

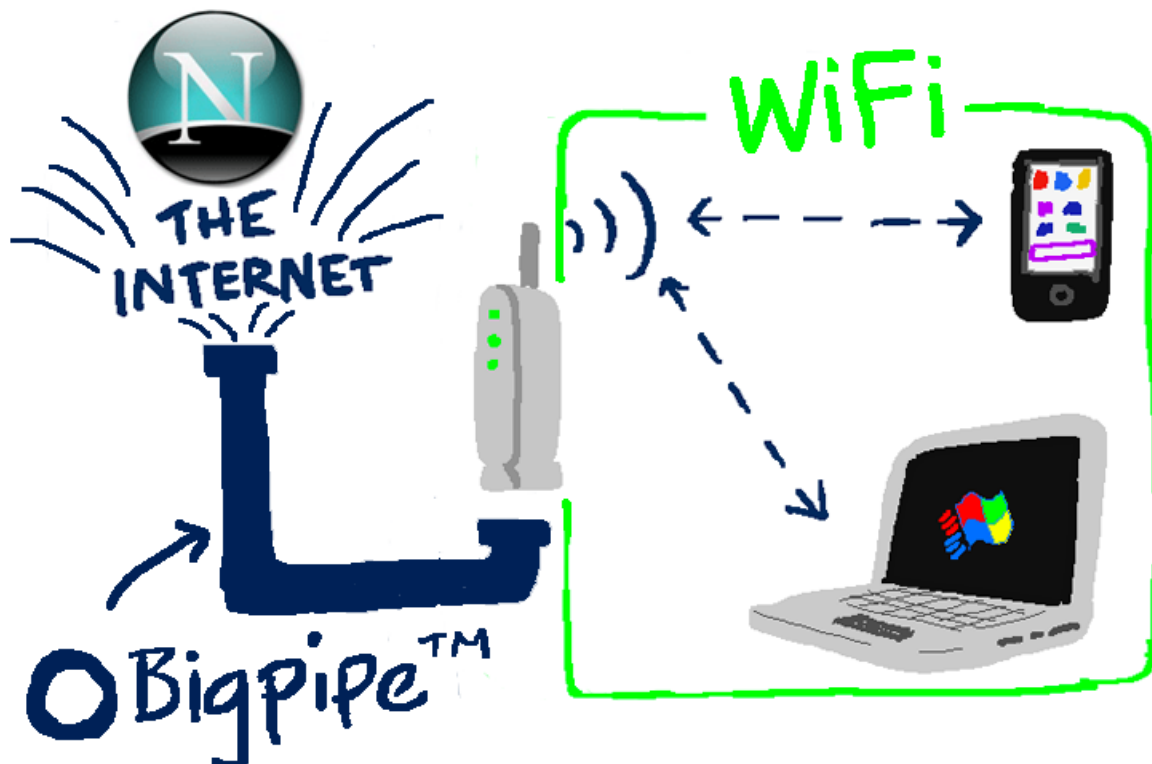
# The Bigpipe Big Guide to WiFi

One of the things we hear often from our customers is that their WiFi is not working. We get a lot of messages like this:

Palmerston North here, my hard wired stuff like PlayStation work but lap tops and Mobiles don't even pick up our router anymore.

It's understandable why people get confused. To many, WiFi is the internet. It's the technology that your phone, iPad, and lots of other devices use to get online. But, often, "WiFi" isn't the same as "My internet connection." In the example above, the problem almost certainly has to do with the WiFi, and the Bigpipe connection is fine. It's always tough when we get one of these messages because it's difficult to explain that we can't usually affect how well your WiFi works. We just supply the connection. Put more simply:

**WiFi is not the internet.**



Think of Bigpipe as a water company – one with really big pipes, naturally. We deliver the water to your property and take care of the water meter. Nice and easy. WiFi is like your internal plumbing and other things that allow you to get at the water – taps, faucets, showers, and so on. And laptops and iPads and smartphones are like cups and kettles – things that allow you to get at the water and use it.

The main difference between us and the water company is that if there's something wrong with your WiFi, we'll do what we can to help you fix it – but we can only do so much. Fortunately, we know a bunch of tips and tricks that you can use to get your WiFi as good as it can be.

## **What if I've got a Bigpipe modem?**

If you've got a Bigpipe modem, it's a bit different to bringing your own modem to our service. As you've purchased it from us, you're entitled to a refund or exchange if it turns out to be faulty because of a manufacturing defect, and this includes faulty WiFi. We're also able to get a bit more in-depth with troubleshooting. Not to mention that it should "just work" right out of the box – the Bigpipe modem comes pre-configured for our service, no matter what sort of connection you have. However, we almost always find that, no matter what sort of modem you've got, a problem with the WiFi comes from one of the causes outlined below – and the fix should work too ☐

### **How do I know if the problem is with Bigpipe or my WiFi?**

The easiest way for you – and us – to tell whether a problem is related to your WiFi or to your Bigpipe connection is to test using a wired connection. If the WiFi doesn't work, it could be any number of problems. If a wired connection doesn't work, chances are the problem is on Bigpipe's end – and it's much easier for us to diagnose and fix it.

# How to get your WiFi working well

## Everything in its right place.



This is what WiFi looks like to Superman.  
Poor Superman.

WiFi works using radio waves. Anything that emits or gets in the way of radio waves – for example, TVs, microwaves, other routers, cordless phones, walls – can interfere with your WiFi connection. For best results, place your router carefully. Make sure there are as few walls as possible between your devices and your router. Don't put your router with other electronics like your TV. Give it its own special, privileged spot high on a shelf, like you would a valuable painting, or a cat.

And, if you can, try and place it somewhere in your house that is closer to where you like to use the internet. Either in the middle of your house, or, if you like doing a lot of streaming to a big screen (and let's face it, who doesn't?) then place it in a good spot with line of sight to your streaming device.

## Change the frequency

# FREQUENCY ASKED QUESTIONS



5  
GHz



Back in ye olden days, about five years ago, every WiFi enabled device used the 2.4 gigahertz frequency. Now, in our shiny new modern era, most WiFi devices can make use of 5 gigahertz frequencies – and so they should. 5 GHz is *almost* always better.

## Giga-what?

When it comes to modem frequencies, you'll see the term "gigahertz", or GHz, a lot. Don't let the jargon hertz your brain – all this means in practical terms is that 5 gigahertz tends to be better with modern devices.

If your modem or devices support 5 GHz, use it whenever possible. While 5 GHz comes with a few caveats – some older devices don't do as well on 5 GHz WiFi – it tends to be faster, and having more bandwidth means there's more room for more devices to connect at once.

Most modern modem/routers output 2.4 and 5 GHz frequencies simultaneously, by default. You can set the different frequencies to have the same login details, and then all you need to do is make sure to connect your iPad, laptop or phone to the 5 GHz network instead of the 2.4. Easy!

## Make sure your network is secure

If you haven't set up a wireless password for your WiFi network, do it. DO IT NOW.



If you don't have one,  
get a WiFi password  
now! Make your dreams  
come true!

Why? Because if you have an open wireless network, everyone can use it. And if you have an open network, we can guarantee that everyone *is* using it, right now. Your weird neighbours are using it to access websites with names that rhyme with "Horn Pub". German tourists in the van down across the road are using it to have long Skype conversations in German with their German friends and German family and German Shepherds. Hackers are using it to hack into the mainframes and turn your computer into a mindless zombie slave. Of course, if you've got Bigpipe, you don't have to worry about data caps, (and if you don't have Bigpipe, you should [get it here!](#)) but if there are a bunch of strangers using your WiFi, it can make still your connection really slow. Set up a username and password for your WiFi network. Make it a good one. Or your connection will be terrible.

## Change the channel (advanced)



If you've been having WiFi trouble and you're a bit more tech-comfortable than the average bear, it's a really good idea to look at changing the channel on the router. Within each frequency band (2.4 and 5 GHz) there are a number of channels that the router uses to communicate with different devices on the network. If too many devices are using the same channel, you'll get interference. How to fix it? Simply log in to your router and change the channel.

Of course, this isn't necessarily simple, but it can definitely be worth having a go at figuring it out. The best way is probably to Google "change router channel [+ your router model name / number]". [There's a good how-to guide here.](#)

## Get a better modem/router



Bigpipe is a BYO modem service, and most modems will work fine – but let's face it, if your modem is more than 3 years old, it's probably getting a bit crusty. So why not get a new one? [You can get some great modems here.](#) We've also started offering the Bigpipe Modem, which you can buy from us for \$199 – or get it half-price at \$99 if you're a new customer, or you're changing Bigpipe plans. To extend our analogy from

before, it's like if your water company threw in a kick-ass kettle that made 500 cups of tea a minute. And if something ever does go wrong with your WiFi, it's a lot easier for us to help you fix it.

**Whenever possible, don't use WiFi**

Old School  
  
is best  
school

We get it – WiFi is convenient. But it's also a huge pain. Because it's just radio waves, it's vulnerable to interference from everything from other WiFi users to solar flares. Whenever you have a device that can accept a wired (Ethernet) connection from your route – PCs, game consoles, many laptops – use it. It's nearly always faster and more reliable than WiFi.

## The End...?

If you're having trouble with your WiFi in the future, try

these tips first. We've also got a bunch of other ways to optimise your connection at our [Bigpipe Big Guide to Improving Your Broadband](#) If you've got any tried and true tips and tricks for getting WiFi working (microwaving your router or deleting System 32 don't count) feel free to leave them in the comments!

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# Good Video Streaming Everyone!

Here at Bigpipe Towers we love statistics, charts, and techy stuff of all kinds. So when Netflix released their stats it was a day of wild celebration. Why? What did we learn? That **NZ has good infrastructure for video streaming** – and it's getting better all the time!

Netflix – who you may have heard of – publishes stats on average speeds that different ISPs get to Netflix servers.

In their own words, this is how they calculate this:

*The Netflix ISP Speed Index lists the average prime time bitrate for Netflix content streamed to Netflix members during a particular month. For 'Prime Time', we calculate the average bitrate of Netflix content in megabits per second (Mbps) streamed by Netflix members per ISP. We measure the speed via all available end user devices. For a small number of devices, we cannot calculate the exact bitrates and streaming via cellular networks is exempted from our measurements. The speed indicated in the Netflix ISP Speed Index is not a measure of the maximum throughput or the maximum capacity of an ISP.*

Translation: This data, when taken at a national average



level, is probably a pretty good representation of *overall* how good the infrastructure in that country is. And [New Zealand is doing pretty well](#).

So whilst it's *not* very reasonable to compare ISPs in NZ using the data (see bottom section for the reason why), it is **quite** reasonable, we think, to compare NZ with, say, Australia.

So, with that explanation of the data out of the way, how does NZ stack up vs other countries?

We downloaded [the global data](#), and what do you know, **NZ is sitting at joint 7th out of 32 countries** for average throughput! Not bad, eh?



No measurement of broadband speed is perfect, of course, but what's interesting is that other comparisons (like those from the connection monitoring tools Akamai and Sandvine) often place NZ somewhere near the middle of the pack when it comes to performance, whereas using this metric, we are in the top 25% of countries.

Other notable country rankings:

**USA** – ranked 19th

**Australia** – ranked 16th

**UK** – ranked 8th

## **Why this (probably) shouldn't be used to compare ISPs in NZ**

For the USA, where different ISPs usually use different underlying infrastructure that they each own and manage individually, the Netflix rankings are a pretty decent way of comparing how they perform against one another.

However, for NZ, where most ISPs are using the same underlying infrastructure (owned by Chorus for the most part), the differences between the ISPs is mostly reflected in the fact that they will have different proportions of customers on high and low speed plans that generally reflect the infrastructure available in that area.

Put another way: if an ISP has a lot of customers on ADSL (slower) and few on fibre (faster) their average speed (and ranking) will tend to be lower. At Bigpipe, a pretty high proportion of our customers are on ADSL connections – and we know for a fact that our ADSL connections do extremely well with streaming video, in the scheme of things. For instance, YouTube also collects data on streaming speed over time, but it presents data segmented by connection type as well as ISP – and, excellently, Bigpipe ADSL is HD-verified!



If the Netflix data was also segmented by connection type – the average streaming speed for each ISP on ADSL, VDSL or fibre – then it would get *really* interesting, because it'd tell you exactly how well each ISP performs at the connection level.

But because it's an average of all connection types, the differences between the ISPs *doesn't* really tell you that one ISP in NZ is 'better' or 'worse' than the other, it's just down to the underlying technology their customers have, and how that mix changes over time. So at any given house, based on this data, you *cannot* say that one ISP will perform better than another for Netflix assuming you are not changing technology at the same time.

For example, Snap (now 2Degrees) was also one of the first ISPs to launch UFB and VDSL, and has experienced a lot growth since then. So it's pretty likely to have a very high proportion of customers on these higher speed plans, using

quite modern modems with decent wifi, which will skew their average throughput to Netflix up a fair bit.

Spark, on the other hand, being the incumbent, has a very high proportion of the 'rural' market – meaning most of the customers who live with ADSL1 will be with Spark, and quite a lot of them will have very old modems with poor wifi that they got when they first got broadband 5+ years ago. This will skew their average down a bit. Nothing to do with Spark as an ISP, just the nature of the customer technology mix.

Most ISPs have improved their average speed over the past few months. This likely reflects the change in their customer base as the nationwide fibre rollout progresses and more and more people get UFB and VDSL (and also better modems) which brings the average speed up (as well as a one-off adjustment for putting in caching etc).



Finally, when comparing ISPs, note that the speed difference between best and worst isn't really *that* much anyway (3.92Mbps for 2Degrees at rank 1 vs 3.47 for Trustpower at bottom rank – a fair bit below the next 'worst' at 3.70).



We reckon these rankings are a good indication of New Zealand's improving internet situation – and that it's getting better all the time.

Your thoughts? Let us know in the comments!

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# Bigpipe's Big Guide to improving your broadband.

By The Bigpipe People

@BigpipeNZ

At Bigpipe, we do everything we can to make your broadband experience as good as it can be, but we thought it would be a good idea to share some tips on the things you can do in your own home to help you improve your own broadband experience.

**Choosing the fastest possible broadband plan in your area** so you can get the most out of what is available to you. with Bigpipe, our 100Mbps UFB plan is only \$79, that's the same price as our most popular ADSL2 plan. To check what broadband technology is available in your area, use the address checker on our site (link to homepage) to see what plans are available at your address. If you can get UFB at your place, we highly recommend going for that.

UFB Starter	UFB Pro	UFB Elite
<b>\$79</b> /month	<b>\$99</b> /month	<b>\$129</b> /month
<b>ENTRY LEVEL UFB</b> The next step from VDSL	<b>MOST POPULAR</b> Fastest download speed. Best plan for most people.	<b>SUPER SPEEDS</b> Fastest download speed you can get, with upload speed to match. A plan for people who live the internet.
100 Mbps DOWNLOAD	200 Mbps DOWNLOAD	200 Mbps DOWNLOAD
20 Mbps UPLOAD	20 Mbps UPLOAD	200 Mbps UPLOAD
<b>UNLIMITED DATA LEAVE ANYTIME ONLINE SUPPORT</b> Available in parts of NZ	<b>UNLIMITED DATA LEAVE ANYTIME ONLINE SUPPORT</b> Available in parts of NZ	<b>UNLIMITED DATA LEAVE ANYTIME ONLINE SUPPORT</b> Available in parts of NZ

Bigpipe's UFB plans, available in Auckland and Wellington.

**Pick a decent router**, this small piece of equipment is essential in contributing to your home's broadband experience,

especially if you have lot of devices accessing the net at the same time. You wouldn't buy a new 64" LED TV and place it onto an old, wonky and unsuitable TV stand, so why have broadband and use a really cheap router? Ensuring that you have a decent router with updated firmware will optimise your Bigpipe broadband experience. The expected lifespan of a cheap router is 1-3 years whereas if you invest a little more, you can expect your router to last you 5+ years. Bigpipe recommends the [Netcomm NF8AC](#) as this router is suitable for all broadband plans including UFB all the way up to 1Gb speeds, so you're really investing yourself in the broadband of the future.



The Netcomm NF8AC router

**If you have ADSL or VDSL, ensure that your home wiring is in order** for optimum broadband connectivity in your home. Older homes especially often have wiring not optimised for delivering good broadband. Over time, wiring in your home can corrode or get damaged, this corrosion seriously inhibits the maximum speeds that you can obtain from your connection. If you notice that your internet sometimes slows down and can cut off from time to time, we recommend you get a technician to have a look at your internal wiring and fit a 'master filter' to bypass any bad wiring. As your ISP, Bigpipe can organise this for you, although there is a cost of around \$200.



A master filter

**Don't allow your neighbours to piggyback off your network.**

This is important, if you don't have a secured password on your home network you open yourself up to people leeching your connection, or, worse, using it for illegal purposes for which you might get the blame! Most routers come with the wifi connection already secured with a default password, but if your doesn't just follow the manual to make sure you turn it on and set a secure password.



Members of the public leeching off of Apple's free Wi-Fi outside one of their stores.

**Placement of your router around your home is very important.**

If you have your router placed in an unsuitable location in your home, you're instantly limiting your broadband speed capabilities. It is also best to keep your router away from

any electrical devices in your home that could interfere with the Wi-Fi frequencies that your router omits. When placing your router somewhere in your home, think about the most central place, or the place closest to where you want to be using the internet the most. The fewer walls/floors between your device and the router-the better! Here's an example of how poor router placement in the corner of the house inhibits wifi signal strength.

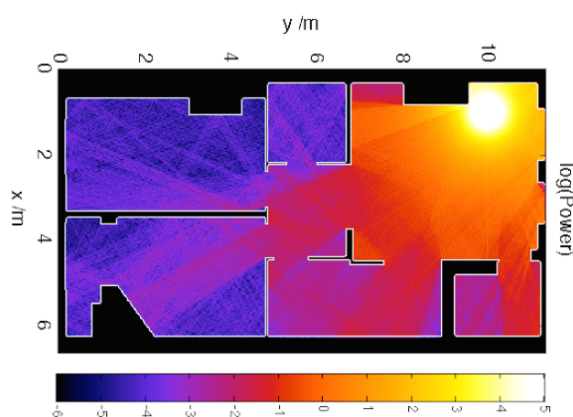


Diagram showing the Wi-Fi signal around the home and how the infrastructure of your home inhibits the signals strength from room to room.

Also, if you find your Wi-Fi speeds are much lower than expected, it could be your neighbours Wi-Fi interfering. Try logging into your router and changing the Wi-Fi channel to see if that improves things. Try channels 1, 6 or 11 for the best chance of avoiding interference.

**Choose an ISP that doesn't throttle your speeds.** Some ISP's throttling their customers speeds to keep their costs down. This occurs during peak usage times on their networks (usually between 4pm and 10pm). Bigpipe believe in providing enough bandwidth for all our customers to use, all the time, so we don't throttle our customers speeds and we've got the evidence to prove it. We're the top performing download ISP in New

Zealand during peak times. See our performance as tested in the [TrueNet report](#).

**Manage your auto-updates** and see when your devices are scheduled to update their own software. You don't want to get home in the evenings ready to stream your favourite series online and to then realise that your laptop needs to update a million programs at once. Also, ensuring that other devices around your home aren't running programs in the background will help you to ensure that only the devices you're using are what is connected to your network.

**Spread your traffic.** If you have housemates who do a lot of downloading, try and get them to do it overnight or when other people aren't trying to use the internet. Sharing is caring.

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# Kiwis need a better deal on internet

By Simon Moutter

*Chorus' latest half-year financial report shows it spent just \$28 million on copper network capital expenditure, less than a tenth of the \$297 million spent on fibre capex.*

The Commerce Commission will shortly make a decision that will have a big impact on how much we all pay to use the internet or landline.



It will be setting charges that internet service providers (such as Spark, Vodafone and Slingshot) are required to pay the monopoly access provider (Chorus) for internet and landline connections over the copper network.

The stakes are high: a change of just \$1 per month per line in charges translates into \$100 million of value over the five-year regulatory period, and the commission is proposing to increase the key wholesale access charge for a copper line by \$5 a month.

That's a transfer of half a billion dollars from internet and landline customers to Chorus.

If you're among the 90 per cent of New Zealanders who rely on the old copper network for their internet or landline access, then around half what you pay in your monthly bill to your service provider already ends up with Chorus.

So, the Commerce Commission has a major influence on the price you pay.

As happens too often in complicated regulatory processes, the voice of the consumer has not been heard much in this process.

That's why Spark New Zealand launched our BeCounted campaign. We wanted to explain to New Zealanders what makes up the cost of accessing the internet and to give them an easy way of sending a submission.

To date, more than 50,000 people have visited the website and sent in submissions. This has greatly exceeded our most optimistic expectations and shows how important better value access to the internet is to New Zealanders.

Until late last year, the commission said it would set the Chorus charges about \$10 a month lower than previously.

This would have been a great outcome for consumers, and it prompted a price war among service providers in anticipation

of the new charges taking effect.

The result was cheaper, faster plans, heaps more data (including new unlimited data plans), great discounts on associated services and investment in new services such as Lightbox.

However, in December last year the commission surprised everyone by backtracking on its previous position and proposing charges go back up by about \$5 a month – and refusing to rule out backdating the new charges when they finally come into effect later this year.

What's more, it said this \$5 increase would also apply to basic landline connections that did not have internet access. In response, Spark and most other service providers recently had to increase their prices by a few dollars to pass this on.

Our analysis shows the commission's proposed wholesale charges are almost 80 per cent higher than the median of comparable countries and 60 per cent higher than the next highest country (Germany).

That works out at up to \$180 more a year for every internet and landline customer.

On the flip side, it's important to remember that as a country we are already paying Chorus to replace its copper network with a fibre network, through the Government's UFB and rural broadband initiatives.

These subsidies should actually mean that Chorus needs less funding to run its legacy copper network than its peers in comparable countries, which are operating and replacing their networks without taxpayer subsidies.

By way of illustration, Chorus' latest half-year financial report shows it spent just \$28 million on copper network capital expenditure, less than a tenth of the \$297 million

spent on fibre capex.

We strongly believe the onus should be on the commission to explain why, in terms that ordinary consumers can understand, New Zealanders should pay more. Unfortunately, it has so far avoided doing so.

We accept this is a complex process, but it boils down to whether the Commerce Commission is prepared to act in the best interests of consumers and ensure Chorus monopoly charges are not way out of line with the rest of the world.

**Simon Moutter is the managing director of Spark New Zealand.**

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# UFB, coming in like a storm!

**By Felix Lee**

Most of you should by now have heard of the ultra-fast broadband project or more commonly known as UFB. If you haven't it's the government's plan to bring superfast fibre internet to all the towns and cities in New Zealand. This means almost everyone living in this country would be able to access world leading internet by 2020. There are a few exciting recent developments which I will share here.

## **Build progress**

The latest figures as at March 31 shows that UFB network is 46% complete, it has been rolled out to more than 618,000 users. This means the project is actually ahead of schedule

and on budget which is pretty impressive.

## **Gigabit speeds**

You can get gigabit UFB right now if you live in the central North Island, or Dunedin. Other areas are set to get it soon. Whangarei should get it this month, and Christchurch would be later this year. The rest of the country though, is covered by Chorus. Bigpipe currently have UFB in Auckland and Wellington. Chorus have said that they would roll it out nationwide within three years, but this could be sooner. We're on track to become one of the first countries to have gigabit available nationwide!

Just imagine the possibilities we can do with this; SuperHD TV, 3D printing, virtual presence, fully automated security and lighting systems all controlled by your phone via the internet. It'll also be a boost to the economy, we can export our technology all around the world and don't have to rely on selling milk powder any longer.

And there's no need to worry fibre will run out of capacity any time soon. You can put up to 96 different colours of lasers down a single fibre, each colour can support 100Gbps, and each house gets two strands of fibre. That's crazy amounts of bandwidth, and should last us a few decades at least.

## **Consents for UFB**

One of the problems with getting UFB installed is that if you live down a shared driveway, you will need consent of everyone who share that driveway before you can have fibre connected. If one of your neighbours don't agree, then sorry you're not getting fibre. The government is currently looking at changing the law to make this easier. All the affected owners are notified of a pending install, and if they don't object then Chorus can go ahead. This should make the process easier and faster.

Another tricky and time consuming consents type is multi dwelling units such as apartments, townhouses or duplex's. Also known as MDU's, a number of consents are required for installation to occur. Body corporations, building managers, legal owners and agencies are all contributors to the consents process. The reason why this takes so long is due to gathering the consents and having everyone on the same page. Without all consents gained, Chorus cannot proceed with installations.

Although this is rare, most people, to include those tricky building corps are fully aware that UFB is the next generation of broadband in NZ. As copper lines begin to feel the strain, UFB is the only way forward.

### **UFB expansion**

The coverage of UFB has recently been expanded from 75% to 80% of the population, so this means every town with a population exceeding a few thousand will be covered by UFB. The exact list of towns this cover would be announced later this year. The expanded UFB would be pretty similar to the existing UFB rollout, the main difference is that users may have the option of choosing to connect using G.fast. This is where the fibre is connected to the kerb of each house, then the existing copper cabling is used to connect the rest of the way in. This means there's no need to dig up the driveway to install the fibre, should save a big of hassle.

Us Kiwi's are all collectively contributing \$1.5 billion to the UFB project as taxpayers, so if it is rolled out to your place, get it! Remember to check out Bigpipe's amazing no-term-contract unlimited UFB plans! Check your address [here](#). We now cover Wellington in addition to Auckland, and we hope to be cover the rest of the country soon!

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# 2015, the year of wearable tech!

By Niall McCarthy

A lot of you tech savvy folk will already be familiar with the term 'wearable tech'. For those of you who aren't, the term basically means technology you can wear! Wearable technology has been on the market for years. [Garmin](#) have had wearable GPS watches and likes for years now. [Garmin](#) however a brand aimed at keen outdoorsy, extreme sports and mountaineers.

Wearable tech isn't just for your wrist or [Google Glass](#). In London, a creative agency named [Studio X0](#) headed by a Nancy Tilbury have been working on creating wearable tech and smart apparel for years now. What started off as once-off commissioned pieces for the likes of The Black Eyed Pea's and Lady Gaga's, has now developed into working with athletes and international sporting teams. AC Milan are one of the most technologically advanced soccer teams in the world. New Zealand's very own All Blacks have also trial the wearable technology.



[Tiny sensors in the wire are fitted around the shirt and connect to the hub of the](#)

## MiCoach system known as the 'cell'.

[Adidas](#) have embraced these new technologies and integrated real-time performance sensors into the professional athletes [Adidas](#) clothing. Sporting coaches can now monitor each player's performance measuring; heart rate, blood-pressure, respiratory stats, pitch performance and techniques. The integrated technology isn't invasive and doesn't inhibit the athletes performance. It is the first time that sports clothing, digital technology and science have worked as one to develop one outcome.



[Adidas project manager Matt Hymers using the MiCoach software during athlete training.](#)

The connection between wearable tech and smartphones only really kicked off in the past 5 years and 2015 is set to be the biggest year yet. To begin with, smart watches/wearables didn't synchronise seamlessly with smartphones compared to today. I wonder if its only a matter of time before smartphones are sold accompanied with a wearable bro in the box?

With the launch of the [Apple Watch](#) this year, no doubt competitors are anxious to see the carnage unfold on the day of its release. Like almost all of Apple's products launched

over the past few years, the media coverage will be extensive. Like it or loath it, Apple's launches have proved to get the most attention out of all the competitors on the market.



[Apple Store lineup ahead of one of their product launches. Photo by Oli Scarff/Getty Images](#)

With all these wearables on the market, in particular smart watches, it's hard to choose the best one. So Bigpipe have created a list of the current and most popular smart watches currently/due to be released on the market in 2015. Vote in our poll below for your favourite smart watch!





1



2



3



4



5



6



7



1. [Samsung Gear](#)
2. [Samsung Gear S](#)
3. [Moto 360](#)
4. [LG G Watch](#)
5. [Samsung Gear Live](#)
6. [Asus ZenWatch](#)
7. [Apple Watch](#)

[Take Our Poll](#)