

A Guide to ICT

The Way Life Used to Be:

50 years ago, in the Dad's Army era, life was so simple. The bank manager walked to work each morning dressed in the uniform of pin-stripe, broly and bowler hat. The chief clerk would not dream of asking to use the only telephone instrument that had pride of place on the manager's desk, but would instead walk down the road to talk to Jones the Butcher. Everyone knew everybody, life was an interactive sport, and things were simple.

For many people, things have not changed much since those times. Oh yes, we now have TV not just radio, and most people now use answering machines and Fax machines as well as the telephone. But in reality many people still want the face-to-face encounter. Do you remember the BT advertisement? Maureen Lipman as Beatty enquiring over the phone and being told that they had all sizes in all colours.... And that was only a few years ago, to encourage people to use the phone rather than drive into town to ask face-to-face.

Things are changing.....

ICT is Coming:

Look at any newspaper and the modern buzz is about ADSL "Broadband"! The ability to pass information and be able to talk at the same time. Most people's reaction is predictable, "Why should I need this – I do not use that much information?" Just like when the phone was invented – "Why would I want that? I do not know anybody that lives that far away!" But today, just try to imagine being without a phone – let alone a mobile phone..... (you remember – that yuppie toy of the 1980s that will never catch on....)

Since 1990 the World Wide Web has been establishing our ability to reach out for information. In practice now most school children look upon the WEB as the first repository of information, and only when fails do they resort to the old fashioned books. We have become accustomed to major companies (IBM, Microsoft, HP etc) having WEB pages from which we can access and download information, printer drivers etc. BT even has www.bt.com - a web page on which you can engage in every interaction with the company that you used to (and can still do) on the phone and face-to-face over the counter. The use of this site is growing daily, as more and more people realise just how convenient this type of access really is.

But these big companies have IT Departments and an army of IT specialists creating and maintaining their WEB pages. TRUE! But this does not mean that the Information Age is not something in which the smaller enterprise can (and should) get involved. Products like the Digital Office allow turn-key access to the new systems and a seamless migration as your business progresses and enhances.

Starting is not difficult – the difficulty is realising the “value add” that will be possible, and the disappointment of your customers when they suddenly realise that you only have just a telephone.

The Customer of the Future:

Have you had a chance to play games on the new X-Box yet? MAGIC! Especially for those of us old enough to remember the first Sinclair computers linked to the TV and the thrill of playing Pong.

Now in reality, playing games on the X-Box is the equivalent of taking an F1 Ferrari racing car shopping! All that power just does not make sense. What you must realise that the games are just the original teasers – the instant value add. The real intention of these “games consoles” is to vie in the next Information War, and that will be a war for the most precious square foot of real-estate in the world – a place on the shelf in the under stairs cupboard (or what I laughingly call, my wine cellar!)

Soon homes will be networked. Because of who I am, where I work and my interests, my home is already networked. I have a network that distributes TV and radio signals, a network for security, a telephone network, a wireless data network and Bluetooth and Infra-red channels to connect my hand-held devices. Complex is not the word for such systems – but that is the bit that interests me – I can even dial from a phone in one room to the phone in another. I find it a game – most people think of it as a nightmare, and hopefully a nightmare that will go away if you do not look at it.

The advent of the “simple” (well for the user at least) hub, that will take all these different facilities and just make them available at the places that they are needed, will make most homes Information ready. In order to access information you will not have to get the computer out, boot it, plug the wire into the phone socket, open browsers, type in the URL (the what?) and wait..... In the future home you are more likely to turn to the nearest display screen (yes 10 minutes ago it was showing a film and looking very like the old TVs) and just ask for the information. Soon machines will speak in a natural human-like voice and understand you without your having to train the machine to your voice or put big spaces between the words so the machine can understand. Instant, simple, effortless access to Information will make the demand for Information soar....

To aid in this Information Revolution you will have Artificial Intelligent Agents to help you. These are small packages of software that know your likes and dislikes – which they will “learn” by example not need programming. They will go out across the new networks and gather information so that it is instantly available when you want it. The one fact that is being overlooked in this new Information Era is the “Always On” connection. It is not really the amount of information that can be passed along these networks – it is the fact that the connection is on all the time and that the human does not have to be practically involved in the search for information – there is no need any more to have to dial numbers and know where to connect.

Your Interface to your Customer:

So your customer is switched on, plugged in, totally networked and ready to Boogie! And your only means of connection is a single line entry in Yellow Pages..... Just how much effort do you really think I am going to expend trying to find YOU when your competitor down the road is instantly available? And always remember the “road” in modern terms could mean the other side of the world! As soon as I do not have to travel to you – distance becomes irrelevant. If your services contain no atoms (and hence weigh nothing) instant gratification over the network – holidays, insurance, entertainment.....

If your business still delivers products, then there is a need for conveyance of these products. In the near future new Delivery, Logistics and Transportation business systems will grow. Goods used to be delivered to the supermarket and you carried them home, now they are delivered to your home (tesco.com etc.) and soon the ordering process could also be totally effortless and automatically as well.... Just look how the delivery businesses are currently vying for position in the market, not just across the town but across the world.

The difficulties that most smaller businesses face are Time and Knowledge. Most people have experienced the conversation (in the pub on a Friday evening for example) that computers can be plugged into telephone networks and all sorts of magical things can happen. EDI for instance – these multi-letter acronyms are just frightening..... And of course who has time during the working week to “play” with these new things – and hope that they will work?

Turn-key systems will get you connected cheaply, conveniently and quickly. But that is only half of the problem solved. Next you have to make yourself visible in this new ethereal world. The simple rule is that if I can not see you, how do I know you exist? You must be available 24 hours a day, 7 days a week, 365 days a year. As you do not have to be personally and actively involved in the process this is not usually a problem, but problems can come from deep left field. Most people have heard of the butcher who created a WEB page on a Sunday afternoon to sell his sausages – and by Friday his business had almost collapsed under the weight of orders from around the world. He managed to outsource the production, logistics delivery etc and still stands behind his counter handing ½ a pound of sausages to Mrs Brown...

But connection to your customers is only half of the story. Once connected you are connected to everyone. I am currently working with a number of Chambers of Commerce and Business Links looking at the possibility of sharing facilities. Big companies have outsourced their domestics (cleaning, catering etc) for many years. Network connection will allow smaller companies to coalesce. For example, do you need to run your own pay-roll, tax, or accounting? Why not allow the local accountant to undertake these, not once a month or year “auditing the books” but real-time every day activity. It would be like having a full time accountant sitting in the corner ready and willing to do any task just as soon as it is required, but only used when needed and only paid for when used. HR, security, Health and Safety,

quality, Web page administration – in fact all those irksome activities that are essential but tedious could be shared, or concentrated in a central location with a sharing of the over-head.

And the Future?

In the near future there will be Web Enabled Services. These are activities not offers of information. For example, imagine a credit card check involving card, PIN number, fingerprint and visual facial recognition. Instead of having to install (and maintain) the functionality in your till – the facility is down-load over the network in real time during the process and exercised for that transaction. As the facility is upgraded the new service is just downloaded invisibly – no more checking if an upgrade is needed and then having to install..... it is just there. Of course before you use such a system you will have to trust the “third party” supplier.. Microsoft, BT, your Chamber of Commerce?

But the real buzz-word for the Future is AORTA (Always On Real Time Access). The first experience of this will be for most people connection by ADSL Broadband – but that is only the start. Most people have little experience of machines accessing information without themselves being involved in the process. It has been essential in the past for people to know what is wanted, know where the information is (or might be) and also know the telephone number that will connect them to the information. In the New World connection via dedicated and continuously connected pieces of wire will become old-fashioned. In the IP World information will be packaged and passed in small packets, and information (that the human will still consider to be all part of one continuous idea) will be transported in a number of these packets, and the packets will most likely be transported over different routes. So the future is machines always connected together and talking to each other – with humans becoming an incidental link at the end of the process.

And the Future is Mobile. Do you remember in those days of old, when mobile phones were “yuppie toys”? Now not only has everyone got a mobile, but we can not live without them!

In the next generation of mobiles (3G) the phones will be AORTA – providing that you have remembered to switch it on – and it will be accessing information for you all the time, in order to have it instantly available as soon as you demand it. Information will just always be there – just like water from a tap, or electricity from the wall socket.

Most of us these days carry a bank credit card that has the little gold contacts on the surface and a chip inside – a Smart Card. In the very near future we will all be carrying these Smart Cards – and you must remember that the chip inside is so smart that it can carry anything – your passport, ID card, Driving licence, all your banking details, all your medical details etc. In fact it is possible to put on this card everything that you have ever seen, everything that you have even heard, everything that you have ever thought! And still leave space..... Just imagine, walking into a doctor’s surgery and saying “Oh doctor, I feel very ill; this is me” and you just hand over your Smart Card – This is a really good idea if you are on holiday and have never seen this doctor before!

All this is possible today. The only difficulty I see with this technology is “What happens when you loose the card?” Well there is a very simple solution: we are going to take the chip out of the card and surgically insert it in YOU! Now you can effortlessly carry all your personal information at all times. My colleagues in the biometrics and health industries are seriously looking to take the results of the Human Genome Project and writing your personal genetic make-up on such a chip. You arrive, totally comatosed, at the emergency hospital and with a simple wave of a wand the doctor knows everything about your condition and medical history.

And these types of transactions will happen in the High Street as well. I stand by your “till” and it sends a message to my hand held device (it is much more than a phone now) and I see the details of our transaction. A simple press of the button, or voice command, and value is transferred from my account to yours – not my wallet to the till drawer! All security checks have been done; my internal chip confirms that I am who I say I am, the banks has been contacted to ensure that the funds are available, the credit checking agencies have agreed and the transaction is completed. And, if you should steal my hand held device, then the distance between it and my internal chip will render the device totally inoperable – that will reduce mobile phone thefts!

Another new idea that will affect the way we communicate in the future is printing circuits. Not the boards that we have become accustomed to seeing in electronic devices, but circuits printed on paper using processes very like the ink-jet printer of today. If the components that can be printed will emit light (just like an LED) then it would instantly be possible to make large advertising hoardings become dynamic moving pictures. The advert for the burger outlet could have a moving yellow arrow and even dynamic information as to the current waiting times at the counter! By printing a small radio receiver/transmitter and aerial in one corner of the hoarding, then you could point your mobile phone at the picture and ask “where?” And you would bet information not just about the nearest, but about all the outlets near your current route, and even maps of how to locate them.

If your interest is not burgers but, for instance, chocolate bars, then the reply from the hoarding might well be that there is a vending machine in the bus station 100 metres down the road, or a newsagents shop across the road, or even a supermarket ¼ of a mile along the way you were travelling (your mobile will have GPS and know which way you are moving!) However, if the vending machine is empty (and we are already “wiring” these machines for stock loading and vending rates) or the newsagents is closed then you will not receive the information about them, only that of the supermarket.

The technology is also going into the supermarket. Just imagine the circuit being printed inside the paper label on a tin of baked beans. As the shelf stacker loads the shelf, the shelf counts the tins. As you remove a tin, the shelf is aware that one has been taken and starts the restocking schedule. With an intelligent shelf and a little infra-red optical or wireless networking, we could have dynamic shelf edge pricing. The rates of vending (and stock

Looking at the Future Slightly Differently

loadings) would be monitored and (especially in the case of perishable goods) we could have prices determined by stocking parameters. Happy Hour on baked beans!

And the possibilities do not stop there. A small interrogator in the trolley, or a network connection from the shelf to the trolley would mean that the loading of the trolley could be dynamically tracked – displaying its current contents and the total cost as you move around the store. Once at the checkout – there would be no need to lift everything from the trolley, the till would have a simple interrogation of the trolley or its load (with maybe a secondary check on total weight) and the purchase would be a simple transaction.

So the paper advertisement in the window becomes a dynamic information exchanger. As a human I can read it, but so can my handheld device. It knows that I like the records of the Spice Girls, the poster knows that you are attempting to reduce the now old stock you are carrying on your shelves and the match is made (perhaps with an element of bartering?) and the transaction completed. It is not out of the question for the dynamic poster to be interrogation that passing “punters”, identifying their wants and wishes and in real time making that offer that can not be refused.....

The Information Age of the Future is going to be a body contact sport! We will all be in there delivering, wanting, acquiring and accessing information in quantities that we have never even dreamed of so far. No longer will you be required to know what connects to what and how – access to information will be seamless, effortless and ubiquitous, through the Always On Real Time Access networks.

The Future is arriving faster that we can every predict. The Future is not frightening it is exciting, the Future is Connected! Will your business be connected? Or will we just warmly remember you as part of those halcyon and simple days of yester-year?

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