

# Demystifying CTI

Explaining and exploring the power of Computer Telephony Integration (CTI)

---

## INTRODUCTION

Keeping one step ahead of your competition has never been more important. Your customers expect great service. When they call they expect you to know who they are, what they did, and why they might be calling. What's more If your customer service isn't up to scratch a few minutes spent venting their frustrations on social media to thousands of your current or future customers could spell disaster!

That's why more and more organisations are integrating their telephony and customer management systems so that the second a call comes in, whoever answers, has the latest information at their fingertips to provide your customers with great customer service.

Keeping customers hanging on while you scratch around for information providing them with a Groundhog Day experience as repeating information for the third time gives them the impression you just don't care. It also leaves your customer service team feeling frustrated as they hunt around for information which should be at their fingertips.

Being able to integrate telephones with your customer data has never been more important and what's more this is now affordable for even small organisations.

This document explains how the technology has evolved and how you can create, great and consistent customer experience by proving your customer service team with an integrated system which seamlessly integrates your telephony and customer facing systems.



---

## WHAT IS CTI?

**Computer Telephony Integration (CTI)** can refer to technology that provides an interactive link between telephone and computer systems (such as a CRM system), enabling desktop functions such as: Call Control, Power Dialing (Click to Dial), Screen Pop, Call Reporting and much more.

While there are many features of CTI systems; we consider the following desktop features as key for any successful solution:

- **Outbound Dialling Support (Click to Dial)**
- **Automatic Caller Recognition (Inbound/Outbound)**
- **Automatic Recording of Call History**

### Outbound Dialling Support (Click to Dial)

This feature means providing with the user the ability to quickly and easily dial a someone from an integrated application (sometimes referred to as "Click to Dial").

For example, some solutions provide a dialer that gives the user the ability to automatically dial a selection of numbers for the current record.

### Automatic Caller Recognition (Inbound/Outbound)

This feature means providing the user with a list of potential matches at the start of a telephone call (sometimes referred to as "Screen Pop").

Where there is a single match of the telephone number in the application, some solutions provide an 'Auto Associate' feature which speeds up the process of associating the person calling with that phone call.

Alternately, other solutions provide a capability for the user to choose the appropriate "person" from a list (after receiving verbal confirmation), which would then associate the caller with a record within the integrated application (e.g. CRM).

Obviously, this is the preferred method where there are multiple matches to the same telephone number within a CRM system.

Some organizations also choose to do this where there is a single match result – as you can never guarantee who the caller will be (e.g. it could be a caller using someone else's phone).

Once the call has been associated, the CTI system could also automatically navigate the integrated application to the relevant record.

### Automatic Recording of Call History

This feature means taking the valuable statistical information of the call and creating a relevant record in the integrated application. This could then provide a log of all calls that have been made to and from the caller within the application.

Some solutions provide an on-screen call notepad to allow quick note capture and record this along with all the above information into your CRM – no more relying on Post-It notes!

### Advanced Features

There is also an array of other features out there, which will be more suitable for some businesses than others. Some of these features come as standard from service offerings and others are bolt-ons to the 'out of box' solution. This is by no means an exhaustive list, but it should give you an appreciation of additional features that are available in some CTI offerings:

- **Power Dial, Auto Dial and Hyper Dial** – These are all forms of 'Click to Dial', Power Dial is the ability for a user to dial out from a list, Auto Dial is the ability to automatically dial through that list in succession and Hyper Dial is the capability to dial out by clicking on a phone number within a CRM record.

- Preview Dial for any Entity – This is the capability to outbound dial from any record associated with any entity, pulling through all the phone numbers associated with the Contact linked to that record.
- Pulling in Sales and Services History – Some products will automatically pull in the previous history of activity between a business and a contact so that it is instantly available in a CTI tool.
- Initiating Scripts – In certain companies, it can be useful to provide on-screen guidance to employees on how to handle verbal communications in calls, particularly where the company has complex products, services and processes. Some CTI solutions can offer this as part of an integration with other third-party offerings or this can be achieved through integration with CRM interfaces such as USD (Unified Service Desk).
- Initiating Workflows – Some CTI tools trigger a workflow to create actions during or on completion of a call.
- Reacting to DDI's (Direct Dial Inwards) and IVR's (Interactive Voice Response) – Some organisations have dedicated lines (DDI's) or Voice/Touch Tone selection capabilities (IVR's) which are dedicated to specific products or services.

Some CTI solutions can respond to a specific DDI or an option selected within IVR by opening a specific web page or popping certain records to provide guidance to the employee answering that call.

#### Customisation

It is worth considering whether the CTI solution you are purchasing meets your needs as it is. Or do you need to tailor it to your specific business processes to get the maximum efficiencies?

And only where relevant, to what level is the CTI solution both configurable and customizable. It is far better to fully trial a product before purchase and find out whether it meets your business processes as they stand. If not, and the solution can't be tailored....is it the right solution for you?

#### Non-CTI Functions

There are a few misconceptions around what are perceived to be CTI functions that are functions that you should expect from the phone system itself. The most common ones are managing call routing to the correct user and voicemails. It is important to understand that a CTI solution will only 'react' once the phone system itself has routed the call to the correct user.

There are also a few other features which are specialist add-ons, rather than a core CTI function.

Predictive dialling is one of these. Predictive dialling is where a list of phone numbers is automatically dialled in succession and when a call is 'established', the application then hunts for an available agent within the business to take that call.

This shouldn't be confused with Auto Dialling (auto dialling through a list where the agent is always present), as this is a feature that potentially can be created in CRM utilising Workflows.

The other feature that falls into the 'Specialist add-on' category would be Recording voice calls. This is usually a stand-alone application to CTI which typically has higher requirements in terms of IT Security. However, it is important to note that some CTI solutions can store the Voice Recording ID, rather than the audio file itself, so there is still an easy way to match a Voice Recording with a CTI call.



### CTI Solution VS Call Center Solution

When considering whether a CTI Solution or a Call Center Solution is more suitable for your business, it boils down to what functionality you really need.

Generally, a CTI solution is a *user*-focused system enhancement, bringing improved user efficiency and ideally better monitoring and logging of phone-related activity.

On the other hand, a Call Center solution is a specialised *operationally* focused set of functionalities of which CTI may be a small part.

To help you differentiate between the two and give you a 'steer' as to which is more suitable for your needs, the following have traditionally been Call Center Solution Capabilities:

- Support for multiple channels - phone, email, chat, social [though CTI and Web chat/Social can co-exist within certain CRM systems]
- Agent management
- Scheduling and wall boards
- Queue management
- Skill-based routing
- Predictive dialling
- Call (Voice) recording [though some CTI solutions can store the Voice Recording ID]

However, it also possible that by combining CTI with application panels (like Unified Service Desk for Microsoft Dynamics), much of this Call Centre functionality can still be delivered.

Indeed, it is possible to deliver that multiple Communications Channel experience and some of the above-mentioned features.

### CTI – The Value Proposition

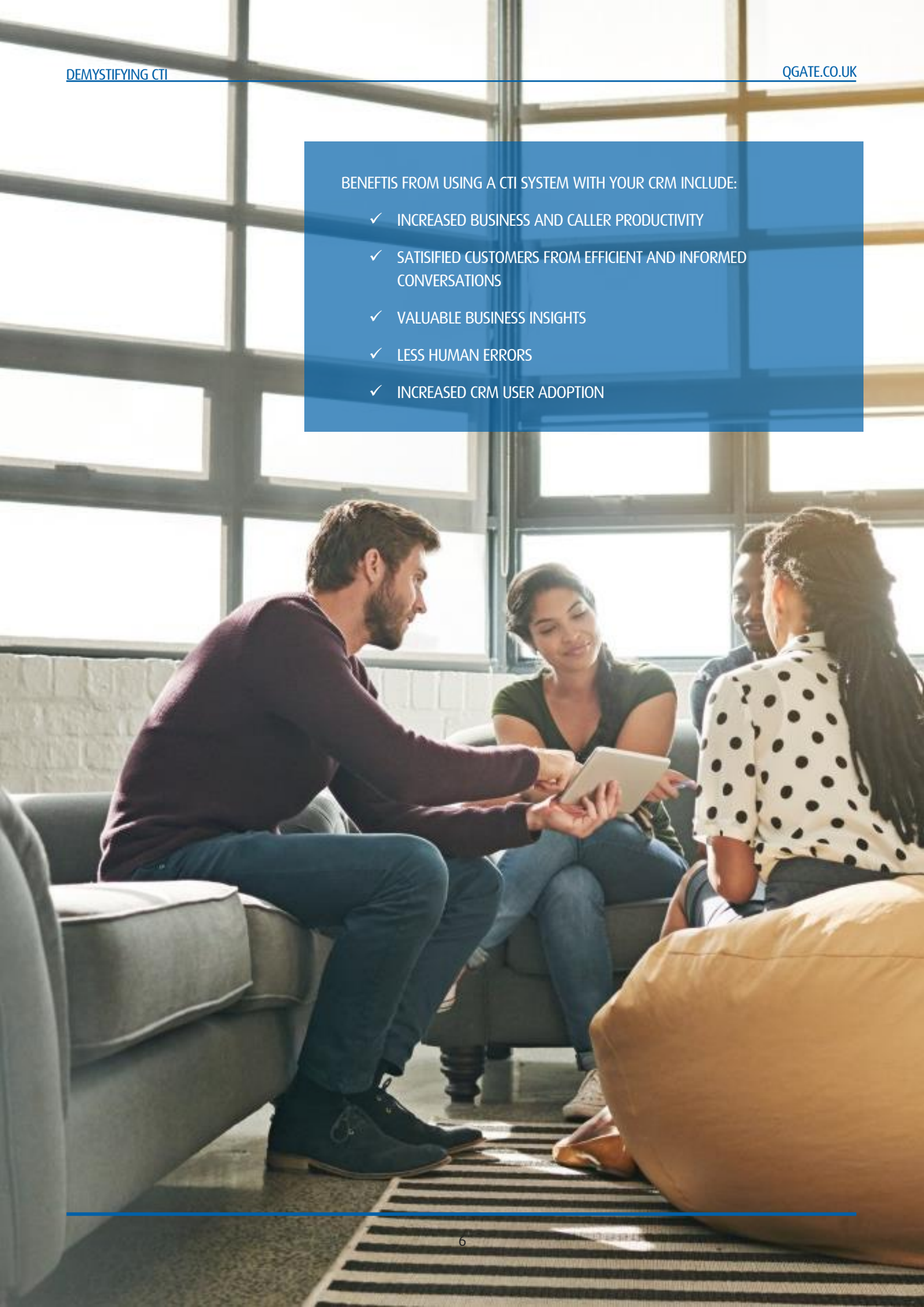
As a final point in this area, we would say it is easy to get carried away with the breadth of functionality that both a CTI solution and a Call Center Solution can provide.

But as with any software purchase, we would recommend you first look at your business processes to get a good understanding of which features you need / would benefit from and see who is providing the best value solution based on that required feature set.



BENEFITS FROM USING A CTI SYSTEM WITH YOUR CRM INCLUDE:

- ✓ INCREASED BUSINESS AND CALLER PRODUCTIVITY
- ✓ SATISFIED CUSTOMERS FROM EFFICIENT AND INFORMED CONVERSATIONS
- ✓ VALUABLE BUSINESS INSIGHTS
- ✓ LESS HUMAN ERRORS
- ✓ INCREASED CRM USER ADOPTION



---

## BENEFITS OF CTI

If you speak to most organisations, delivering exceptional customer service is now of paramount importance to business survival.

New communication tools like social media and email have led to an unprecedented amount of direct contact between businesses and customers. As our Managing Director, Rowland Dexter puts it:

*“The internet has made it possible for disgruntled customers to make their feelings known to a wider audience. They don’t have to go to the trouble of writing a letter to the CEO anymore – they can vent their frustration by writing a knee-jerk one-star product review or a quickly-written tweet. ‘Word of mouth’ no longer means an individual grumbling to friends down the pub; it means communicating dissatisfaction to potentially hundreds or thousands.”*

The visible impact of customer dissatisfaction on a business makes establishing a corporate focus on customer service even more necessary and key to success.

In fact, if you get it right, delivering exceptional customer service is a great revenue generator, that online ‘word of mouth’ can be used positively too:

### Exceptional Customer Service

The leading benefit of CTI is the dramatic impact the product can have in delivering exceptional **customer service**:

- CTI provides the ability to have the service/sales history instantly to hand on a call which means you have intelligent conversations with customers about issues that affect them. It means they’re no longer having to wait on hold, whilst the employee scrambles for that information, and the customer becomes frustrated.
- CTI also provides Automated Caller Recognition (ACR) which adds that ‘personal touch’ to customer interactions. Knowing who is calling and addressing them personally with the confidence that you already have their information to hand, means they’re more likely to feel valued.

### Significantly Improved User Productivity

CTI also can provide an increase in **user productivity**. In fact, most CTI solutions increase call rates by a third, because you are simply working more effectively. This is music to the ears of the Manager who wants to ensure his team is working, as effectively as possible, on those customer queries, issues and sales opportunities:

- Time saved dialing or looking up customers within an application
- In application call control and automatic in-call note capturing
- The ability to initiate business process/workflows based on a call

### Revealing Business Insight

For the Manager who wants to ensure that strong performers are identified, and behaviours replicated, data from CTI and CRM can be used together to provide valuable **business insights**:

- Understanding the Call Activity within your business and the potential links to Business Performance provides an opportunity for best practice emulation

### Increase CRM User Adoption

Finally, without doubt, CTI actively encourages the adoption of CRM itself. Most users dislike the admin side of their roles, and the Managing Director will most certainly want to see that their investment in CRM is not being wasted by users not using the system effectively.

We would suggest CTI is considered at the start of any CRM deployment to effectively affect your users CRM adoption:

- CTI reduces data entry by automatically recording notes
- CTI makes it much easier to record the customer sales and services interactions, whilst still on the call. You don't need to **make** the notes manually and write them up again afterwards
- Simply put, it makes CRM easier to use.





---

## BUSTING CTI MYTHS

### CTI AND CRM MYTH ONE: COMPUTER TELEPHONY INTEGRATION IS WITCHCRAFT

As with most technologies that require knowledge in more than one area, the integration of Telephony and CRM systems is not free from misconceptions and wrong assumptions

For some, CTI is just a screen pop that shows you who's calling. Others might tell you that they will have to develop a system from scratch to give you basic functionality. In the past, many would simply refuse to touch it because they specialise in only one of the technologies and understandably didn't want to venture into unknown territory.

There is no magic in it – there are good CTI solutions out there, developed by teams who understand telephone systems, CRM systems, and the business processes that benefit from combining the two. In most cases, you can use them out of the box or with minimal configuration.

### CTI AND CRM MYTH TWO: CTI IS ONLY FOR CALL CENTERS

Telephony integration is for ANY organisation that has a CRM system and engages in a high volume of telephone calls. Phone-based sales operations are an obvious scenario for telephony integration but by no means the only one.

Imagine you run a Customer Services team or a Technical Support desk. Having all the relevant information in front of you when the phone rings saves time, helps you provide a better customer service, and makes your brand look good. What if you manage a large car dealership that needs to call customers to confirm details and book test drives? What about a takeaway restaurant? Yes, some may receive hundreds of calls between 6pm and 8pm, making every second on the phone count, not only for customer satisfaction but for their own operational efficiency.

Telephony integration is for all businesses that have telephone-based teams – inbound or outbound.

However, the functionality of the CTI will be restricted by the functionality of the API, which is why you should always test it in a real-life scenario (a.k.a. free trial!) before buying it.

### CTI AND CRM MYTH THREE: CTI WILL BE MORE EXPENSIVE THAN THEN CRM SYSTEM

CTI solutions have a very straightforward ROI, with an obvious increase in productivity.

For outbound teams, it means more calls per shift, and therefore more meetings booked, more customers reached, more sales deals closed. For inbound teams, it means more calls taken, more orders placed, more records updated, more meals on their way, more cases closed – and all with a significant reduction in human error.

We would suggest a solution that gives you the flexibility of having Named and Concurrent users, with subscription licensing. It makes it easier to budget, to get approval, and keeps you from being locked in. Even small organisations can access a full stack CTI integration without breaking the bank.

Rule of thumb for any IT system, before buying anything or embarking in long and expensive developments, identify a couple of existing solutions, take a free trial and see if any of those fit your business.

---

## CTI – TECHNOLOGY EXPLAINED

In this final section, we're going to dig a little deeper into the technology that sits behind CTI.

### Compatibility

First things first, no CTI solution is compatible with all phone systems in the marketplace. The appropriate phone driver must be developed for that integration to work.

Will my phone system work if it is...?

- ...TAPI compliant?" – Well, TAPI is one of the first communication protocols developed for integration between Telephone and IT systems. Being one of the first communication protocols most older CTI solutions will work with it.
- ...a VOIP system?" – VOIP (Or Voice Over IP) is simply the method of carrying voice data over fibre-optic cabling. The clear majority of phone systems use VOIP nowadays so that itself is not an indicator as to whether a CTI solution will be compatible.
- ...in the cloud?" – If your telephone system is in the Cloud, again that itself is not an indicator as to whether your CTI solution will be compatible. You will, however, need permission for your CTI solution to connect to the telephone system wherever it is installed.
- ... uses SIP?" – SIP (Session Initiation Protocol) is the communication protocol that VOIP uses to carry voice, video conferencing, messaging and media distribution. Again, it is not an indicator of compatibility.
- ...different in each location?" – If you want a 'uniform experience' for your employees you will need to ensure your CTI solution is compatible with all phone systems across the sites you want CTI implemented.

### APIs

APIs (Application Programming Interfaces) is the communication method for a CTI solution to be able to pass information between a phone system and CRM. API's in the CTI World come in various formats: i.e. TAPI, MiTAI, CSTA, TSAPI, OIA.

Phone system APIs do have different vocabularies, and the fact that your system is compatible does not mean that you will have full call functionality available. It depends on what functions are available in that API.

For example, with Asterisk systems that functionality is very restricted, including the inability to be able to answer a call using the CTI softphone interface (you still must use the physical handset).

As a general note, the better CTI solutions will support a wide range of system APIs and therefore a wide range of systems.

### Architecture Types – Traditional VOIP vs SaaS

So, from a technology perspective, what are the commonly found IT Architecture supporting CTI solutions?

Broadly speaking there are now two types of phone system architectures that a CTI solution can integrate with:

1. A traditional VOIP infrastructure, or
2. A SIP-based Cloud Hosted 'Software as a Service'

The traditional VOIP Infrastructure consists of either a PSTN or SIP Trunk connected into a PBX (Telephony Switch). Fibre optic cabling then carries that voice data to IP phones and the CTI data stream.

The CTI solution connects in at the PBX level, through the API. That PBX can either be On-Premise or in the Cloud. If it is in the Cloud then the API needs to be exposed, and not blocked by a firewall.

With some phone systems, you will also require a telephony licence for the CTI solution to be able to connect to the PBX.

The second example is an Architecture type that we are seeing strong growth in. This architecture is like the Traditional VOIP approach, which a few differences:

They use SIP as their voice data carrying protocol, they are solely over VOIP rather than PSTN and they only offer the phone system on a 'Software as A Service' basis in the Cloud. Examples of telephony providers offering this type of architecture include Broadsoft, RingCentral and Telsis.

#### **Phone Number Formatting**

Finally, it is worth mentioning that CRM systems often do little to help with phone number formatting. The consistency of that phone number format is essential to ensure there is a good 'hit rate' on calls in the CTI solution. To that end, it is important to consider whether your CTI solution has been technically designed to streamline that format and remove the punctuation from dialling/area codes and user variations in recording phone extensions and the utilisation of hyphens.

---

## **CONCLUSION**

We hope you have found this paper useful, helping to Demystify CTI and what benefits it would bring to your business. We have also included a Glossary of Terms in the Appendix, as a useful reference.

This is a rapidly changing marketplace: telephony industry, the CRM world and the breadth and depth of CTI offerings available.

If you are considering the array of CTI options available, we hope this QGate Whitepaper will help you in this task.

---

## APPENDIX: COMPUTER TELEPHONY INTEGRATION (CTI)

### GLOSSY OF TERMS

<b>ACD</b>	<b>Automatic Call Distributor:</b> A system that is able to automatically: answer calls, queue calls, retrieve information and logic from a database, determine the best course for the call and finally, route the call to the appropriate agent (if available).
<b>AGENT</b>	<b>Agent:</b> A member of a call centre who makes and/or receives telephone calls.
<b>AUTO ATTENDANT</b>	<b>Auto Attendant:</b> An automated voice and call processing system, which allows callers to automatically route themselves to internal extensions or departments.
<b>CLI / ANI</b>	<b>Caller Line Identifier / Automatic Number Identification:</b> Represents the telephone number of the caller.
<b>CTI</b>	<b>Computer Telephony Integration:</b> Can refer to any technology that provides an interactive link between telephone and computer systems, enabling features such as: Power Dialling, Screen Pop, Call Reporting and much more.
<b>DDI / DID</b>	<b>Direct Dialling Inward / Direct Inward Dialling:</b> Typically represents the last few digits of a dialed telephone number into a PBX, allowing external callers to reach an internal extension directly without going through an operator/switchboard.
<b>DNIS</b>	<b>Dialled Number Identification Service:</b> Similar to DDI/DID, but represents the whole number dialed, rather than the last few digits.
<b>IVR</b>	<b>Interactive Voice Response:</b> A system which allows a caller to access and update electronic information via a combination of touch-tone key presses and/or voice recognition (e.g. telephone banking).
<b>PBX</b>	<b>Private Branch Exchange:</b> A private telephone switching system, usually located on an individual company's premises (unless it's a hosted PBX), providing additional features such as: internal calls, hunt groups, call-forwarding and DDI/DID.
<b>POWER DIALING</b>	<b>Power dialing:</b> A system which automatically places outbound calls for an agent.
<b>PREDICTIVE DIALING</b>	<b>Predictive dialing:</b> An automatic system which uses various algorithms to place many outbound calls and pass them to available agents upon being answered.
<b>PREVIEW DIALER</b>	<b>Preview dialer:</b> An automated system which shows the next person to be caller on an agent's screen, giving them the option to either proceed or skip to next contact.
<b>PSTN</b>	<b>Public Switched Telephone Network:</b> The public telephone network, to which PBXs are connected to.
<b>SCREEN POP</b>	<b>Screen pop:</b> A term for automatically displaying detailed caller information to an agent, based on the callers telephone number (CLI/ANI) and/or the telephone number dialed (DNIS).
<b>SWITCH</b>	<b>Switch:</b> General term referring to an ACD, PBX, or telephone exchange.
<b>TAPI</b>	<b>Telephony Application Programming Interface:</b> An Application Programming Interface (API) that provides a common interface for interacting with the telephone system for a single user's extension (1st-party integration).
<b>TRUNK</b>	<b>Trunk:</b> Physical link between telephone exchanges.



**TSAPI**

**Telephony Server Application Programming Interface:** An API that provides a common interface for interacting with the telephone system for multiple extensions (3rd-party integration).

**VOIP**

**Voice over Internet Protocol:** A protocol that enables the transmission of voice via the internet (e.g. internet telephony), instead of traditional PSTN.

