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A GUIDE TO VOIP FOR **SMALL TO MEDIUM SIZE BUSINESSES**

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A guide to VoIP for small to medium sized business

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I want to move my business to VoIP..

In choosing VoIP as your preferred telephony option the ITSP (Internet Telephony Service Provider) you choose to engage with you the majority of the topics listed below. If they don't, find a better provider.

The things I'll need to consider..

Lets start with the basics..

WHAT IS VOIP AND HOW DOES IT WORK

Voice over Internet Protocol uses the internet to send phone calls. We are presuming you know this part so we arent going into the tech layer on this.

Is VoIP ANY DIFFERENT TO TRADITIONAL COMMS?

With VoIP you can call any landline or mobile number from a VoIP phone in the same way you would use a traditional analogue or digital phone and in turn anyone can call you.

The key points

1

How many people do you have in your business who use a telephone as part of their everyday job?

This will be the number that is used in various options as the multiplier. It will determine how many IP phones you need, how many ethernet points in your office, how many switches in your local area network. In this scenario we will take 10 as that number.

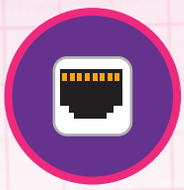
2

What level of internet connectivity do you have and will you need?

Connectivity comes in various sizes and costs. We have tried to put the various options available to you in order of costs based on the current UK market.

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Types of connectivity

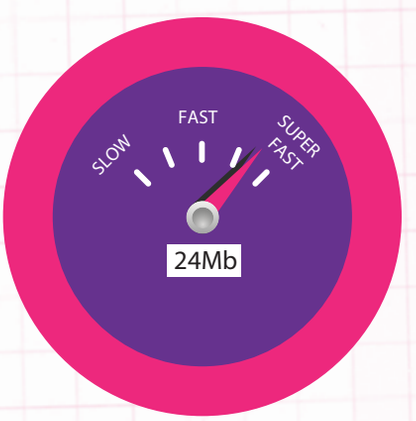


Standard ADSL/ ADSL2+	(the most common method of connectivity in the UK) - Up to 20/24Mb downstream and 1-1.5Mb upstream. It's possible to get higher on the upstream from certain providers to a maximum of 2.5Mb.
Cable Broadband	(a certain man with trains and planes and a white goatee) - Up to 120Mb
FTTC (Fibre to the cabinet)	(the future of current UK connectivity to the masses)- Up to 80Mb
Business Grade ADSL/ ADSL2+	Options on the guaranteed throughput download and upload, QoS (quality of service) and service priority are variable per service provider. Up to 24Mb downstream and 1-1.5Mb upstream. Guaranteed SLA's on resolutions if problems occur.
SDSL (Symmetric Digital Subscriber Line)	Maximum speed to 2MBits per second both upstream and downstream
EFM (Ethernet first mile)	From 2Mbps to 35Mbps
FTTP (Fibre to the premises)	Up to 330Mbps downstream and 30Mbps upstream
Wireless Leased Line	(2Mbps to 1Gbps)
Fibre Leased Line/ Ethernet Wire Line	(2Mbps to 1Gbps+)

Cost of connectivity

Type	Max Down	Max Up	Cost Level
ADSL/ ADSL2+	20 -24Mb	1 -2.5Mb	£
Cable Broadband	120Mb	30Mb	£
FTTC	80Mb	20MB	£
Business ADSL/ ADSL2+	20 -24Mb	1 -2.5Mb	££
SDSL	2Mb	2Mb	££
EFM	2 -35Mb	2 -35Mb	££
FTTP	330Mb	30Mb	£££
Wireless Leased Line	2Mb -1Gb	2Mb -1Gb	£££
Fibre Leased Line/ Ethernet Wire Line	2Mb -1Gb+	2Mb -1Gb+	£££

The thing that must be recognised and understood with the lesser costing connectivity options is that they are all based on UP TO speed options. This means that the location of your business in relation to the local telephone exchange makes a difference to the speed of connection that your business will obtain. You can check your current speed using tools like speedtest.net, but to get a really accurate reading, be sure that the device you run the test from is connected directly (not wireless) to your internet router and nothing else on the network is.



What do you use the internet for in your business

This is another vitally important question to understand. All of your online activity in your business takes a part of your internet connection and uses it. Some things use a constant rate of data, some things only use the internet when they need to and some things are hungrier to use up your connection than others. In today's world we use the internet more and more. The things we do are using cloud based technologies. These all want a part of your internet connection and the more users that are using these services the less there is to spread around.

Things like Google business apps, Dropbox, Microsoft Office 365, hosted desktop are all trying to drain your internet connection. Someone will have heard the phrase at the office, 'Is the internet running slow today?'. Well the answer is no, your business is just making more demands of your internet connection.

How many users can you get onto each connection type?

It's important to understand what level of connectivity you have currently and what you will need moving forward. As a general rule of thumb we would suggest allowing approx 80-100Kbps per call. The table below gives a suggestion to the level of concurrent calls each type of connection can handle. This is indicative only and is created based on the average usage patterns PackNet sees in the UK. In practice the level will be best determined after install.

Type	Max Down	Max Up	Concurrent Calls
ADSL/ ADSL2+	20-24Mb	1-2.5Mb	6-8
Cable Broadband	120Mb	30Mb	6-20+
FTTC	80Mb	20MB	10-25+
Business ADSL/ ADSL2+	20-24Mb	1-2.5Mb	6-8+
SDSL	2Mb	2Mb	10-15
EFM	2-35Mb	2-35Mb	10-40
FTTP	330Mb	30Mb	50+
Wireless Leased Line	2Mb-1Gb	2Mb-1Gb	10-100+
Fibre Leased Line	2Mb-1Gb+	2Mb-1Gb+	10-100+

What equipment do you need?

The basic network requires, a router to handle the internet connection, a switch to multiply the amount of end points and IP phones. IP phones can come as physical devices (hard phones) or software phones that work as an application on your PC/MAC/Laptop (soft phones)

IP Phones

As with all things you can spend a little on phones or a lot. Know what your budget is. The good thing about IP phones is that even at the starting end the majority of functionality is available. Most companies need a phone to do the thing it was intended for, 'making phone calls'. The increase in phone costs usually come down to physical features being added to the phone - bigger displays, colour displays, more buttons, more buttons with flashing colours. If you want the bigger flashing phone be sure that it's not just another status object in your office, despite what the salesman tells you.

We can't cover all the phone vendors in this guide but here are the ones we sell most of and that offer good value for money in our opinion;

Vendor	Models	Cost Level
snom VoIP phones	710	£
Yealink	T20PN, T22PN	£
snom VoIP phones	720, 370	££
Yealink	T26P, T41PN, T42GN	££
snom VoIP phones	760, 821	£££
Yealink	T38GN, T46GN	£££

What equipment do you need?

Network Equipment

When moving from traditional comms to hosted telephony/VoIP or VoIP is your first option, you are increasing the number of devices that will be connected to your local area network. In the model of a 10 user business let's look at what will usually be in place.

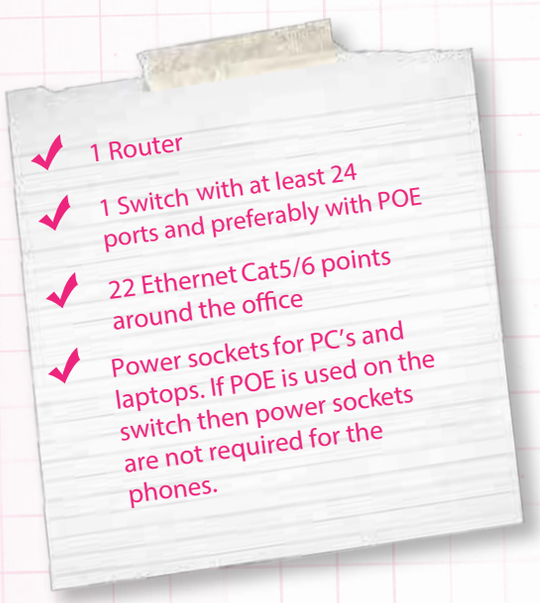
1. **PC's & Laptops**
   Wired via ethernet cables and wireless (10 wired/wireless devices)

2. **Printers**
   (1-2 devices)

3. **Servers**
   This is decreasing with the advent of cloud based technologies but it still applies to a lot of businesses (1 device)

4. **Phones**
   These if traditional will not take up space on your LAN at present but when moving to VoIP you will be adding 10 new IP devices to your network.

If we take it that each person will have two devices (PC or Laptop & Phone) and there is also one or two printers then we know that the following is required.



Infrastructure notes

When building your infrastructure try to add devices that will last longest and reduce costs in other places. A good example of this is using Power Over Ethernet (POE) switches.

Most IP phones can now be powered via an ethernet cable connected to a POE Switch. This in turn can reduce the number of power points that you will need around your office.

What equipment do you need?

Hard Phones or Softphones

There are pros and cons to this decision.

Hard Phone - Pros	Hard Phone - Cons
Reliability - calls can be made irrespective of PC being in place	Cost
No hidden costs	Management of physical devices
People prefer physical devices	Training
Not locked into a specific vendor. As long as the phone supports SIP you are good to go	Too many buttons can cause problems for users



Hard Phones

Softphones



Soft Phone - Pros	Soft Phone - Cons
Cost	Audio quality
Easy deployment	Management of physical devices
Software lasts longer than hardware	Software may require paid for upgrades
Reduction in ethernet points required	No handset or speakerphone
Takes up no desk space	Equipment costs of headsets

Number Portability - Can you keep your current numbers?

The short answer is yes. Moving numbers from one provider to another in the UK is called 'number porting'. This process required your new ITSP to make a request to your current Telecoms provider to have the numbers repointed to their network. This is handled via Ofcom's nominated third party which in the UK is the British Telecommunications porting desk. Numbers that can be ported between providers are geographic numbers (01, 02) and non-geographic (03, 08). Porting can either be very straightforward or very time consuming.

Good points to know before porting your numbers

1. Find out who your current provider is.
2. Identify all the numbers that you have and how those numbers are delivered.
3. Are they analogue or digital?

Hmm, what does this mean?...

Analogue

These are standalone copper phone lines. This is what most people will have at their home. They are commonly used for bringing a connectivity product into your business and then also may have your fax service joined onto it.

10101010101010101010101010101010101

Here are the answers.

Digital

Where more lines and numbers are required then the traditional method for delivery is via digital lines. In the UK this is ISDN. ISDN comes in standard line size quantities.

ISDN2 (2 channels up to 8 channels), ISDN30 (up to 30 channels).

Identify what those numbers do. This is important if you have broadband or some connectivity product associated to a number. Remember if you port a number that has a connectivity associated to the line, the connectivity product will be automatically disconnected.

Do you need to keep all the numbers that you have?

You may want to remove some of the numbers you have. Tell your new provider that some numbers can be removed from your account during the porting process. These numbers will then be returned to the national number pool or the provider will reuse them with another client.

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What are the benefits of VoIP for any business, not just those in the SME market?

The world of telecommunications and how businesses engage with both their customers and internally is ever evolving. Having a telecoms platform that can keep you one step ahead of the game, or for some just in the game is becoming ever more critical. Here are some of the points that we hear on why a business wants to move to a VoIP/hosted telephony solution.

Reduction in costs	VoIP is cheaper than traditional services both in calls and fixed charges.
Free Calls	A misconception is that VoIP means Skype and that everything is free. This is not the case, but you should always benefit from free calls within your business and within providers telecoms network.
Functionality	Hosted platforms have functionality that previously was either an expensive optional extra or a complicated setup. Good examples of this are voicemail to email or IVR (Interactive Voice Response) that are now standard features of VoIP/hosted telephony.
Business Continuity	Well if the connection goes down or the building burns down my calls are still being answered, and because the management interface is online you can make changes with near real-time effect.
Scalability	Traditional comms providers tied clients into long term fixed costs contracts that didn't take into account the fluid nature of some businesses. With hosted you can scale up your users when times are busy or seasonal and scale back when you are not.
Management	Online access to management, and the ability to setup services in short times mean you can respond to the needs of your business and your customers.
Time	Time, the thing that never stops moving forward and can seem to be either very well used or allowed to drift away. When it comes to delivering VoIP/hosted telecoms solutions then time becomes your friend. The time to set-up and have a VoIP solution running can be as little as 24/48 hours. A comparable traditional comms system using either analogue or digital lines can start at delivery within 7-10 days (analogue) and go right up to 60+ days (digital).
Geography	VoIP doesn't care about location. As long as you have an internet connection you should be able to benefit from the advantages of VoIP. This makes VoIP ideal for home/remote/mobile workers. If you have a business with ten people in it based in an office or 10 people scattered across all the continents then VoIP joins you all together as one entity that can collectively benefit.

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Conclusion

VoIP is the solution that business is now looking to, to provide the communications infrastructure for the 21st century. Traditional communications platforms still have a place but they are becoming less relevant in today's markets.

If VoIP/hosted telephony is not the solution you move to immediately it should be one your horizon. Your business should analyse what the demands will be upon it both now and in the near future.

Once you have understood your needs, then chances are that VoIP/hosted telephony will give the best return on investment both in terms of infrastructure but more importantly efficiency and longevity.

Get in touch

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