broadbandvantage

Samsung Electronics
The Virtual Enterprise
"Work is what you do, not where you do it"

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About this document

This paper forms an introduction to a set of white papers covering various aspects of changing work practices and their impact on the uptake of VoIP and Voice over Wireless. It also forms one thread of papers (called the Virtual Enterprise Thread) within the overall set of VoIP and Voice over Wireless papers to be published between June and October 2005.

Virtual Enterprise Thread

The impact of these technologies on our working lives and the flexibility they bring support a number of trends that have been evolving over the last few years. This paper discusses these trends at a high level and is to be followed by a series of more specific papers examining the following issues:

- Teleworking/virtual call centres

The Virtual Enterprise will encompass a whole range of different and new working methods. Although some of these issues will be opened up in this paper the pressures that create these changes are complex and warrant a separate paper in their own right

- Relationship capital and social networking

If there is a move away from the traditional office how do some of the soft benefits of working in the same place get delivered? Successful enterprises are characterised by their effective communications and by their relationships, internally and externally. How do these get built and developed?

- Collaboration and presence management

This thread examines the specific tools that will emerge to support these changing working practices

Who should read this document?

This document is designed to aid senior communications decision-makers seeking to understand the key issues to be addressed when implementing new telephony applications across their business.

SAMSUNG

Changing Work Patterns and the "Virtual Enterprise"

Samsung has a vision of how business communications need to change to match the changing requirements of business which it has dubbed "The Virtual Enterprise" This vision reflects many of the changes identified in this document.

The core of this vision is that businesses need communications capabilities that reflect their increasing operational flexibility. Put simply, the traditional office-centric view of how businesses work, and how communications services are delivered, no longer fits the increasing drive towards mobility and the need to drive down fixed costs.

This is especially true in the context of globalisation. Improved communications increase visibility of alternatives and this creates both a threat and an opportunity. The opportunity is easier access to new markets but the threat is of access to an organisations own home markets by new competitors with lower cost bases. Speed to market becomes a key metric and new methods of delivering results quicker come to the fore. In this high speed, flexible way of working fixed organisation structures are not always an advantage and organisations start to look at new ways of constructing their value chains to both take advantage of new opportunities and defend against new threats.

These forces are what drive the move towards increased use of contractors and sub contractors who can deliver a specific skill set "just in time" but also drive the sorts of strategic (and tactical) partnerships that were unthinkable only 20 years ago. A transition has occurred where these partnerships are now seen as a sign of strength where previously they were a sign of weakness. Good examples can be found in the most traditional of industries such as the automotive industry where competitors share common components on a large scale. These common platforms (and this includes engines and chassis) significantly reduce development cost and time to market, resulting in differentiation in the end product in terms of packaging and cosmetics rather than through creating a complete new car.

Another concrete example in this trend is outsourcing, where companies seek to define their core competencies and seek out others whose core competencies are to deliver the rest. The original driver for this was cost saving but many companies are now enjoying the benefits of a slimmer management infrastructure which enables faster communication and decision making. In extreme cases this means that the organisation seeks to do only one thing and "virtualises" the rest.

Traditional models for how offices worked changed for ever when the "job for life" contract was broken in the 80's and 90's. The speed of change in business put a premium on knowledge and the growth of IT as a means to reduce cost became embedded in the standard business operating system. More recently the traditional "command and control" method of management has been increasingly eschewed in favour of structures and mechanisms that

put the emphasis on control by output rather than control by input. In other words, it's what you produce (rather than what you do) that matters. This in turn favours knowledge management and supports personal empowerment.

As we will see later in this paper there are also societal pressures that are changing our view of the Enterprise. These break down into to two classes; personal choice and political influence. When added to the economic drivers these provide a pretty compelling picture of how our working lives are likely to change over the next 5-10 years. We will also examine a number of different work models which are likely to strongly influence this change: flexible and tele-working and distributed call centres. These will then be covered in more detail in a separate paper.

As a result of all these influences what people expect from work, and by correlation from an office, has changed. With increasing numbers of people employed on short or fixed term contracts, and the move towards home working, people's relationship with their workplace and the systems in it has changed.

- Managers and employees want increasing flexibility in how they do their work.
- Traffic congestion is on the increase and many people are increasingly seeking homeworking and flexible working patterns as a method for improving productivity and quality of life.
- Government wants to meet environmental goals and has set goals for its own "virtual enterprise" initiatives.
- People who work from home tend to be much more productive and experience lower levels of stress
- The role of the secretary has largely disappeared to be replaced by a general admin whose main role is to keep track of people, act as a communications hub and control the distribution of resources in a group or team.

All this means that people expect to get access to resources on demand and when the office is full, often for a cycle of meetings, resources are in short supply. With the increased incidence of meetings which seek to keep people synchronised in this fast moving world, use of desk space and the systems traditionally associated with it is changing.

In the traditional office model everyone had their own desk, more recently with a desktop PC and a PBX phone. These were hardwired in and any flexibility to even move a desk was severely impaired, not just by the cabling, but by the availability of sockets into which to plug everything.

Thus the birth of hot-desking. With hot-desking everything is either provided on a permanent basis and the workers move around (meaning most of the equipment is unused most of the time) or individuals are provided with their own portable computer and mobile phone. A hot desk becomes just a place to charge mobile devices and, possibly, to connect PCs to the company network (assuming it can be made to work in an acceptable timeframe). Besides, a lot of the time spent in the office is in meetings, so are these facilities really

necessary? Access to networks and power become an issue of right rather than need.

When what people do when they are not in the office is added to this, the realisation dawns that the dominant phone model, for many people, has become the mobile. The handset is associated with the user, rather than an arbitrary extension or port number. Most of the calls made do not involve dialling a number but selecting a user from a contact list, and this style of usage is increasing. For many users the mobile is the device of choice even when they are in the office and they have changed the use of telephone handsets for ever.

The drivers for changing working practices

Societal drivers

These changing working practices and the change in how phones are used are also linked to other societal changes.

Quality of life

One of the drivers behind changing working practices is a desire to work to live rather than live to work. Because the guarantees that were implied in people's relationship with work have been broken they increasingly seek to achieve a better balance between work and life. The pace of change and the speed at which business is conducted have accelerated over the last 20 years to such a degree that people are now routinely experiencing some of the demerits of all this, especially longer working hours, stress and health problems. Many people are now realising they need to exercise some control over the impact work has on their lives and are using flexible working practices to do this.

Commuting and the environment

The relationship between commuting and pollution is clear and government is encouraging the trend to break up accepted working patterns in favour of spreading the traffic load to reduce pollution.

The pension gap and downshifting

Many people realise that the pension system is unlikely to provide them with the support and the lifestyle they want and so people are going to carry on working for longer, although increasingly on a flexible basis in terms of time and location. Business systems need to track and reflect this to enable these types of working to be supported. Historically office phone systems, with their static paper-based directories, made this kind of flexibility difficult to achieve. The newer applications positively facilitate this. Correspondingly many people wish to reduce the stress they experience by downshifting their work, often to a more rural and homeworking basis.

Financial drivers

IP telephony and Wireless LANs enable greater flexibility without the fixed costs of traditional wired LANs and PBX's. People's relationship with their handsets change and in many cases a PC client is perfectly suited to how they want to work, removing this cost element entirely. With the ability to redirect

traffic to wherever someone appears on the network, you no longer need to schedule desks or physical locations. Many large companies such as BT have been able to reduce their investment in property and fixed IT infrastructure by adopting these flexible working practices. There was a time when flexibility was expensive. Now it can bring even lower cost. Over time smaller businesses, who often have a more direct relationship with costs, (especially where they are owner managed) will seek this flexibility and functionality from their telecommunications and IT infrastructure

Cost drivers for the small business

Small businesses are often driven by sensitivity to cost or by a desire to grow their businesses, or some mixture of the two. VoIP is likely to become quickly adopted as it brings services such as international teleconferencing into the reach of the smaller business and goes one more step to breaking down the geographical boundaries that often hold back the smaller business. Globalisation will become an issue not just for larger businesses. The ability to get all (or at least a portion) of “on net” calls free of charge is compelling. It is interesting to note that what “on net” means will also change as operators seek to make their boundaries more visible and thereby encourage their clients to bring more of their regular contacts “inside the rope”. Word of mouth (or Friend of a Friend as it is sometimes called) has always been the most powerful marketing tool. “On net” encourages the customer to bring people onto the network to reduce their own costs and VoIP is a powerful tool in delivering this, especially for the competitive carriers. The higher percentage of regular contacts that are “on net” the smaller the billed cost will be. In fact VoIP changes the overall billing model from “calls and lines” to a combination of personal subscriptions, some free calls and some charged calls. This is a huge change for the telecommunications industry and organisations should expect to see the sort of bundling and packaging that is currently endemic in the mobile industry coming into the “fixed” network as operators seek to press a competitive advantage through price based differentiation. One of the casualties of such a change is customer loyalty with people changing to take advantage of new packages and tariffs.

Competition in the telecoms market

One of the dynamic factors driving the development of the market for VoIP in general is the support of the carriers. For BT, VoIP is both a defence and a “win back” opportunity; they see the need to ensure that their new IP infrastructure (dubbed the 21st Century Network) stretches right to the edge in order to fend off the competition of alternative carriers. With such a high percentage of revenues (and an even higher percentage of profit and cash generation) accounted for by voice traffic, BT cannot afford to stand still. These alternative carriers, in turn, see VoIP as a method for changing the voice business model to the detriment of the incumbents (BT) market share. For them the business is to be won rather than defended and VoIP offers them the opportunity to keep traffic away from the BT network and under their cost control. Cable and Wireless, Kingston and Colt have all launched Voice over IP strategies with C&W refocusing its efforts on the SME marketplace.

Virtual Enterprise Structures

Call centres

IP telephony has been gaining ground in Call Centres for some time. The trend towards offshoring, virtual call centres (where calls are routed between multiple locations) and home working has accelerated this trend. Much traffic going offshore is converted to IP to enable more efficient use of international trunk capacity and the ability to integrate telephony into other applications makes it a good fit for this type of usage. Datamonitor believes that IP telephony will become mainstream in the Call Centre market over the next four to five years although much of this growth will come in ”Greenfield” deployments. However, even allowing for legacy upgrades, they predict that IP shipments will reach parity with TDM by 2008. A key development in this deployment is the migration to virtual and smaller call centres, especially where there is a premium on individual service and higher levels of sophistication. This is especially true in the knowledge economy sector which itself accounts for 8.4 m workers or 30% of the total working population. The overall market for call centres is estimated by the DTI to reach 1m agents in the UK by 2007,

The traditional way of delivering call centres is to build a structure dedicated to this function and specifically designed for this type of working (heavy telecoms and IT infrastructure and open “cube” layout floor plans). Staff are recruited on a permanent basis, often from the unskilled unemployed, and trained in house. This makes the model attractive for areas of significant unemployment, especially where traditional industries have failed and where grants are available for new ventures. As workers become bored with the repetitive and stressful nature of the work and acquire enough skills to be attractive to another call centre operator they move jobs creating a significant staff turnover problem. As we reach effective full employment staff become harder and harder to recruit further stressing the model and driving more outsourcing of call centre operations. Quite a high percentage of this work is now outsourced to specialist operators who can use best practice to bring down costs. The problem is that demand is uneven during the working day and due to the permanent employment pattern of many centres resources are under-utilised driving a high implied cost. This in turn causes many operators, both in house and outsourced, to look at sending work overseas to where the employment costs are lower. The problem with this approach is that it addresses only one part of the equation, cost of delivery staff. In fact, facility and technology costs remain much the same and management overheads may actually raise.

The most effective way of trunking telephony traffic out to an offshore call centre is using Voice over IP. With this leg of the IP infrastructure already in place, resistance to Voice over IP at the edge is reduced.

In the US, where the backlash against offshoring is strongest, operators are increasingly looking at Voice over IP as a way of routing traffic intelligently to self-employed home workers. There are a number of advantages to this model:

- Staff are more highly motivated as they control what and who they work for
- Staff are only paid when they work helping peak hour coverage and preventing expensive low activity periods
- No need for expensive specialist buildings
- Network based recruitment and management keeps overheads low
- Work can be directed into rural areas which is attractive to government
- Reduced commuting lowers stress and emission based pollution
- Work is available for people who are house bound due to disability, age or caring responsibilities

Whilst training costs can be higher with this model early indications are that it can deliver higher quality than traditional models at a cost equivalent to or lower than offshoring. It also is attractive from a societal and governmental perspective and reduces balance of payment pressure on the economy.

The applications to support the home or remote worker are examined in more detail in the following section and this issue will be revisited in some detail in the paper “Teleworking and Virtual Call Centres”

Flexible working

As the pace of work increases (and with it stress), employees are asserting their desire for a better work/life balance through improved flexibility. This has a number of manifestations, all of which are simplified or enabled through a combination of VoIP and Wireless technology

- Mobility. Work is becoming less and less office based. The impact of globalisation and reduced timescales drives a greater need for speed of response. This results in an “always on, always available” mindset where there are very few circumstances in which we are not available. Mobile phones have either poorly or expensively addressed the issues of data connectivity. Wireless technology addresses the cost and quality of the data connection and as a result provides an alternative conduit for voice communications
- Home working. As most Western societies reach full employment, many people who would not normally be part of the workforce, for reasons of age, disability, childcare etc. are being lured back into work by the opportunity to work from home. By contrast the “always on, always available” culture drives a need to work from home at evenings and weekends even for the full time employed

Relationship Capital and Social Networks

Although these topics will be covered in more detail in a later paper it is worth considering them briefly here. If work becomes less office-centric, how certain social benefits that office work delivers are to be replaced needs to be considered.

How people work together in these new flexible structures is dependent in large part upon how well they communicate and collaborate. If some of the

face to face communication opportunities that occur casually in the working day are no longer available, thought needs to be given to other ways that these can be delivered. The alternative may be more and more formal meetings and a likely drop in productivity. Formal communications can be managed remotely through email and telephone calls but these do not always deliver the flexibility that the casual encounter provides

The growth of online social networks to replace these face to face interactions has been one of the most remarkable phenomena of the last few years. Broadband has in part enabled this with people dipping in and out of these networks almost as “breaks” in the working day. Although this has been most marked in the micro and self employed sector these tools are perfectly valid for anyone who works on their own

Virtual Enterprise Applications

Presence

Voice systems have traditionally shown the current call state of an extension on the system. What was not provided was information about whether the person was actually at their desk even when the phone was idle. Over recent years IM applications have emerged which provide presence information based on keyboard strokes or mouse movement. This information can be linked to the user’s calendar and geographic location to deliver more meaningful information: In a meeting, or don’t call he’s in Japan where it is currently 3am. Combining this functionality with the telephone is a natural next step and the SIMPLE protocol is currently being worked through the IETF to support both instant messaging and presence.

Presence further develops the idea, borrowed from IM, that communication is enabled with people only when they are visible. This comes with its own set of pro’s and con’s. Firstly users have to be online a good percentage of the time for it to be valuable (or in the case of our children, at predictable times) but the key advantage is time isn’t wasted communicating speculatively with the “Voice mail dance”. Every call is productive.

Identity

As organisational boundaries change, become transparent or disappear, the ability to assess whether another party is someone one wishes to initiate or even permit communication with becomes even more important. There will always be organisations and individuals who want to restrict their visibility and these tools will enable this as much as they will improve visibility. It is key that the individual has control over these parameters for these tools to become accepted. With identity comes security to protect organisations and individuals from illicit or damaging behaviour.

These two applications together are key enablers for Voice over Wireless. Flexibility and changing working practices drives a need for the sort of flexibility and dynamics that wireless networks deliver. People’s changing use of telephones drives the need not just for VoIP but also for networking and collaboration applications that drive greater value.

Collaboration and networking

Once presence and identity management exist in the network it becomes possible to foster interpersonal networking and collaboration. These applications have a hierarchy with communications based collaboration following on from presence and identity with workflow (or knowledge based) collaboration (shared documents and processes) at a task or project level.

Communications based collaboration includes the ability to make and receive calls whether audio or video, the ability to set up conferences of various types, to manage email, texting, and IM. These lead to weblogs, chat rooms and various other types of discussion forum, and covers the full range of electronic communications both asynchronous (non real time) and synchronous.

Knowledge based collaboration concerns itself with the ability to search, and covers directory and storage capabilities

Work flow management covers a number of disciplines:

- Meeting management and scheduling
- Document sharing
- Resource allocation
- Task and Project management
- Process management
- Reporting and measurement

The ability to collaborate at these levels creates a business accelerator effect especially for small businesses, as they have traditionally been the domain expertise of the larger organisation.

Collaboration leads to networking, particularly if users can search by certain parameters that match their requirements. In fact this kind of online networking is becoming an application in its own right with the explosion of usage on networks such as Ecademy, Ryze and LinkedIn. These are business oriented sites, even though the process can seem a bit like a lonely hearts club. In fact business has always been done via networking – originally via church, the Masons or other business clubs such as Round Table – it's just that now it is done online. As a way for finding customers, suppliers or partners its use is growing especially amongst small businesses looking to expand the scope of their coverage. So identity becomes a critical way of marketing both at an individual and at an organisational level.

Conferencing

Conferencing, whether audio or video, and especially International has been another application classically limited to larger organisations. As organisational boundaries break down and collaboration tools really deliver on the promise of the virtual organisation it is very likely that these tools will be in common use in the smaller business. The ability to manage down the cost of long distance calls and set up dynamic conferencing on the basis of availability will deliver benefits to the first time and the experienced user as traditional conferencing can be awkward and time consuming to coordinate.

This in turn migrates into a “chat” methodology where calls are enabled rather than made in the formal sense.

Follow me (Unified Messaging)

As the number of phone numbers users “own” has increased the ability to find the right person without making multiple calls has become a challenge. With the development of Intelligent Networking (IN), driven in large part by the growth of call centres, calls can be routed across a telephone network based on a number of commands or policies. Most people’s experience of this starts with the Intelligent Voice Response (IVR) systems commonly in use in Call Centres. Most people have become used to having calls queued and being given choices to make as to how they are handled. The inverse of this is having a system that finds the user. Early versions of this required individual schedules and locations to be set up. IP technology and presence means that calls can be routed dynamically to wherever the user shows up on the network, but can also be overridden if they do not wish to receive the call. This level of control creates a virtuous loop with presence management. The user can now look to see, not only if the other party is available but whether it is a good time to call.

Home/remote working

Apart from being a completely different way of working, remote or home working is an increasingly commonly used application of broadband technologies even for those that are office based.

In this context it creates a whole new set of challenges. One example is security. The assumptions of how we access data and resources in the office change as we go outside the safe, firewalled context of the office. Communication is often over the public Internet rather than over private or “virtually” private networks and this has a direct impact on standard security procedures. In fact security technology has kept reasonable pace with these changes of usage and the tools exist to enable this type of working with manageable risk.

Conclusions

The pace of change in both internal and external organisational pressures drives inexorably towards a new type of organisational structure where less importance is attached to the distinctions between ‘who’ and ‘what’ are ‘inside’ or ‘outside’. Successful organisations understand that working methods need to reflect these changes and seek the technology to support and enable these new methods.

The drivers for these changes are both economic and societal. When people want things to happen they usually do, and often despite the best efforts of others wishing to control the outcome.

With these new methods of working, new applications are evolving using both existing and emergent technologies. The full scope of these applications is not currently completely understood and will itself change over time.

Communications technology will be an essential part of this trend with the accent on flexibility and control at the individual user level.

Voice over IP and over Wireless have arrived just in time to kick this evolution onto a new level enabling independence from traditional “office oriented” structures and reflecting the needs and desires of this new breed of user.

About the Author

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Bob combines 20 years experience in the IT and Telecoms industry with a keen interest in how technology changes the way we do things, especially at a personal and SME level. In demand as a public speaker and conference chairman, he has written a number of papers on the impact of technology on working practices. His company, Broadband Vantage provides consultancy in the Broadband marketplace and on marketing to SMEs. He is currently employed as CEO of Wired Workplace.