

Effective Computer Telephony Integration can dramatically improve the cost-effectiveness and quality of your data handling and phone system.

WHAT IS COMPUTER TELEPHONY INTEGRATION?

Computer Telephony Integration (CTI) links up your computers and telephones to handle all your voice, fax, and data traffic. Finding and implementing the right solution could reduce operating costs and improve the quality of customer service you provide.

Deciding whether to investigate and possibly implement CTI depends chiefly on whether your business is telephone intensive or not. If you and your staff spend a lot of time on the phone, dealing with incoming calls or outbound telemarketing, CTI will definitely be useful. If you do not make or receive substantial volumes of calls, then it will be less relevant for your business. CTI can also work with large volumes of e-mail traffic, and with mobile phone text and voice communications.

WHAT ARE THE BENEFITS?

The benefits of Computer Telephony Integration can include:

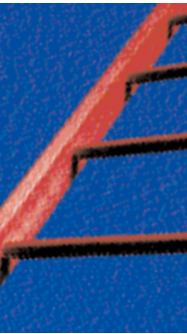
Improved customer service

- Receiving customer details on screen at the same moment you receive the incoming call means you are able to give a better, more immediate response to the customer.
- Automatically seeing key details about that customer, such as notes from previous conversations or order history, means staff can offer a more personalised service.
- Automatic call distribution (ACD) automatically answers calls with a voice menu, and uses caller responses to route incoming calls to staff with the most appropriate knowledge.

Reduced costs

- You can use alternative carriers (such as Onetel, NTL, or many other phone companies) and/or the internet for your phone and data traffic.

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- Optimisation – with voice, fax, and data all sharing a single network, fewer telephone lines are required, reducing costs still further.

Greater efficiency

- Dialling out automatically with a single mouse click from a computer saves time and is more accurate. As many as 10% of calls are misdialled, so if you make a lot of outgoing phone calls, the cumulative time lost to wrong numbers can be substantial.
- Staff can handle more calls in a given period of time. Automatic customer identification can cut at least 20 seconds off each call. This adds up to a saving of five hours if you make over 1,000 calls.
- Logging calls, both inbound and outbound, and recording them if necessary, allows you to monitor the effectiveness of your operating procedures and individual staff members.
- Voicemail saves time and avoids missed opportunities by taking messages.
- Automatic intelligent internal call routing means incoming calls are routed where they need to be, without any human intervention – saving time for everyone.

Flexibility

- Most CTI solutions are scaleable and accommodate increasing numbers of calls or staff, without a significant increase in costs.



WHAT COMPUTER TELEPHONY INTEGRATION SOLUTIONS ARE AVAILABLE?

If yours is a new business you can design a CTI solution from scratch, developing it alongside the other systems you choose to adopt. If you already have other parts of your system in place, then these will dictate your CTI solutions to a greater or lesser extent. See the section on *Deciding on the right CTI solution* on page 7 for the types of computer system and telephony solution you may already have in place.

Basic solutions

- You can run a basic CTI solution on your computer, or small network of computers, without the need to invest in specialist equipment.
- This will involve some minor modifications to your computer, and installing a soft phone program. This is a piece of software that allows your computer to emulate a telephone making and receiving calls over the telephone line. You may also need a microphone and headset to connect to your computer.
- It may also be necessary to install or reconfigure the e-mail client you are using (such as Microsoft Outlook) to allow your new telephone system set-up to dial directly from records that you have stored in your communications databases (such as Outlook) or in your customer databases (such as Microsoft Access or FileMaker Pro).
- If your system is configured to use VoIP (Voice Over Internet Protocol) your computer will emulate a traditional phone, but use the internet, rather than traditional telephone connections, for placing and receiving calls. This means you can dial around the world for only the cost of your internet provision. This means that you pay no call charges – just the cost of your internet dial-up or always-on service. Since VoIP is relatively new technology it does have some drawbacks. The biggest of these is reliability – a sudden reduction in bandwidth or loss of internet connection can bring down your phonelines. For more information on VoIP look on our website in the technology section at www.dti.gov.uk/bestpractice.
- You can add voicemail to your e-mail system so you can receive voice messages as well as e-mail through your inbox.



- Your computers can also be fitted with call logging, and additional software such as Pop99! or Picazo/Algol POP! which work with many popular software programs to automatically launch when an incoming call is received. This type of software allows you to consult incoming caller information. It also lets you dial out directly from customer records, stored in such popular databases and contact managers as: Act!; Commence for Windows; Day Timer; Organizer for Windows; ECCO Pro; GoldMine for Windows; Info Select; Maximizer; Notepad; On-Schedule; Organizer; Microsoft Outlook; MS Access; MS Schedule+; Time & Chaos; TeleMagic; and others.

Advanced solutions

- For larger businesses, a server-based or telephone hub solution will be more appropriate.
- A server or phone hub is like an extra computer which controls the network, and distributes calls to the various computers / telephones on the network.
- If you already have a server, you may be able to configure it to run your telephone systems, but most providers prefer to supply their own box – basically a dedicated computer that deals with telephony alone.
- You will have access to improved functionality, like options to queue and distribute e-mails and web-based communication (like web chats or website call back requests).
- In-bound and out-bound calls can be managed through the same system – letting staff switch easily between roles.
- Most advanced solutions include sophisticated reporting features.

Cost

The size and complexity of the CTI solution your business adopts will depend very much on the type of activities you are involved in and the number of customers you deal with over the telephone and by e-mail. If you have only a small customer base, or your business receives very few phone calls, CTI is probably not worth the investment.



To find out whether it could add real benefit to your business, carry out a cost / benefit analysis to see if the cost and disruption of introducing CTI is worth it in terms of potential improvements to the efficiency and productivity of your call handling.

One key point to bear in mind about cost: all CTI systems are classified as IT, rather than telephony and are eligible for 100% write-off against tax (until at least April 2004).

Basic one person solution – assuming you already have a computer, with a copy of Outlook, all you will need to set your system up is a TAPI modem, a telephone, and the software to make Outlook pop caller information on screen. **Guide price** £250.

Basic five person solution – assuming you already have computers, you will need a telephone system, with hub, network cards, cabling, telephones, system configuration, and possibly individual software to pop information on screen (unless you have Maximiser or ACT!). **Guide price** £2,500.

Basic ten person solution – assuming you already have PCs, you will need a telephone system, with hub, network cards, cabling, telephones, system configuration, and possibly individual software to pop information on screen (unless you have Maximiser or ACT!). **Guide price** £6,000.

The prices of these solutions will be affected to some extent by the features you want on your CTI system. Additionally an increasing number of all in one systems, like Avaya IP Office, are becoming available. **Guide price** £3,000.



Features

Decide which of these following features are important to you when choosing your CTI solution:

- **Interactive voice recognition (IVR)** – this allows the system to route incoming calls based on information the caller provides through an automated selection menu. It is becoming ever more widely available.
- **Integrated fax server** – several inexpensive software programs will allow you to fax to and from every computer, giving you a separate fax number but no longer requiring an additional line.
- **VoIP/IP** – if your system can use Voice Over Internet Protocol (VoIP) you can use the internet for all incoming and outgoing calls and save significantly on call charges.
- **Back-office integration** – make sure the solution you choose matches up with your existing software. Many middleware programs (such as Alchemy and Pro-Call Enterprise) and PC-based programs will support popular database, contact management, and e-mail client solutions.
- **Versatility** – if appropriate for your business, certain solutions will also work with other devices, for example you may wish to generate SMS text messages to mobiles or support web functionality such as text chat, or e-mail campaigns. You will need to check the specifications of the products you research – and if this functionality is not included (and you require it) check whether you can add inexpensive software bolt-ons (from £50) to provide it.

Further considerations

- **Use of standard phones** – most systems should work with standard telephones, which are inexpensive to purchase and easy to replace. If your solution involves expensive purpose-designed phones, it may be difficult and costly to upgrade in future.
- **Scalable** – make sure your solution has the capacity to grow with the future demands of your business.
- **Convergence** – telephony and computers are coming ever closer together. Make sure you choose a system that supports and benefits from this convergence.



DECIDING ON THE RIGHT CTI SOLUTION

The Computer Telephony Integration (CTI) solution that's right for your business will depend on several factors, such as what hardware / software you already have in place and what telephone system you're using.

Your existing computer network

If you have a computer or small local network of computers in place (up to say ten machines), you can easily adapt these to a basic CTI solution. If you have a network in place – ten computers and over – you can also implement CTI, although it will need to be configured with whatever telephone system you already have.

Your existing telephone systems

Along with your computer equipment, the other key component of your technology to examine is your telephone system. Telephone systems fall into one of four categories – establish which yours is:

- **POTS (plain old telephone system)** – Although most of the telephone companies' networks now rely on digital communication, POTS systems still deliver an analogue signal to your telephone receiver. In order to take advantage of CTI you should really consider upgrading to an ISDN connection, possibly broadband, which allows you to run your telephones and internet connection over the same digital line.
- **PBX (private branch exchange)** – In practice this will either be an automatic system, which allows calls to be routed by the users (PABX) or a manual system (PMBX) that requires an operator. Most modern PBXs will be able to work with CTI.
- **ISDN (integrated services digital network)** – This allows one single cable to carry voice, digital network services and video. ISDN is gradually replacing the plain old telephone system. Broadband and many other internet connections are provided on ISDN lines – if you have ISDN you are well positioned to take advantage of CTI.
- **Converged** – A converged telephone system handles both data networking and voice calls in a single box. This has the advantage of ISDN access with the ability to take and make calls on analogue lines.



IMPLEMENTING COMPUTER TELEPHONY INTEGRATION

Research & analyse

Set objectives

Set clear measurable objectives for what you want to achieve.

- Do you want to respond quickly to your customers' queries?
 - Offer a more personalised service?
 - Increase efficiency and save time?
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Cost/benefit analysis

- Establish the costs of implementing a new CTI system, including related costs such as new phones or software, alongside less tangible costs like staff training.
 - Weigh these costs against the potential gains of having CTI, such as increased efficiency, improved customer service and lower phone costs.
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Which CTI solution?

- Basic?
 - Advanced?
 - Outsourced?
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Other considerations

- Are you planning on designing a CTI solution from scratch, or will you need to adopt one alongside your existing systems? Take into consideration the size of your business and what you will be using it for.
- Make sure your solution works with the phones and systems you already have. For example, contact packages ACT! and Maximiser will display incoming caller information without any additional software – other packages such as Outlook and Goldmine will require an additional program (such as Pop99! – around £100 per user).
- Do you want your system to be compatible with VOIP, manage fax and e-mail traffic, log outbound calls, route calls to the most appropriate person using Interactive Voice Recognition etc?



- If your business is large you may prefer a server-based or telephone hub solution, which is effectively an extra computer that deals with telephony alone. Or you may want to outsource the entire process of call handling to a third party provider such as a call centre.

Consult

Professional advice

If you lack the skills in-house, contact a Business Link adviser (or equivalent if you are in Scotland, Wales or Northern Ireland), in the first instance, for help on how best to:

- work out your requirements
- establish how much you can afford to pay
- scope the project
- advise on implementation
- provide training and software support.

Ask around

- What CTI solutions do your competitors or others in your industry employ? Simply calling your competitors and posing as a potential customer should give you a good idea of the quality of their call handling. Your trade or professional association may be able to help – or have a word with your Business Link adviser (or equivalent in Scotland, Wales and Northern Ireland).

Plan & test

Try before you buy

- One good way to start is to try before you buy. Some providers offer free, thirty day trials of all or part of their programs.

Plan the rollout phase

- Depending on the complexity of the solution you are introducing, you may want to provide some staff training at this point. Decide who needs training and allow time for them to adjust to the new system.



✓ Act

Implement

- Roll out any necessary training.
 - Encourage staff involvement and feedback, this will help smooth implementation, as staff buy-in can make or break a technology project.
 - Consider setting up a cross-departmental taskforce to manage the implementation process – it will help with staff buy-in and ensure that implementation works company-wide.
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Evaluate

- Monitor and review the impact on your business and against your objectives.
- Get feedback from staff, customers and suppliers on the changes.
- Evaluate the impact after 6 months and 1 year. Have you achieved your objectives? Establish how you could improve things further.



FURTHER HELP AND ADVICE

Most CTI solutions are provided through resellers who tend to offer software and hardware as part of an overall installation and service contract.

Providers

- www.cti-uk.com – the website of CTi, a UK provider of CTI solutions to businesses of all sizes.
- www.squaresystems.co.uk – the website of Square Systems, UK provider of CTI and other solutions to businesses of all sizes.
- ipt.eu.didata.com – explains the benefits and technology behind Internet Protocol Telephony (IPT)
- www.avaya.com – the website of Avaya, a leading global provider of CTI solutions.

Information

- www.focas.info – information from many of the industry's leading manufacturers and providers of CTI solutions
- www.call-center.net/articles-cti.htm – for general information on CTI

Low cost phone companies

- www.onetel.co.uk – Onetel
- www.ntl.com – NTL
- www.planet-talk.co.uk – Planet-talk
- www.tiscali.co.uk – Tiscali



Glossary of technical terms

ACD (Automatic Call Distribution) – software that works with Interactive Voice Recognition to answer, queue, and route all incoming calls to the most appropriate person.

PBX (Private Branch Exchange) – internal company telephone system.

POTS (Plain Old Telephone System) – internal company telephone system.

ISDN (Integrated Services Digital Network) – modern telephone line with greater capacity than traditional lines.

IVR (Interactive Voice Recognition) – whereby your system can prompt and responds to callers' vocal instructions.

VOIP (Voice Over Internet Protocol) – allows your telephone system to place calls over internet connections, rather than through traditional telephone connections.



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