## MB System Networks Limited - ISDN *In English*

The features of ISDN probably benefit small companies more than large organisations, (despite some misconceptions, it is not price prohibitive, in fact it often reduces a company's telecom spend).

When anyone tries to extol the virtues of ISDN, they usually site advantages such as, speed of transmission and quality of speech, but this only scratches the surface.

From a voice telecom point of view it all boils down to extra pieces of information which are sent down the line (or channel in ISDN speak), each time a call is made. These extra pieces of information allow modern telephone systems to perform a bucketful of sexy functions and these functions bring some very real benefits to the customer.

Most people have probably heard of these extra pieces of information but are not aware of all the advantages they bring.

**They are DDI (Direct Dialling Inwards) and CLI (Calling Line Identity).**

Before we look at ISDN in more detail, quick summaries of the benefits are;

**DDI**. Direct Dialling Inwards gives the ability to have multiple telephone numbers even with a small number of lines (or channels in ISDN speak).

This allows for fax machines, PDQ's, private lines, alarms, etc, to be connected through the company telephone system making significant savings on line rental costs. It also facilitates the ability to answer the phone in different company names or department names, (as these names will show on the LCD display of most modern phone systems, so the user only has to read the screen as they answer the call). It also gives the ability to analyse the response to different advertising and marketing initiatives, dial direct to an individuals desk, bypassing the switchboard, (private/direct number).

**CLI**. Calling Line Identity gives the ability to see who is calling you before answering the phone.

Some telephone systems allow you to keep a list of the telephone numbers of historic callers so that no more messages are taken with incorrectly written telephone numbers.

Callers can be automatically routed to the correct department, such as aged debtors directly to credit control.

Integration with computers will allow customer or prospect records to pop open in a window on your PC screen, before the call has even been answered.

## Other ISDN Benefits

**Trunk to Trunk Transfer**. Means transferring a call to any other number in the **world**, i.e. to your mobile, your home or villa in St.Tropez!

**Fast internet access**. Surfing the net (although not perfect) is significantly faster and less stressful using ISDN. The improved speed will reduce your phone bill and time spent watching the egg timer spinning. Broadband however, has taken over this advantage somewhat.

**Fast data networking**. Two or more computers at different sites can communicate much faster and more reliably via ISDN than via modem. This is often seen as one way of avoiding renting costly leased kilo-stream data circuits.

**Video conferencing**. Again not yet perfect but useable over ISDN. At £500 entry.

Other *sub-benefits* such as speed of call connection, quality of speech and volume (loudness) we do not intend to cover here. Although they are true statements, most people will not notice and they are not the reasons why a company would choose ISDN phone lines.

**DDI, CLI**, and arguably **Trunk to Trunk Transfer** are the most important aspects of ISDN from a voice call point of view. These are most company's cost justification for choosing ISDN.

**Fast Internet Access** and **Fast Data Networking** are the most important from a data standpoint.

**Video Conferencing** although still in its infancy, will become increasingly important. Critical mass is all that is needed. It didn't take fax machines long to catch on and they were £2000 when they were at this level of maturity!

# <u>DDI</u> in some more detail.

Each user is given their own telephone and / or fax number - not a separate line, just their own number. In fact users can have several numbers each if they need to.

Voice calls, data calls, video and fax calls sent to that number are (via the in-house telephone system) routed directly to the user, computer, video conferencing terminal or fax machine.

A difficult concept for some people to understand is that ISDN allows infinite telephone numbers whilst only renting a small quantity of channels (lines), for example it is possible to have say two telephone lines (channels) (i.e. Two calls can be made at one time without being engaged, voice & fax, voice & voice or voice and data) but 100 telephone numbers. Any two of the numbers (or one number twice) can be used simultaneously.

As each of these numbers hit the in-house telephone system, it is programmed to react in a different way. For example, make the fax ring,....... make this extension ring,....... make this group of extensions ring,....... make this extension ring and if not answered make these extensions ring,....... make this extension ring and display a greeting message on screen (so the person taking the call knows to answer in a different company or department name) or make this computer answer the call to receive data. Most ISDN phone systems allow a multitude of choices on how the system should react to a given **DDI** number

**DDI** means that the number dialled by the calling party is transmitted down the ISDN *pipe* on each call, as well as the **CLI** (the calling party's own number). This has powerful marketing analysis capabilities.

For example ISDN users who have enabled **DDI** will have been allocated a **DDI** number range, usually from 10 to over a 100 numbers. Some of these numbers, the company will allocate as their main telephone numbers and fax machine numbers. Others can be used when placing advertisements. Using a different **DDI** number for each advert is an easy way to monitor exactly which ads are producing the best response.

Many companies rent separate lines for Free-Phone numbers. Again, using **DDI**, these numbers can come in over ISDN lines. This saves on line rental and gives the ability to transfer, hold and re-direct the calls like any other that comes in over the in-house telephone system. With **DDI** tagging, the display on the phone will also show you that it is a Free-Phone call, letting you know that **YOU** are paying for the call. Plus, via call logging, you can analyse how many Free-Phone calls you are receiving and which numbers are producing the most response.

With call management software the data is captured to a computer for even greater analysis.

You can also use **DDI** numbers to remove the need for extra lines where you need to answer calls in a different company or department name.

If you need to answer different **DDI** numbers with a different greeting then your telephone system must support **DDI** tagging. But beware; when you activate **DDI** tagging on some systems you lose the ability to see **CLI**. This generally applies to telephones that have only a single line LCD display. As **DDI** and **CLI** work so very well together, this is an important point to check when purchasing a new telephone system.

Also phones with a two line LCD display tend to offer on screen help to the user, which ensures you get the most from your system.  This is very important, as most modern telephone systems offer hundreds of functions but as many of these systems are not "user friendly" or user helpful, the company employees do not know how to use them. Many of these functions offer money saving benefits or customer service benefits, so it is a great shame when they are available but nobody uses them. The message here is look for systems with on-screen help that are easy to use, such as the Samsung range.

**Fig 2**



In this example the calling party has called extension 203, which is engaged. The display on their phone then gives the choice of either, CBK (a Call-Back), MSG (Leave a MeSsaGe) or CAMP (Camp-on, used mostly when trying to put an incoming call through to an engaged extension. The incoming call is camped onto the engaged extension, as soon as they finish the current call, the waiting call is automatically put through. Recall timers etc would normally still apply).

The calling party simply presses the button below the appropriate word on the display.

## CLI. in Detail

Calling Line Identification is a feature that has been available in most areas of the UK for some time. On analogue lines this feature sends information in between the first and second rings of the phone on ISDN it uses what is known as the "D" channel. The caller can prevent this information from being sent if they choose to do so, although only some 4% of callers do this.

As business phone systems don't tend to support **CLI** from analogue lines, to receive it you must specify ISDN channels and not a group of analogue lines.

The Calling Line Identity can display information such as the telephone number, time of the call, the date of the incoming call and if the details are in the memory of the phone, the name of the caller.

So we know that ISDN lines deliver the calling parties telephone number when the call is initiated. The fact that telephone systems can now easily Integrate with computers means that the full name and address of the caller including, sales prospecting data, accounts and sales analysis information can therefore be displayed on the computer monitor, before the call is even answered. And the best bit is this functionality is no longer price prohibitive to smaller companies, via us it starts around £225.

**CTI** (Computer Telephony Integration) will also allow "power dialling" (click the record in your computer data base and the phone makes the call).

With all this extra functionality **CLI** & **DDI** also have powerful possibilities from a customer service standpoint.

## So what are these powerful customer service benefits?

Take for example a company that needs to offer some sort of support-line or help-line to its customers. Such as, computer software houses, Consultancy Company's or manufacturing company's who offer service and support for the products they sell.

Give some of your more important customers their own DDI number to call. In other words their own help-line. And instead of answering the phone, "Widget Computers", "Anderson Coopers and Ernst" or "Braithwait & Son Engineering", because the customer name will display on the screen (of the phone or computer) you can answer in their name with "Herts County Council Help-Line" or "Virgin Airlines Widget Software Support".

So what does the customer think when he hears this, "Wow they have a whole team of people working just for my company", yes of course we have ;-))

**Trunk to Trunk Transfer**. The ability to transfer a call to any other number in the world, i.e. to your mobile, your home or villa in St.Tropez.

Using this, companies can take a call on their main switchboard and transfer it literally anywhere. This gives companies the ability to make sure all of their staff really are in when they are out. The fact that the call is being transferred possibly hundreds or even thousands of miles away is completely invisible to the calling party.

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Trunk to trunk transfer is one of the benefits that small company's can make great use of. How would you like to have a virtual office in some of your neighboring yellow pages areas? Read on it gets even better............

By installing a small ISDN system at home a company executive can effectively set up a virtual office. This may allow the company to have a yellow pages entry in a neighbouring district (with a tel no. local to that area) and / or use other forms of local advertising. A small system like this is likely to cost 1k to 2k.

Using trunk to trunk transfer the system can be set to automatically divert all incoming calls to the company's main telephone number; again this is completely invisible to the calling party.  When the call is answered at the main office the display on the phone will allow the receptionist to answer "XYZ Watford" or "XYZ St.Albans" As people often like to do business with local company's (for after sales support/service reasons), this can have a dramatic effect on in-coming business.

But for the company exec, it gets better still, read on...........

Having installed a small system at home, the extra business this brings is only one advantage.

The company exec can now enjoy working from home on occasions, without the feeling of being cut off from the nucleus of the operation. As a member of the WAN (wide area network), everything that is available from his office desk is now available at home. Fast connection to the company computer network, the ability to transfer calls in either direction (without the caller (or his secretary) knowing he is still in his pyjamas) or not ;-))

There will be no ear-ache from other members of the household when he is surfing the internet (at high speed) or connected to office LAN (Local Area Network). As even a single ISDN2 effectively brings two telephone lines (channels) into the house. So at any given moment he/she could surf the net whilst someone else makes a voice call or receive a fax and make a voice call, or video conference with the office (again not price prohibitive) whilst discussing and viewing (via the WAN) the same spreadsheet or customer quotation on the computer screen. The possibilities are limited only by your own imagination.