STRATEGIES FOR WINNING THE BROADBAND ACCESS RACE

Scott Beardsley, Pär Edin, Alan Miles and Wilhelm Mohn

Broadband represents a major discontinuity for the communications industry. To win in the new competitive environment, players must act now with an attacker's mindset or risk seeing value destroyed by those who make the right moves today. Though it is not yet clear who will win, it is possible to identify the strengths and weaknesses of the main groups of players, and outline some of the elements of a successful strategy.

The race to deploy a "last-mile" infrastructure that can offer broadband access to consumers and small and medium-sized businesses is well under way. Although it started later in Europe than in North America, projections suggest that there will be equal numbers of broadband subscribers on the two continents by 2004.

The broadband access race is also beginning in other parts of the world. Incumbent players – telcos, cable companies and satellite providers – face formidable challengers. They are up against fierce competition from brand new attackers on one side and from other incumbents expanding to provide multi-country services on the other.
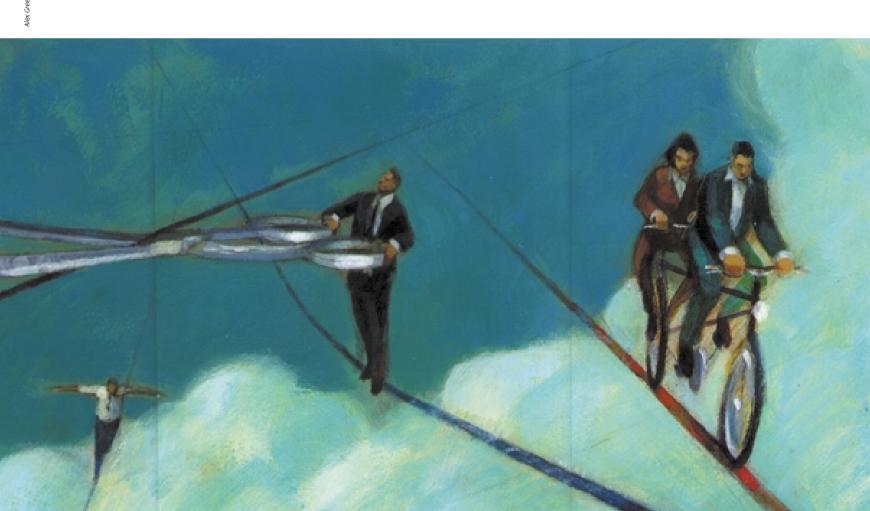
Who will win the race? While the dust is beginning to settle in North America, it is too early to predict the outcome in Europe and the rest of the world. But we can identify some of the characteristics that will mark out the eventual winners.

EARLY MOVERS WILL BE ABLE TO DEFINE THE RULES OF THE GAME AND SHAPE THE INDUSTRY STRUCTURE IN THEIR LOCAL MARKETS

- Whether incumbents or new entrants, they will be **early movers with an attacker's mindset**. Early movers will be able to define the rules of the game and shape the industry structure in their local markets provided they build strong brands, attract and lock in early adopters and ensure high-quality operations and customer services. In many countries, incumbents command a natural advantage, but this will soon vanish if they are merely reactive and let attackers move ahead.

- Winners will possess **high-quality core skills in marketing and operational execution**. To get customers, they must be adept at formulating attractive offerings and marketing them to end users. They will also need superb execution in managing a rapid roll-out and maintaining reliable service. Many offerings will call for on-site installation and customer education. All these skills are coming under the spotlight in the broadband era as applications and content become more important to end users.

- Winners will be quick to **exploit partnering opportunities** in all parts of the value chain. Telcos will need privileged access to attractive content and services; portals will need carriage on different access

Alex Green

technologies; players in a specific access technology will need to have adequate backbone capacity, connectivity and caching capability, and to reach customers and content resident outside their own infrastructure; and everyone will need relationships with installation and service companies. Establishing these partnerships early will be a vital ingredient of a successful broadband strategy.

OFFERING ATTRACTIVE CONTENT AND EASY-TO-USE SERVICES WILL BE A BETTER BET THAN TRYING TO LOCK CUSTOMERS IN THROUGH PROPRIETARY STANDARDS

- Winners are likely to be **platform agnostic**, creating a portfolio of technical solutions that allows them to expand their customer base beyond the natural reach of one access technology. The same goes for the content and service provision side of the business, where open, non-proprietary platforms are likely to dominate. A few short-term exceptions aside, offering attractive content and easy-to-use services will be a better bet than trying to lock customers in through proprietary standards.

- Winners will **constantly monitor their environment and adjust their strategies** in response to changes. Regulatory decisions, the emergence of resellers and wholesale markets, industry restructuring as a result of acquisitions or partnerships, and the advent of killer content and powerful business models will present new opportunities and threats. Winners will be quick to detect and respond to these developments.

Each player will need to take its own market conditions into account when formulating a strategy for broadband. The most important local variations will concern the speed and extent of access deregulation, the regulatory limitations on bundled offerings, the emergence of wholesale capacity markets and the extent to which players can (and do) pursue oligopolistic local market strategies.

However, it is possible to identify advantages, disadvantages and strategic imperatives that apply to the main groups of players no matter where they operate. Here, we look at the prospects of four of them: incumbent telcos, access attackers, cable providers and satellite operators.

INCUMBENT TELCOS

In most countries where a robust wireline telephone infrastructure is in place, incumbent telcos start out in a very strong position to capture value from broadband. They bring three key advantages to the race:

- **An existing billing relationship** with most of the homes and businesses in their domestic market, coupled with established brands and sales forces and a huge market presence.

- **A technically and economically attractive technology** that has great reach. It is estimated that DSL (digital subscriber line) can be made available to at least 80 percent of European Union households and businesses, though there are big differences between countries. Where deregulation has not yet taken place, incumbent telcos have an opportunity to deploy DSL before attackers do.

SLOW-MOVING INCUMBENTS RUN THE RISK THAT NEWCOMERS WILL CHERRY-PICK THE MOST VALUABLE CUSTOMERS EARLY ON

- **Leadership among existing Internet users**. Thanks to the incentives they have had to build Internet service provider (ISP) businesses, most incumbent telcos in Europe, Asia, Africa and Latin America own the dominant ISP in their home market.[*]

Admittedly, telcos have been slow off the mark in deploying DSL, but this is changing. Regulations are forcing them not only to open up the local loop to competition, but also – particularly in Europe – to sell off

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[*] Because users in the European Union pay by the minute to access the Internet over their phone lines, the ISP business has been a profit centre for telcos. In North America, flat-rate monthly phone charges have made Internet access a massive profit drain for local telcos, which have been forced to invest in network capacity without receiving any additional revenues in return.

the cable assets that some had planned to use as the lynchpin of their broadband strategy. What this means is that telcos simply cannot afford to stand still – especially since they have a number of weaknesses that open up avenues for attack by newcomers:

Mindset. Many incumbent telcos are still struggling to reconcile themselves to the dilution of short-term earnings and the threat of cannibalization that broadband represents, and to shed a defensive mentality that is not conducive to moving quickly or early. Their competitors, by contrast, are likely to be nimble, well funded, highly valued and unencumbered by start-up losses or cannibalization worries. Slow-moving incumbents run the risk that newcomers, helped by savvy resellers and overbuilders, will cherry-pick the most valuable customers early on.

Marketing skills. While incumbents possess deep technical skills, attackers and newcomers from Internet and mobile businesses have repeatedly demonstrated strong capabilities in formulating attractive offerings and marketing them to end users. Incumbents should

In order to overcome these obstacles and build on their advantages, incumbent telcos should concentrate on:

- **Deploying DSL rapidly**, even if it means cannibalizing existing businesses such as leased lines or ISDN. This cannibalization will be inevitable when the local loop is unbundled in any case. By moving decisively to drive penetration, telcos can improve their attractiveness to potential partners and establish a critical edge in branding and a competitive position that will be hard to beat.

- Continuing to build their content and service offering by rapidly **bundling providers into their portal**. Experience in the narrowband world has shown how a virtuous circle is set in motion when attractive content and services lure more users who in turn drive the production of more content and services.

- Choosing where to roll out services first with a view to **pre-empting potential competitors**. DSL providers should consider forming partnerships with satellite operators so that they can

DSL PROVIDERS SHOULD CONSIDER FORMING PARTNERSHIPS WITH SATELLITE OPERATORS SO THAT THEY CAN BUNDLE VIDEO WITH THEIR OWN VOICE AND DATA SERVICES

respond by segmenting markets and devising product packages to meet different customers' needs. They must also consider how they can transform themselves into truly customer-driven organizations and build long-term relationships with end users.

Video constraints. DSL provides a compelling means of delivering voice and high-speed interactive broadband and data services, but constraints on bandwidth mean that it cannot deliver multiple channels of video simultaneously. To the extent that customers regard video as an important part of the bundle, DSL could be at a disadvantage to alternatives such as cable. This may pose a problem for incumbent telcos in the medium term until they can deploy VDSL (very high data rate DSL) commercially.[*]
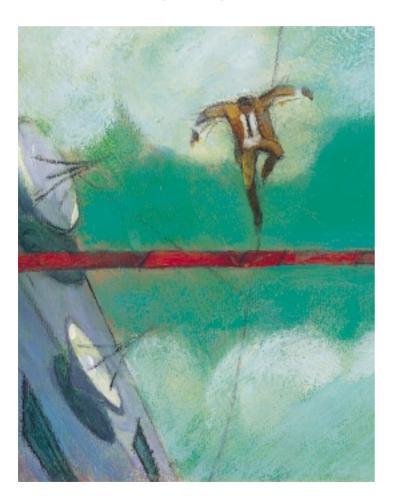
bundle video with their own voice and data services. The obvious place to start would be in areas that are cabled, especially if the cable plant is cable-modem ready.

- **Upgrading the backbone and caching infrastructure** to prevent new bottlenecks occurring. Fixing the access bottleneck won't be enough if the backbone and servers haven't been upgraded where necessary to support increasing demand. For most operators, this represents a major challenge, particularly in the edge backbone networks between the local loops and the major intercity backbones. There are early signs that broadband users spend more time on line and download more data per minute than narrowband users do, so telcos must ensure there is enough broadband capacity

[*] *See* "DSL: High-speed data over copper lines," pp. 48–51.

throughout the network to guarantee them a high-speed experience. Operators should also carefully assess their network architecture to see if VDSL services are economic for delivering video streams.

- **Segmenting the product offering** to address different customer needs. SMEs may need higher bandwidth than consumers and demand multi-line pricing, for instance. Some customers will value the ability to access the same services from a variety of different devices, while others will want to belong to a particular community of users, such as a sports club. To meet these needs, telcos will have to put in place a range of packages.

- **Improving their operations**. Incumbents should focus on such basics as customer care and fulfilment, taking care to keep quality at a level that can be maintained during a rapid rollout.

Incumbents that do not craft their roll-out strategy now and start to execute it straight away will be forced to defend themselves against each and every attacker that arrives on the field. Competing in this reactive way will drain their resources and fragment their approach to the market.

ACCESS ATTACKERS

Access attackers adopt a variety of last-mile technologies to connect subscribers to the backbone network. They offer broadband access in competition with incumbents in areas where the existing infrastructure has been deregulated or where new access infrastructure can be economically deployed.

In markets where regulators move quickly, access attackers have a window during which they can beat telcos to the best customers. The unbundling of the local loop gives them a way of **reaching end users via DSL**, as Northpoint, Rhythms and Covad are doing in North America and QSC is doing in Germany. Marketing-savvy resellers and overbuilders may also be potent drivers of DSL penetration in attractive local markets, as companies such as RCN and Knology have proved in the United States. In addition, access attackers can choose from a variety of last-mile technologies to **reach target niches**, such as fibre/LAN for shared occupancy buildings.

The access attacker business is very attractive, offering opportunities both to capture high-value customers early and to build market value for investors. We are likely to see more backbone providers become access attackers since this gives them an easy way to forward-integrate and establish critical relationships with end users.

One major obstacle for attackers is that they usually have to **start without a customer base or recognized brand**. Moreover, few boast a portal – and bundling broadband access with a portal could turn out to be a critical success factor. On the other hand, not having portals

of their own could be a blessing in disguise for attackers that form effective partnerships with established portal players eager to build their broadband presence.

In order to succeed, access attackers must act now to **take advantage of the interval before the telcos roll out DSL over the next year or two**. To do so, they must formulate a product/market strategy and revise it constantly as they gain experience in the market. Relationships with content and service providers will be critical if they are to create a viable portal quickly.

Operating in an unbundled environment will require access attackers to **understand**, **influence and act on the multiplicity of regulations** in each country. The timing of unbundling and the details of regulation vary from place to place. It will be vital to understand the rules governing pricing and the way that attackers can deploy equipment in

BUNDLES OF SERVICES CAN BE HARD TO EXECUTE WELL

incumbents' local exchanges, and how these rules will affect profitability and speed to market. For this reason, many attackers are likely to **pursue partnerships with local players** to manage regulatory challenges.

Rather than confine their efforts to DSL, attackers can **deploy other last-mile technologies** to reach specific niches before the local loop is unbundled. This may give them a lead over incumbents; it will certainly give them valuable market experience that can eventually be transferred to the DSL environment, especially if they focus on the weaknesses in current players' product/market portfolios (for instance, cable players have little experience with SMEs). Some of the niches they might consider are deploying fibre/LAN to shared occupancy buildings in fibre-rich areas; using LMDS to reach SMEs; and bidding for UMTS licences or pursuing UMTS wholesaling strategies, perhaps using satellite for the time being as a bridge between narrowband and true two-way broadband.

Like incumbent telcos, access attackers also need to **ensure there is sufficient backbone and caching capacity** to keep the bottleneck from shifting backwards in the network once capacity demands on the last mile increase. As a result, they are likely to be more prevalent in fibre-rich markets where surplus backbone capacity exists.

Finally, access attackers must **work towards a threshold level of operational excellence** that includes quality customer care, plug and play installation and marketing and branding support. For many, building such skills will prove a challenge – perhaps the toughest they face in sustaining their business over the long term.

CABLE PROVIDERS

Cable is uniquely well positioned to deliver a bundle of services that includes voice, video and data. In areas where plant is already deployed – especially where it has been upgraded to be cable-modem ready – cable should be a formidable competitor.

European cable players such as UPC and NTL and North American players such as ATT, Cablevision and Time Warner possess existing **customer relationships**, **brands and market presence**. In addition, most of those quoted on the stock market enjoy **a substantial market premium** based on the expectation that they will be able to deliver a variety of new services. This premium gives them currency in the form of stock that they can use to fund growth through acquisition.

In some countries, **the necessary upgrades have already taken place**; in others they **have not yet been completed** or have not even been begun. Upgrades are expensive, and take a long time. Moreover, cable players have **relationships only with subscribers inside their current footprint** – the area served by their cable plant. The footprint misses areas that include whole classes of potential end users such as SMEs.

Worse, the footprint of an individual cable player **rarely corresponds to a natural market** such as a metropolitan area. Greater London and Brussels are each served by several cable franchises, for instance – a situation that makes it harder to build brands and market them effectively. Finally, **bundles of services can be hard to execute well**.

Most cable companies have been so preoccupied with TV-related offerings that they have been slow to develop integrated bundles of services.

To address these challenges, cable providers should:

- **Improve their operations**. Cable companies need to develop the capability to deploy, market and service new products rapidly. For the many operators that currently offer only a few products, this will require step changes in customer service, retail distribution and operational management.

- **Upgrade their infrastructure** so that they are able to offer a host of interactive broadband services. While most North American cable players have made good progress on this front, most European and other cable operators have not. If they don't act quickly, DSL, satellite or another technology will be first to market. Naturally, cable players have to decide where and when to perform the necessary plant upgrades. To help them do so, they should perform a cost/benefit analysis on all their service areas to determine which need upgrading most, and then carry out the work as quickly as possible.

- **Implement a portal strategy** that will secure critical content and services quickly, especially in the areas that attract the most customers. For most cable companies, the best way to create a virtuous circle of rising customer numbers could be to **use the voice, video and Internet data bundle to differentiate them** in the competition for new subscribers.

- **Ensure that a high-speed end-to-end environment is achieved**. As well as making decisions about backbone upgrades and content mirroring, cable operators need to think carefully about the size of the nodes over which they will deliver services, since the nature of cable modem means that performance declines as more subscribers use the service at any one time.

Cable players, especially the smaller ones, will be in the happy position of having to decide whether to continue investing or sell to the highest bidder. Telcos that still own cable assets – over 40 percent of cable subscriptions in Europe remain with incumbents – will have to continue to grapple with the complexity of positioning their DSL and cable offerings and managing mounting regulatory pressure to divest. Consolidation will be an increasing source of value as cable players go head to head with much larger telcos in some countries.

CABLE PLAYERS WILL HAVE TO DECIDE WHETHER TO CONTINUE INVESTING OR SELL TO THE HIGHEST BIDDER

- **Extend their footprint**. A typical cable player has plenty of room to extend its footprint through metropolitan and regional plant consolidations and swaps with other cable players. Building scale in this way will allow cable operators to compete on a national level and exploit mass-market advertising media such as television more effectively.

- **Extend their service beyond their footprint**, perhaps by using other last-mile technologies such as satellite, LMDS to SMEs, or fibre/LAN to SMEs in fibre-rich areas. If cable operators fail to do this, their portals may be marginalized and their attractiveness to other portal providers diminished.

SATELLITE OPERATORS
Although their offering is often dismissed as too complex and too costly, DTH (direct-to-home) satellite operators and service providers are actively deploying their services in many markets, and could represent the wild card in the broadband access game. In fact, they are well placed to succeed in a number of key roles.

First, only satellite players will be able to deliver broadband content to the small but significant portion of the population living in **rural areas**. Second, satellite can offer **first-mover advantage** in the rapid roll-out of broadband services with limited interactivity across the whole of Europe. Third, satellite can **complement wired access**

technologies such as DSL in delivering video content to end users. It may also operate in the boundary between backbone and access infrastructures by ensuring economic distribution of video content to networks of distributed access nodes.

Satellite players bring a set of frequently overlooked advantages to the broadband access race:

- **Broad and immediate reach**. Unlike other broadband technologies that will become widely available only after heavy investment and long lead times, satellite already covers every household and business in Europe that has a clear line of sight to a DTH satellite in the sky. Half of all TV households in Europe already receive some of their programmes at broadband speeds via satellite, either directly or through their local cable networks.

- **A big installed customer base**, with more than 30 million satellite receivers in European homes. Most satellite providers are already gearing up for the transition from analogue to digital TV broadcasting; supplying new dishes and boxes to their customers gives them an excellent opportunity to offer broadband services at the same time.

- **The ability to broadcast broadband content simultaneously to millions of end users** at only marginally higher cost than to a single user. This gives satellite operators enormous economic advantages in delivering point-to-multi-point applications such as video streaming and caching services.

- **Existing relationships with content providers** that currently supply local and international video content through their free-to-air and pay-TV programme schedules. Many surfers on satellite already enjoy the additional benefit of being able to watch free-to-air television channels on their PC.

SATELLITE CAN OFFER FIRST-MOVER ADVANTAGE IN THE RAPID ROLL-OUT OF BROADBAND SERVICES ACROSS THE WHOLE OF EUROPE

Satellite players also face obstacles to providing broadband access:

- Their services are currently **limited in interactivity**. Consumers and SMEs that use satellite for access are currently restricted to hybrid

broadband services in which the narrowband telephone network is used as the return path. New technology that will make full two-way services economically attractive is likely to appear by 2001, but will not be widely available until 2002.

- Transmission delays caused by the distance between satellite and subscriber will **impair voice and gaming applications**. If not addressed in the design of the system, these delays may also affect IP (Internet protocol) applications.

- Satellite players also face **operational challenges** in rolling out CPE (customer premises equipment) to end users. Installation involving PCs and TVs can be cumbersome and reach can be difficult to predict, particularly in urban areas where line of sight towards the satellite can be blocked by buildings.

SATELLITE PLAYERS THAT DELAY OFFERING BROADBAND WILL BE VULNERABLE TO ATTACK FROM MORE DECISIVE COMPETITORS

- Capacity providers such as SES Astra, Eutelsat, Intelsat and AsiaSat encounter a different problem in that they **do not sell services directly to end users**. In pursuing opportunities in broadband last-mile access, they will need to handle their pay-TV operator customers carefully if they try to establish direct relationships with end users. Another difficulty for many transponder providers is their **complex ownership structures**: some are partly owned by a sovereign state and some are partly controlled by telcos with competing access strategies.

- The economics of point-to-point satellite applications are **sensitive to the number of users** that can share bandwidth. Satellite can, for instance, economically support applications such as high-speed Internet access if many users spend only a fraction of their time downloading. But for bandwidth-demanding point-to-point applications such as videoconferencing, the cost becomes prohibitive.

Satellite players that delay offering broadband as part of their service will be vulnerable to attack from more decisive competitors, especially if these rivals offer to install new digital equipment and re-point customers' antennae towards their own satellite position.

Savvy operators should be able to overcome most of these obstacles. In markets where DSL players are strong, satellite operators should consider **partnering** with them to put together a **voice**, **video and data service** that can compete directly with cable operators' offerings. Such a service could also act as a way of converting existing satellite subscribers, whether pay or free-to-air. Later, the same service could be rolled out to areas without cable, where it would have no direct competition.

Satellite operators should **make two-way CPE and services available as soon as possible** to customers such as SMEs for which the expense is justified. When the CPE becomes cheaper, it can be rolled out to the mass market. As well as providing "always-on" access to the Internet, two-way capability saves dial-up charges and interconnect costs for users outside North America.

Like other broadband players, satellite operators need to **create portal strategies.** They must consider how to differentiate their PC and TV broadband portals, and act decisively to form partnerships with existing portal providers. In developing their services, they should exploit the point-to-multi-point strengths of satellite,including broadcast television, streaming video and portal content that can be cached at the user's premises. For access infrastructure, satellite operators should attempt to maintain an open platform to accommodate multiple providers.

Last, satellite operators must ensure **a threshold level of operational excellence** if they are to succeed. This may prove easier for satellite pay-TV providers that can take advantage of existing systems and skills than for pure transponder operators. They will need to acquire expertise in channel management and installation, among other things.

The winners of the access infrastructure race will not necessarily keep all the prizes to themselves. Access is only one part of the broadband value chain; participants in other parts of the value chain will compete with them for end customer relationships and broadband revenues, among them portals, e-commerce players, backbone providers, device manufacturers and retailers. Over time, many of these players are likely to develop robust business models and attractive value propositions that will challenge access providers' positions. For the moment, though, access represents the main bottleneck in broadband deployment, so access providers are in a good position to develop successful broadband businesses. The race is theirs to win if they move fast with an attacker's mindset and devise compelling customer offerings. But it is also theirs to lose: failing to use their head start to build strong customer relationships will put them at risk of being marginalized in the value chain.

The next article considers how the broadband value chain might develop in response to shaping moves by key players, and speculates about the possible outcomes for the industry as a whole.