

Routes to market for Voice over Wireless: an examination of the evolving market structure

About this paper

This paper is one of a series published by Samsung Telecom UK examining the development of the market for Voice over IP (VoIP) and specifically Voice over Wireless (VoW).

The papers are structured around a number of different threads: the Virtual Enterprise, a Technical thread, and a Handset thread. This paper stands alone and looks at market structures, how they are likely to evolve and routes to market for VoW technology.

Many of the themes covered here are also covered with different emphasis in other papers and threads. Rather than repeating this work (except where it is critical to understanding) each paper focuses on the specific concerns of its own theme.

Introduction

To discuss how a product comes to market it is necessary to understand how technology markets evolve. This process has become well understood over the past 15 years, based largely on the work of Geoffrey A. Moore, especially "Crossing the Chasm" published in 1991. In it he posits that technology markets follow an adoption "bell curve" with the critical phase being where levels of take up "cross the chasm" from early adopters to the mainstream. VoIP and Wireless technology are each in the "crossing the chasm" stage and VoW is still much earlier in the cycle. It can be argued as to where each element sits but the model has as much importance from an illustrative perspective as it does from a precision one. The important questions are whether these technologies can and will cross the chasm.

A critical piece of understanding in developing strategies for these technologies is of the routes to market: how the products get distributed, marketed, bought and sold. The first important realisation is that these routes and channels can (and probably will) change through the product life cycle.

At the earliest stages when the technology is unproven and possibly non-standard the users identify themselves and are happy having a direct relationship with the developer or vendor. In the middle life of a product it is likely that they will reach market through a channel that either adds value to or can provide expertise around the product. In its mature stages the product is bought rather than sold and vendors maintain an arms length relationships with their customers, communicating via marketing communications and customer services. Products become treated as commodities and are bought in volume, often with price as the key decision making factor.

End User markets

Before getting into a discussion of the channels and routes to market its worth spending a while understanding the end user markets and their state of evolution, and examining their issues and drivers.

Large Enterprise

For the purposes of this discussion public sector organisations are included in this designation. Large enterprises function differently from other end user markets, engage with new technology at different points in the life cycle and have different concerns. They also tend to use specific channels for sourcing products, often against long term preferred suppliers contracts.

One of the key differentiators of large enterprises is that they usually employ professional IT and Telecoms staff. These people not only have a support role. Increasingly they set the technology agenda and may have a major role in shaping overall business strategy, depending on the criticality of technology to their ability to deliver their core business objectives. These objectives affect the sort of people employed by these organisations, from a passive support role at one end of the spectrum to a strategic, business led approach at the other. Perceptions of value, return on investment and the ability of technology to support core business activities will not only vary by sector but their attitude to new technologies will vary through that technology's product life cycle. Finally, interest in new technology is affected by personal interest and capabilities. Generalising about business motivation is a dangerous game, but large enterprises have the advantage of individual economic significance; many vendors invest in direct contact and try to understand them on a one-on-one basis.

Large enterprises can be frustrating to deal with for technology companies. As already discussed, generalising about interest and motivation is difficult and misleading. Direct approaches are not always successful; many large organisations are surrounded and protected by a cloud of consultants and preferred suppliers. Contact often has to be in two steps; into the channel followed by into the customer. Clearly some of these channels are most interested in protecting their own revenue streams and do not always put the customers interests first. A good example would be the deployment of Broadband technology into large companies. For the fixed line Telco trying to defend voice revenues, voice over Broadband is a disruptive technology. For a cabling company voice over wireless is a direct challenge to new installation revenues. For a support organisation new, unreliable technologies can seem more trouble than they are worth and something to keep the client away from.

One factor that has had a large impact on the deployment of wireless technologies in large enterprises is user power. Because wireless technology has become easy to acquire through retail, at low entry prices and simple to install in its default configuration, wireless networks have shown up in large enterprises in parasitic form. Department heads are buying them out of the "pencil" budget because they feel the in house support departments, whether IT or Telecoms, are unresponsive and, as a result, have unwittingly created a

backlash against the technology in some parts of the community. Wireless technologies can create a back door into corporate systems leaving them vulnerable to attack from outside (and sometimes from inside) and corporate IT and Telecoms departments have, in some cases, outlawed them for interconnection to corporate networks.

Another battle being settled in large enterprises is that between the IT and Telecoms departments. Historically these two disciplines were separated. With the onset of VoIP these two interests have clashed, with the IT and IP Networking camp most often winning out.

Despite all these issues many large enterprises have implemented VoIP as an in-house technology. There are a number of reasons for this:

- One infrastructure. Having a single infrastructure and single cabling system reduces complexity and cost and simplifies support.
- Proprietary technology. Many traditional telephone systems are still implemented with non-standard protocols, especially between switch and handset. This drives high cost at the handset level.
- Lower cost of switching - VoIP is perceived as cheaper
- Improved flexibility for remote working
- Improved application integration. This could apply for CRM, call centre operations or all sorts of collaboration and workflow activities

It is interesting to note that the leaders in this market (and of the VoIP market overall) are Avaya and Cisco. Avaya grew out of Lucent which in turn grew out of Bell Labs (AT&T), which was a leader in traditional technologies. Cisco has come to VoIP from the other angle with a heritage as the leader in IP networking. Although the product offerings have been built through acquisition they are now core to each company's operations.

Remote/mobile working/hot-desking

This term is designed to cover all types of working and applications that do not fit the traditional office, desk-based working pattern. Home working is covered as a separate section as it has somewhat different issues.

Many of these aspects are covered in some detail in other papers in this series, specifically the Virtual Enterprise thread. Rather than going over this ground again here, the focus here will be on those aspects that drive different routes to market and channel behaviour.

There are problems specific to this type of usage which will drive adoption:

- Transparency of location, where the physical location of the caller is not evident to other parties
- The ability to re-direct calls and have numbers that follow the user in a number of different scenarios
- Integration with mobile telephony
- User configuration and control
- The ability to integrate well with core, central site applications

Home working

Home working is discussed in detail in the Virtual Enterprise thread in a dedicated paper. There are number of drivers for home working:

- Retaining and attracting staff through flexible working practices
- Desire for a better work/life balance
- Reducing buildings costs
- Reducing pollution and lost time through commuting
- Less distractions
- Geographic spread

There is also a category of small business that is home based, either in start up mode, because it is a lifestyle business or if it fits in to the consultancy/contracting field. This group is collectively referred to as part of the SoHo (Small office/Home Office) discussed in more detail below

Home working can be an aspect of work in all sizes of business both in the private and public sector covering a wide set of applications too numerous to detail here.

Although some of the issues are in common with the previous category the issues that are specific to networking and telephony in this context are:

- A need for simplicity of installation and support as many workers in this situation are self supporting
- The need for telephony to be well integrated into the systems of a corporate body situated elsewhere
- Low cost as the system may well not be in use continuously. Part time use is very common

SME

The Small and Medium sized sector is confusing for many technology businesses. They share many of the requirements and concerns of large enterprises but apart from a need for products to be delivered in smaller form factors, have specific requirements that make them a challenge, especially in the earlier parts of a product cycle. In fact many technologies only reach the SME when the market is mature and distribution is pervasive.

The key difference between large enterprises and SMEs is that SMEs rarely have sophisticated IT departments. There are exceptions in, not surprisingly, IT intensive industries but where these resources exist they are often more support oriented rather than strategic. On a positive note owner managed businesses usually have short decision making chains and have strong word of mouth networks. When a technology takes off it can surprise vendors who find the demand levels difficult to predict.

Because the size of the sale tends to be smaller relative cost of sale is higher and few technology businesses can afford to engage with the SME market on

a one on one basis. Quality of distribution and marketing communications are important here, if a profitable outcome is to ensue.

Issues tend to break down into two broad classes:

1. Will this technology help me grow my business?
2. Will this technology save me money?

The trick here is to be able to execute on “mass customisation”. The principle is that the customer feels the product is suited to their requirements because of the way it is packaged, bundled or delivered. Getting pricing right is critical.

SMEs rarely buy products for technology sake although they are as susceptible to a fashion or momentum purchase as any consumer.

SoHo

The term SoHo is a catch all for business customers below about 5 users where, if they work from home, they often acquire products for a dual business/domestic use. In an office environment they are often the tenants of business centres or subletting space from larger companies. From a marketing perspective they can be difficult to reach and many telecommunications companies lump them in with consumers, although this can be a mistake as their use of technology is often extremely sophisticated. Many early adopters fall into this category, as has been shown by the adoption levels of wireless technology in this space.

Start-ups

So many businesses start off working from home it is almost the default state for the genesis of a new business. One of the characteristics of new businesses is their desire to reinvent the game and to offer a complete alternative to the way existing businesses are doing things. Many entrepreneurs are driven by a desire to compete with former employers and will use any means at their disposal to get ahead. A classic weapon in this armoury is new technology which can enable small businesses to compete on level terms with larger businesses and can often mask the potential failings of the smaller business, especially in a customer facing role.

Lifestyle businesses

A lifestyle business is characterised by limited growth and an owner who has defined aspirations, often to earn enough only to support a specific lifestyle. Although many lifestyle businesses are run by people who are opting out of the mainstream, technology can have an important role to play, especially where it saves time.

Consultants/contractors

With more and more people either being forced into, or making an active choice to adopt a portfolio working life, this sector has grown enormously in importance over the last decade. Businesses in this sector can be in a range from very specialist to completely generic, where the product is the skills and experience of the individual. Because they are often working for larger

companies, often for extensive periods, they have many of the requirements of mobile, remote and home workers. Their work is often delivered over an IT infrastructure to their clients and they may be virtual businesses whose most concrete manifestation is online. They also flex in terms of “employees”, especially in a project driven environment. Their usage can be quite dynamic as they may spend some time working on client premises, remotely, from home or in an office so flexibility and ease of management are key motivators.

Consumer

The consumer market for wireless networking is as likely to be driven by the desire to network home entertainment as to network telephony and WiFi is just starting to take off as a technology to do this, albeit initially in the hands of specialist installers. VoIP is being adopted by consumers as a way for getting free on net calls driven by innovative new service providers such as Skype and Vonage. Much of this usage is still PC and headset based although a handset market is slowly establishing itself. It is likely that other new entrants will emerge and make the technology more transparent to the user. In many cases, consumers will use existing handsets or generically available products rather than specialist handsets.

With the trend towards minutes bundles in the mobile sector it is likely that a successful defence against VoW, especially for non-public space usage, will be mounted by mobile operators.

Fixed newer operators such as BT have more to lose from mobile. The fact that mobile calls are still much more expensive than fixed calls has not prevented a continual slide of revenues towards mobile and away from fixed.

One interesting development is the BT Fusion product (codenamed Bluephone). Although initial products will use Bluetooth technology (hence Bluephone) later versions due out at the end of 2005 will use Wireless technology to deliver a complete VoW experience. The idea is that the phone will look for a “free” wireless network (i.e. one where the tariff is under the control of the operator or is on the customers own premises) to make calls across the fixed network using VoIP. If it cannot find one it will use the mobile network. One twist to what you might expect is that the call is tarified according to the network to which you connect at call set up. The fact that you roam in to “free” coverage will not result in a fixed tariff call. The roaming and tariffing issues will be the key to the development of this market and bundling of call minutes will be the most important battleground.

The questions that need to be answered are:

1. Is the technology easy and reliable enough to use? This is affected by a whole series of factors including handset design
2. Do the cost savings produce a visible difference to the user and do they care? Many users where the business is paying are unsurprisingly insensitive to call costs. The most cost conscious may be the wary of new technology

The Telecommunications Industry

The Telecommunications industry, whether seen from a network operator or equipment vendor or service provider perspective is in flux and wireless and VoIP are two key technologies which are driving this disruption. Most commentators agree that IP based technologies are the way forward but BT is the first major European carrier to nail its colours firmly to the IP mast with its 21st Century Network strategy. This clearly states that traffic will be migrated onto an IP only core network over the next ten years. This commitment trails a huge investment with the chosen vendors only just selected in June 2005. For vendors and other participants in the Telecommunications and IT industries the implications are wide spread and run deep. This level of disruption means that most accepted industry norms are up for review if not for radical change.

Fixed line operators

In many ways fixed line telecommunications operators, especially incumbents, are caught in a cleft stick. On one side their traditional revenue streams means they have most to lose. On the other, they are fighting with one tied behind their back by regulators who are keen to see competition, sometimes at any cost. Paradoxically this can create a huge impetus for change as many “new” IP centric services are not, and may never be, regulated. Cannibalising existing revenue streams in favour of innovative new products can be the best way of defending themselves against erosion of their core voice products from competitive carriers and migration to mobile. Converged services offer the opportunity for new bundles and new propositions and this is especially important for fixed line operators looking to compete with mobile where the cost of the individual call has been obscured by the bundle approach. Most mobile users concern themselves with the monthly package cost and whether they have enough minutes to cover their normal usage. The only other variable they tend to look at is the “on net/off net” variable as different packages include or exclude these, depending upon positioning. The first fixed line packages to ape some of this behaviour were BT’s BusinessPlan product for SMEs and the TalkTalk product from Carphone Warehouse for the consumer. The BusinessPlan product offers a maximum charge for calls up to an hour long and the TalkTalk proposition is that it is free to call other subscribers. What wrecks the BusinessPlan proposition is any kind of “whole bill” comparison.

Where VoIP fits into this market space is that it changes the rules on how billing is done. The general trend will be towards individual user subscriptions with a “bundle” of minutes and away from the traditional “calls and lines” model. This is a tough pill to swallow but clearly BT is prepared to swallow it. Whether other fixed line operators will follow may be a function of market maturity and their individual perception of how much pressure they are under. For many people their mobile is becoming their main phone and unless fixed line operators can compete by offering something that is differentiated the migration of traffic from fixed to mobile will be relentless.

As channels to market, fixed line operators may prove to an essential part of the mix. It depends entirely upon whether the equipment sale is a core part of

their proposition and whether they are network or CPE centric. For operators selling mostly to businesses as opposed to consumers the product mix usually includes some or a lot of IP capability. For those already selling data networking products and Internet Access you would think that the migration to including IP voice would be a given. In fact many traditional operators are slow to pick up on VoIP because the charging model creates a challenge to existing revenue flows, and in some cases individual Product Managers are incentivised to protect traditional calls and lines revenues from IP Voice and fixed to mobile migration. The migration to IP Voice becomes a strategic issue and may well be considered in the light of capital depreciation for the equipment and network infrastructure that supports traditional voice services. SDH and ATM switching equipment is expensive and although the days of depreciating network investments over 15-20 years are largely gone, the capital management issues continue. Many telecoms operators have had significant capital spending squeezes over the last 5 years and have not wanted to sponsor a major migration. BT, with its 21st Century network programme (as has already been mentioned elsewhere) is one of the first national carriers to state a strategy of migration to an IP only infrastructure.

As traditional voice revenues decline all network operators come under increasing pressure to migrate to IP voice and there is clearly a tipping point at which this trickle becomes a cascade. For many it's a question of their perception of when the point of maximum pain is reached. However these transitions are characterised by momentum and there is a danger of leaving this transition too late. Clearly under the rules of disruptive technologies IP Voice has the ability to change the norms and market structures for ever with the traditional network operators fulfilling a much reduced role going forward. However, their extensive customer engineering organisations create a unique opportunity for CPE vendors. There are few organisations in any country that have the scope and scale of the network operators to reach down, especially into the SME and consumer space. Over 50% of PBXs sold in the UK are sold by BT, creating market share dominance for the Nortel brand. If this level of market dominance were to continue the operator becomes a natural route to market for the VoIP and VoW vendor. It should be noted that this dominance by value is heavily slanted towards the larger customer and that the dominance is much less significant for the smaller customer.

Using the network operators as a route to market has its own challenges. Firstly they are large organisations to turn around with long term supplier agreements and plenty of vested interests. A vendor has to offer a pretty significant advantage to win over an operator or make a pretty bad mess of a product transition to lose one. Witness the implications of Marconi losing its place as a core supplier to BT's 21st Century network: there are questions as to whether the company can survive - even though they will get new equipment sales for years into the transition and maintenance revenues even further forward. Even with the "sale" made and a product accepted on to the portfolio the job has really only started. The market is littered with vendors who celebrated getting onto the portfolio but never actually sold anything. The main challenge comes in training and motivating the sales and engineering organisations to change and endorse the new products. The amount of work involved is not to be underestimated. At times it will seem that the vendor has

to find the prospects, drag the sales organisation through the sale and then spoon-feed the installation over and over again. Once the sale is made the job is still not finished as the new products need to be recognised on sales order processing, provisioning, installation, engineering, billing and Customer Service systems, some of which have an arcane and lengthy development cycle which can mean it is literally years before a product is bedded down into the overall sales process. This process is not only lengthy but it is costly, especially in man power terms. It is not unusual for major vendors to maintain a dedicated team of 10's if not 100's of staff just for a single operator and the vendor needs to question the sagacity of even starting the process. Where the operator has its own channel downstream there is yet another level of complexity and latency to endure.

Mobile operators

The role of the mobile operators as it relates to VoIP and VoW is extremely interesting. As they have transitioned (in some cases) to profitability their appetite for new technology, even 3G has sometimes waned.

3G is designed to improve IP performance but it seems that the launch of 3G services has been very narrow with a consumer focus on Video services and a business focus on dial up communications, albeit at Broadband speeds. The business case for the latter case seems stronger as there is clearly demand for this subject to pricing. The author used one of the first mobile data cards in the late 90's until he received the first bill of over £1500. Bundling minutes has removed the resistance that many users might experience to spending significant time online. Yet the application usage is fairly trivial with most of it focusing on email, as evidenced by the continuing popularity of the Blackberry product. This usage provides a direct challenge to the "hot spot" market and the winner will almost certainly be the method that offers the best user experience. At the moment the hot spot model is inflexible with patchy coverage. The key transition will be that to WiMAX where zonal rather than spot coverage can be provided giving an experience more analogous to the mobile one for the nomadic user. The standards for WiMAX mean that initial offerings will not be fully mobile, which is something of a weakness. Downstream the issue of capacity and reliability will play and the key battleground will be over the competing networks ability to scale that bandwidth and reliability. As is often the case, first past the post may be the winner, even if it is technologically inferior. First to market usually wins over best product.

Many mobile operators are aware of the fact that battle is barely enjoined and are hedging their bets with plays in both fields. The sheer cost of 3G deployment creates a natural desire to see a return on this investment, although some of that infrastructure can be shared to deploy VoW services, especially the masts and backhaul. Higher up in the network VoIP allows fairly straightforward integration of 3G and VoW services and the interconnect regime can also be shared. Although the battle is very rarely purely about technology when looking at product adoption, clearly operators are conscious of the fact that users vote with their wallets for the services that best suit them. The free on net call model, so compelling in the fixed network environment,

has less impact on the mobile world where bundling means that most users are not conscious or particularly bothered about the cost of an individual call.

The key technologies that will affect this transition are availability of dual mode handsets that support both mobile and VoW, the ability to roam between both network types and the ability to have a single bill that covers all usage types. Because of their identification as the operators who enable the whole mobile experience mobile operators are a natural to win whichever technology ends up dominating. Whether public space VoW makes a significant impact on the overall mobile market is yet to be seen and the markets are too immature to be able to predict the outcome.

As a route to market for the vendor and their equipment the ability of mobile operators to engage with fixed infrastructure is unproven. Most CPE handover is managed either postally or over the counter and this does not lend itself to complex IP management and configuration. The “out of the box” experience for VoIP and VoW solutions will need to be at the consumer level of simplicity for these technologies to find a route to market through mobile operators. The issue of dual mode handsets is somewhat more straightforward as these can be fulfilled in the same way as current mobile handsets the issue applies more to systems based products, especially where they need to be interconnected with an existing IP network. Where they are self contained the above constructs will apply

Service providers

Service providers is a catch-all term used to define any organisation that delivers products to its customers as services. In some cases these can be physical products, in others they are usage driven services. In the telecommunications world it covers voice service providers who are not network centric, Internet and Application Service providers. Of course a company could choose to be all of these things simultaneously and the Broadband market does make this a practicality as all services whether voice data or Internet based can be channelled down a single physical pipe.

The challenges break down into a number of parts. Firstly most Internet Service Providers (ISPs) are very access focused i.e. they focus on the connectivity between the customer and themselves. The Broadband market has been self- fulfilling in this regard as the issues around wholesale Broadband delivery and unbundling have dominated the consciousness of the market pushing issues around service development into the background. Many service providers do not have the skills in house to manage the deployment of voice services even if their access methods could support it. The dominant access technology to date has been ADSL which is fundamentally unsuited to voice transmission being firstly asymmetric and heavily contended. Voice traffic is by nature symmetric and the sheer quantity of voice traffic supportable on an ADSL link is extremely limited. It is the upstream bandwidth from the user up into the network that creates the bottleneck as it is, largely, limited to 256k. Running a voice service at, say, 40k per concurrent call, plus maintaining email and Internet connection is problematic. Voice services are better suited to SDSL services although the problem here is that these services, although symmetric are limited to just

over 2mb speeds and the radial distance from the exchange is limited. Contention is the term used to describe how service providers reduce their costs by having multiple users share the bandwidth on Broadband. Although the connection may be running at 500k the throughput is shared between up to 50 users and so performance suffers at busy times. This has little impact for non-time sensitive applications. For voice it can be disastrous and voice quality reduces. The ability for the service provider to manage quality of service over a complex connection with other suppliers involved can make delivery of voice services, especially over ADSL impractical.

Many business ISPs offer services over some form of leased lines and these are a much better prospect. The issue here becomes one of scale with delivery over leased line being extremely resource intensive. Leased line providers tend to supply their services a line at a time and mass deployment is not something they are set up to do. These services have also traditionally been expensive, often an order of magnitude more expensive than DSL, and therefore the exclusive domain of the medium to large user.

New access technologies such as Point to Point Wireless and Free Space Optics offer significant advantages in a local area but again are difficult, and expensive to scale on a national basis.

Finally the delivery of on site switching and handsets requires different engineering skills to pure IP services and this alone may deter providers from entering the market. Once they have taken that decision VoIP and VoW offer a number of clear advantages:

1. VoIP can run over a single infrastructure both onsite and in the backhaul, simplifying the installation and support processes for the providers
2. VoW offers the opportunity for an “out of the box” experience obviating the need to engage with merging voice on to an existing in-house (and possibly sub standard) network

There is an argument for saying that VoIP and Vow are the ONLY practical options for a service provider looking to enter the voice market, especially for the SME. For the larger enterprise the VoIP market is already mature and onsite/on network VoIP may prove to be a difficult market to penetrate; vendors have gone direct on these sales and bypassed the service providers, and to some extent the network operators.

Given these caveats, a market may well evolve for a new specialist provider focused on the SME, with a local remit and a well integrated communications offering. Such resellers have traditionally had good access to the fixed network market through Least Cost Routing (LCR) although their ability to fully integrate a mobile offering may in itself create a challenge. The ability to provide a “one stop shop” may be compelling for this market although the skill mix is somewhat unusual. A further twist on this model is the IP Centrex or hosted voice solution. Traditional Centrex has a mixed reputation although it is very common in the USA, usually being charged with inflexibility. IP Centrex

removes most of those issues enabling the service provider to deploy a sophisticated service while buying in the complex and expensive switching and billing systems. This places the IP traffic clearly in the Broadband backhaul and may mean that VoW becomes reduced to a role at the edge of the network.

Vendors

As we have already seen, vendors have a role to play at the end user level especially in larger enterprises. VoIP deployments have been dominated in the early years by trunking applications for telecommunications providers within their own networks and invisibly to the users, and deployments across Private or Virtual Private Network for larger organisations. Deployment in the public network for consumers and SMEs is a relatively recent development driven by the “toll bypass” characteristics of services such as Skype and Vonage.

The rapid take up of WiFi, however, has been driven by the SoHo and consumer self install market. We may well therefore see three broad classes of routes to market evolve with vendors choosing to sell through operators and service providers, through a reselling channel or through direct, retail and online channels. The decisions will largely be driven by their perception of their own market fit with the following combinations being quite likely:

- Vendor sells directly to the end user for Large Enterprise and Public Sector
- Vendor sells through fixed or mobile operators for all markets
- Vendor sells through retail and online for the consumer, SoHO and SME markets
- Vendor sells through service providers for consumer and/or business usage
- Vendor sells through a reselling channel for the SME market

Traditional switch vendors

As has been noted elsewhere one of the definitions of a disruptive technology is its impact upon the status quo of both vendors and channels. A new technology can create a fundamental change of the rules, allowing new types of channels to emerge and new market leaders to be created.

In the same way as new revenue streams threaten traditional fixed line network operators by cannibalising existing revenue streams in favour of new unproven business models, the same applies to switch vendors who need to unravel their own development and channel issues and make hard choices about how and when to manage these transitions, if at all.

Only 25 years ago the computer market was dominated by IBM, DEC and the BUNCH (Burroughs, Univac, NCR, Control Data and Honeywell) Within a couple of cycles of technology many of those companies have merged or disappeared and the survivors rely on making computers for only a fraction of their revenues.



The collapse of the Telecommunications market in the early noughties (caused by the drying up of the debt market to fund new network deployments) had a radical and, in some cases, catastrophic effect upon the fortunes of many vendors involved in the switch market. The implications of Sarbanes-Oxley are still rolling through the industry with some erstwhile giants struggling to adjust their balance sheets to a new model. Add a complete change of technology to the market and the volte-face could be complete. The early winners in the VoIP market, especially in the large enterprise sector, have been Avaya and Cisco. Whether they will be the leading vendors in other sectors remains to be seen although their structures and routes to market indicate their core focus will tend to be at the larger end of the scale. Cisco's broad brand recognition ensures it will be somewhat successful in all market sectors even passively. The new Far Eastern players have an opportunity in the consumer, SoHO and SME markets. Whether other North American or European contenders can keep up is an open question. The ability to merge technologies across IP, voice and wireless will be critical as will the ability to deliver easy to use products at the right price points for each sector. From that point marketing muscle is probably likely to take over with strong consumer brands driving across into the business market and leveraging their existing equity.

IP challengers

A whole new set of vendors have popped up, as they always do, when a new market starts to evolve. Many of these will disappear either because they lack funding, back themselves into a technological cul de sac, fail to find channels to market or a differentiable proposition. The likelihood of failure is much higher than either survival or success. Some big names are positioning themselves for the new VoW market, especially Intel and Nokia. Although Intel's interest may be to make the market to grow and pull through its chip products rather than achieve product dominance at the customer level their influence is massive. Microsoft has also made important commitments by embedding protocols within their own products and moving more firmly into the converged communications space.

Notwithstanding, this new space is complex with many factors at play. The possibility of a new major force emerging should not be entirely discounted. Often one or more major new players will emerge in such a disruptive transition and, if they can build momentum quickly may be able to achieve "escape velocity"

The Channel

Having examined the roles of vendors and operators/providers we now need to turn our attention to the reselling end of the channel, which has an important role to play in the final delivery of complex systems to customers. The focus here is very much on the business market, although several of these channels, especially retail and online, reach down into the SoHo and residential consumer markets.

Telecoms resellers

A large chunk of the SME market for telecoms in the UK has been dominated by the resellers. These companies, some national but many regional or local,



have combined network services from one or more network operators with PBXs and their own installation and support skills to deliver a package to the small business. Often referred to as the “dirty minutes” business reselling telecoms network capacity has been characterised by low loyalty to the operators (and even the customers) and dubious business ethics. Passing off second hand equipment as new, overcharging naïve customers and providing illegal licenses and call delivery are just some of the aspects of the worst end of the business. Yet as a route to market these channels, or what might replace them, are a critical element of the sector.

Often owner managed some of these businesses will clearly not make the transition to the new IP and VoW wireless models: the new structures, technologies and skills required may be beyond the ambition of many companies in this sector especially where they have become a lifestyle business. If they fail to make the transition and start to come under pressure the already commoditised market for combining and the consolidation of this sector will accelerate.

Subject to a significant investment in the transition, however, many of these companies could survive. Their sales and commercial nous puts them in a good position to engage in the blocking and tackling required to survive such a transition

Network/IT integrators and dealers

Historically few IP centric network integrators or IT companies have been involved in the deployment of traditional voice services. The technologies, even down to the basics of cabling, have existed in isolation and companies who have relied on outside help for the delivery of these services have mostly had separate contracts for voice and IT. As these technologies converge it might be assumed that the delivery channels would merge either by cross-skilling or acquisition. In fact, to date, very little of that has happened and the number of companies that claim to deliver both telecoms and IP/IT services is limited. That is not to say that this will not happen. As the technology becomes more pervasive and the proposition to provide both sides of the house becomes clearer it is very likely that new combined channel will emerge, either from scratch or through mergers

Retail

Classically, retail channels only get interested in a new technology when demand makes it walk off the shelves. Its level of engagement with installing, configuring or supporting new technologies is patchy, at least through the national multiples. There will likely always be local retailers that offer a blend of supply and support. This has changed somewhat over the years and the time lag over which new technology hits the shelves has been shortening progressively. Wireless LANs have been a good example of this and it may well be that the retail channel will take a more pro-active view of the new channels especially as its applicability for consumer and SoHO markets becomes established.

Direct sale/online

Direct and online sales tend to fit, a bit like retail, in to different phases of market development. Products often start as a direct sale before moving through channels to becoming a retail product. Online has changed that and systems integrators and resellers operating in the SME market now often buy products online rather than going to more traditional distributors and wholesalers. In that way who is actually buying online can be opaque. What is clear though is that such an arms length relationship between vendor and user is normally only supported where the buyer knows pretty much exactly what they want and/or the product is easy to acquire and install and, to some extent, commoditised. Both online and retail channels do have a major influence on customer preference by the way in which they present their offerings and vendors skilled in these channels with good relationships will often prevail, even with an inferior product, assuming that the price proposition stacks up

Conclusion

As the market for VoIP and VoW matures different routes to market and channels come in to play. Being disruptive technologies the old paradigms may erode, and new routes and channels evolve. Fortune does favour the brave and first to market, especially an entrant with momentum and deep pockets. In established channels, existing relationships will have an impact. The history of technology evolution is littered with superior products and technologies that simply did not make it.