous and rapid development of the market. For an increasing number of goods and services, the trend is towards direct sales with point to point and home distribution.

For many retailers struggling with fluctuating market demands and increasing competition, the flexibility afforded by electronic commerce conflicts with the rigidity of long-term business planning. In the past, customers have been successfully persuaded that they should individually handle product selection, transport, collection, and even checkout functions. This arrangement is clearly beneficial for retailers, but less so for increasingly enlightened consumers. Although there is a grudging general acceptance that electronic commerce will have a role in the retail economy of the future, for many large organisations, the change is too abrupt. Retailers recognise that migration to electronic selling threatens the dominance of the physical point of sale, and requires a complete restructuring of their existing business processes. Yet for many retailers, the bulk of their investment and resources are tied to a store network and they are unwilling to compromise that investment. It's no accident therefore, that the pioneers of electronic commerce fall into three main categories:

- Start-ups, organisations with no existing investment or legacy systems to protect;
- Technology companies, with a vested interest in building the channel to market products and services;
- Media companies, attracted by low set-up costs, and immediate distribution of news and information.

In the electronic retail environment, the sales, marketing and fulfilment processes have to be completely restructured. For the direct retailer, customer acquisition has become paramount. Electronic commerce provides a level playing field on which new entrants to the marketplace can present exactly the same type of shop front as the larger, established operators. If these new entrants can create economic methods of electronic one to one marketing, customer service and fulfilment, many types of existing retail operations may simply disappear.

OPPORTUNITIES AND THREATS

Essentially, the approach to the opportunities and threats posed by direct to home retail channels result in one of three courses of action:

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- Do nothing;
- Consolidate existing operations;
- Exploit the opportunities provided by electronic commerce.

Inaction has never been much of a strategy, yet historically, it has been the most common one. Inaction is the reason for the downfall of many businesses in the past. Railway companies failed to act against the threat of motor car and air travel, film studios failed to act when television came along, mainframe computer companies failed to recognise the threat from the PC. All led to disaster, or near-disaster for many large organisations, and all led to the establishment of a new economic order in the affected industries.

Consolidation can be described as inaction while keeping one eye on developments in the marketplace. The introduction of loyalty schemes is a consolidatory res-ponse to the threat of direct and other competitors. Research indicates that the cost of acquiring a new customer is around six times that of servicing an existing one. Clearly customer loyalty is worth maintaining. Other consolidatory strategies include those that defend an organisation's current competitive offering, while placing barriers in the way of new and existing competitors gaining market share.

Exploitation requires a response to new challenges of which few established organisations will be capable. New entry to a market, or an attack on a new market using an adapted offering are likely to be the most successful approaches.

Assessing core competencies

Two of the most difficult exercises for any business are assessing its core competencies, and identifying its core business. Newspapers may appear to be in the news business, but they are really in the distribution business. Television broadcasters' core competencies may appear to be programme buying and scheduling, but they are really advertising sales and marketing.

For years, the successful retail business has required effective, linear supply chain and maximum efficiency at the point of sale. Many retailers regard the supply chain and the point of sale as their core businesses, and service (at the point of sale) and point to point logistics as their core competencies. Direct channels, on the other hand, have core competencies that appear to be at variance with conventional retail strategy, but which prove far more efficient at managing the customer-facing aspects of the business. In fact, a direct retailer requires only the customer-facing competencies – all the rest can be outsourced. This creates an environment characterised by increasing competition across a number of industries. It also suggests that conventional retailers, chained to a fixed point of sale, with a well-trained staff and an effective logistics infrastructure – may be the businesses that are most at risk.

It's likely that several alternative electronic commerce models, using a variety of technology platforms as their channels to market will supplant the conventional retail model. Consultancy Deloitte & Touche has identified some of these emerging models as:

Focused supplier

The focused supplier will bring together products from multiple suppliers to offer a direct shopping format for a single, narrow range. If the focused supplier is recognised as owning the customer perspective, suppliers will be forced to compete in this way.

Online store

The advantages of franchise recognition can be translated to the online environment. This model can prevent manufacturers and other third parties from encroaching on established markets.

Low-cost provider

The low-cost provider can reduce end-user pricing by slashing supply chain costs. Between 20% and 40% of retail prices are typically tied up in supply chain costs.

TRANSACTION BROKER

Merchants that represent the interests of groups of customers will be able to leverage bulk buying power and deal direct with suppliers.

BRAND PURVEYOR

Strong brands will be able to migrate to direct channels easily, because customers will easily recognise them. Also, strong brands will be able to move sideways into new markets and build market share from a standing start.

CHANGING CONSUMER PERCEPTIONS

Reflecting a growing amount of media coverage over the past year, consumer awareness of electronic commerce is on the increase. A recent study by the Interactive Media in Retail Group reveals that 88% of the UK population have now heard of the Internet, up from 65% in 1995. 11% of the population has used it, 17% agree that they would be interested in using it for banking purposes, and 74% agree that it is a useful information-gathering medium.

The same study reveals that 98% of the sample admitted to purchasing goods or services over the telephone, while 67% of Internet subscribers reported having made a purchase using an online service. 78% would pay a premium to have groceries delivered to the home. 14% would pay a 20% surcharge for this service and 50% would pay 10%. 47% of home shopping aficionados would like to do it via the TV, 21% via their PC and 25% would like both options.

Telephone banking is supported by 19% of home shopping aficionados. 35% would like to be able to use a home banking service via television, and 39% would like to bank from home using their PC. 37% would switch their bank account to a provider offering home banking. The main perceived advantages are saving time (49%), not having to go to a branch (28%), less effort (28%) and 24-hour access (11%). The percentage of people who expect to be able to use home banking (31%) and shopping services (27%) via the TV or PC over the next five years has increased since 1995 from 24% and 18% respectively.

The following findings suggest that growth in electronic channels be widely expected to take off during 1997/1998, as access to online services and interactive TV becomes mainstream.

When will electronic channels become important for commerce?

	%
1996	0
1997	20
1998	32
1999	22
2000	17
Never	9

Table 6 Timescale projections for electronic channels
Source: IMRG

What percentage of commerce will be handled by electronic channels?

	% (1997)	% (2000)
0-10	78	28
11-20	12	24
21-30	2	24
31-40	2	8
41-50	0	12
51-60	2	2
61-70	0	1
71-80	2	1
81-90	2	0
91-100	0	0

Table 7 Percentage projections for electronic channels
Source: IMRG

ABOUT iCAT

iCat Corporation, founded in 1993 and based in Seattle, Washington, is solely dedicated to providing corporations and merchants with the most complete, powerful, and flexible solution for creating Web catalogues with secure transaction processing. The privately held company has technology and marketing relationships with UPS, Compaq, EDS, CyberCash, LitleNet, HP, Sun, TAXWARE and others.

Internationally, iCat Europe, Ltd. has established sales and marketing operations in UK, France, and Germany; Trans Cosmos Incorporated also distributes the products in Japan. iCat Corporation is at the forefront of creating industry standards for electronic commerce and is currently a member of a number of professional Internet organisations, including the World Wide Web Consortium, CommerceNet, and the Association for Retailing Standards. For more information, visit the iCat Web site at www.icat.co.uk.