



SD-WAN: THE FUTURE OF CONNECTIVITY?

By Dan Sodergren, digital marketing and technology expert

Stephen F. DeAngelis said it best when he noted half a decade ago:

“By 2016, **89%** of companies expect to compete mostly on the basis of customer experience.”

Now in 2019, this is our reality.

But are companies doing enough?

A company's competitive difference could boil down to their customer's experience of the brand. This is mainly seen by the customer through the prism of technological application. Most of which is a digital experience. **How you are seen (or felt) is often how much a customer enjoys their experience of your product or service.** Don't believe me? See the winners and losers in consumerism over the last decade. Kodak compared to Instagram, Blockbuster compared to Netflix etc. This is why digital transformation is a key driver for companies that want to thrive. Not just survive.

But is digital transformation a reality or a lofty aspiration?

Is it our Enlightenment? It might sound esoteric, but as someone who teaches about digital transformation, I am interested in whether digital transformation can be triggered *in* a company or *by* a company. Can we find that trigger? Could that trigger be a new piece of technology? And if so, what piece might that be?

Could SD-WAN help your company's #DigitalTransformation?

Could SD-WAN be the future of connectivity for your business? And more importantly, why is that important? For a while now, I have worked with companies around #DigitalTransformation and thinking about **what the next Industrial Revolution means for the future of work**. This future worker will be powered by other technological trends like 5G, AI, AR, VR and cloud storage. They will need a new way of working with new pieces of technology underpinning their work.

For me, these technological triggers are implicit in digital transformation. With their deeper power coming from changes to a business's culture. And also how the business works together. The piece of technology changes the business's point of view, **creating new opportunities that come from that cultural and digital shift**.

The calculator changed bookkeeping. Microsoft Excel changed financial directors, who in turn changed accountancy. This larger change included deeper sociological and company culture changes too. Whether the technology is the real trigger or not, it's the classic "chicken or the egg" paradox. Just like that paradox, the real answer is complex. But what we can all agree on is that you need BOTH. The evolution of nature creates the chicken; the evolution of business creates winners.

What you need in business is BOTH – the right people and the right technology.

Yet in the real world, new technology adoption is often hated by people. Often because they do not understand the way it works. Sometimes people may understand it, but they don't like the implications of it. Sometimes people are conscious of that bias and sometimes they are not. From the Luddites of ages past to those wishing to stop mobile phones from going into schools, **human beings don't like change that much**. We need a LOT of things in place to go through the process of change. We have the same problem with our infrastructure as well as our thought processes.

In the UK right now, people are arguing about change – especially when it comes to our transport system. So not just political change, but real change, with real things that need improving. **For example, our creaking UK railway infrastructure; why have we let it become so archaic? Are we investing enough in it?** These are real changes needed. What we have to realise is, that as a country, the UK built some of the first railways. Some of the first trains. How? Well, we had the Victorians. The belief systems of the Victorians powered not only the Industrial Revolution, but the growth of intercity connections, of big bridges and big projects. The concept of building things for the public good, even the idea of the holiday destination, are all Victorian. Before we had railways, it was difficult for people to travel en-masse for anything, let alone work, play or holidays. New thinking created new opportunities thanks to the adoption of new technologies.

Today, we have to look to them for our inspiration and learn from the lessons of the past. Unless we invest in our technological infrastructure, we might continue to suffer from late trains, aging carriages and disgruntled passengers. And when we look to other countries for inspiration with their better transport systems, we might find that because we built our systems first, we look terribly old-fashioned in comparison. In the end, **the UK suffers from early adoption of hardware**, which degrades over time. A classic problem. This is NOT the same with updatable software... **the future will be software dominated and software defined**.



What can we do for the future?

As I've mentioned a couple of times on the BBC, the UK's digital infrastructure needs updating – especially after travelling to places like Hong Kong and Malaysia. As a country, we do not do well in the standings for business broadband speeds. And this isn't good enough. **We ALL need to invest more – both public and private sectors; the government and businesses working together.** Not just for competitive advantage, but for a real understanding of how intrinsically important our underlying technology is. With 5G just around the corner, we have to all start looking at what we can do as business owners, making a difference to what we have now.

Whether you are in the public or private sector; whether your trains are good or bad, the next evolution of business is going to need a technology that can handle a LOT of data. **And this is why SD-WAN is more important than many people think.**

Is SD-WAN the future of connectivity?

Simon Sinek¹, world-renowned business consultant and author coined the expression:

“Always start with your why.”

This saying, like the buzz-phrase 'digital transformation', has become a mantra for consultants and progressive businesses everywhere. Especially in tech. And whether you believe the statement or not, when you think about our why, it is always needed. So why change from what you already have to something new? Why use SD-WAN first? Bear with me...

One of the key things to realise is that SD-WAN is software-defined (hence the SD) which brings into play the simple fact in the battle of hardware vs. software: software eats the world. Software wins. And whilst the underlying technology is also important, **if you can redesign your infrastructure to become more efficient using software – why wouldn't you?**

This is crucial as technology is more and more important. Data is the new oil, and how we ship this new oil is crucial to the success of this new business opportunity. Don't believe me? Think about the following companies. Do you think they use a creaking infrastructure? Do you think they struggle to handle the amounts of data their customers create? Do you think they are not making the most of the new digital revolution? Their increased company valuations this year say otherwise:

facebook \$94 billion

amazon \$76 billion

Google \$66 billion

Apple \$60 billion

Microsoft \$39 billion

NETFLIX \$38 billion

Data, data everywhere. Especially in the cloud

As software eats the world, so the cloud and SD allows the abstraction of the control – from the physical infrastructure. And this results in a more agile system with tangible economic benefits. Which is why Gartner analyst Andrew Lerner² is reported to have said in America that “SD-WAN can be up to two and a half times less expensive than a traditional WAN architecture.” The reason being is that SD-WAN goes on top of the existing infrastructure, providing packaged security, routing, and traffic prioritisation in any network it’s applied to. Which in America saves them money due to a different set of circumstances.

But could this be said for the UK? Probably not as much. So why bother making the change? Because you need to. I’m sure we’ve all heard the stat: **“90% of the world’s data has been created in the last two years”**. And whether this is strictly true now as it was when first reported in 2013, or whether it’s true for your organisation in 2019, the fact remains, more and more data are going to be created. Probably in more and more ways. Why?



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One reason is that more and more UK companies are increasingly looking at being mobile first.

Empowering their employees to take advantage of this opportunity for freedom from the office – as well as more profits in the future of work. For this mobile movement, it makes sense to have a solution that can deliver secure, multisite connectivity to any number of sites without less performance. In fact, arguably with more. With different sites including your cloud and data centres.

But what does that mean in real terms?

It means that you have the choice in what you want to do with your data traffic. You can prioritise different moments and allocate resources accordingly. Wouldn’t it be great to be able to do that with a train? With VIPs arriving ten times quicker. I’d like that, so would your employees, so would your customers. So, then the why (around why improve the infrastructure) is self-explanatory.

It’s the HOW that’s harder to understand. Whether we work in, or with technology or not, human beings all want things to be easy-to-understand; to be transparent where possible, and to be in our control. It’s an ideal which rarely happens. But SD-WAN allows this and much more. It will allow human beings to become more successful. As Rohit Mehra³, vice president of IDC’s Network Infrastructure, noted:

“...enterprise WAN is rapidly being re-architected to cost-effectively deliver new, secure capabilities, and that adapting current solutions such as SD-WAN will be a key ingredient for success.”

How does it work for you NOW?

In “techie speak”, SD-WAN appliances take an innovative approach to load balancing and managing multiple connections, allowing your business to use its resources as efficiently as possible⁴. Traffic travelling through an SD-WAN device will take the easiest selected path available, which means business-critical traffic will use an MPLS or site-to-site link, if available. While non-critical traffic won’t clog up these more expensive specialised connections.

You get to choose from your own dashboard on systems like Cisco Meraki, which means you (as a data organisation) can become much more agile. The changes you want can be made remotely with a zero-touch policy from your supplier. No code needed. So, you don't need as many call-outs. It's this ability to change quickly and easily, on the fly. For me, that is a key advantage of SD-WAN – especially bigger, global companies with multiple locations⁵. As the business world decentralises, so must our technology. But at what cost? The good news is that as **Gartner estimates that provisioning network changes at branch offices with SD-WAN reduces deployment time by as much as 80%**⁶, the system becomes more efficient not less.



PROVISIONING NETWORK CHANGES AT BRANCH OFFICES WITH SD-WAN REDUCES DEPLOYMENT TIME BY AS MUCH AS 80%

With this change in speed comes the ability to affect the bottom line. You can make data-driven decisions for your people on the road, your people in head office, and your people in multiple offices around your network. Which is why more and more businesses are turning to SD-WAN. As Gartner reports⁷ SD-WAN will account for 19% of WAN management by the end of 2019. Whilst IDC forecasts the SD-WAN market, which will be worth \$8 billion by 2021.

Whether or not money is key for you, the bottom line is that over in America, SD-WAN also saves money on capital expenditures. And I would like to think it could be the same here. Not perhaps as much for infrastructure reasons, but for instance, with the investment on dedicated firewall appliances. This can now be provided alongside SD-WAN functionality from one unified device.

Which is why some companies in America are reporting that using **SD-WAN can save 20% on capital expenditures**⁸ over continuing to repair and replace the older infrastructure which makes sense when you think about it... unlike with the roads of old.



SD-WAN CAN SAVE 20% ON CAPITAL EXPENDITURES

Will SD-WAN be in your future?

The future comes with many pillars of society. One of the defining parts of any nation's industrial strategy will have to be around the future of health and their population. And this is where I see a lot of SD-WAN's extra benefits panning out. So, you might not use SD-WAN in your business – but it will definitely affect your life.

In the future, the healthcare sector will use a **lot of big data and artificial intelligence (AI)**. Healthcare's data-heavy nature makes it an ideal candidate for the application of AI. As we have seen already – for good and for ill. AI is wading into healthcare from diagnosis and pathology to drug discovery and epidemiology. AI in healthcare is here to stay. At the same time, the sensitivity of medical data raises fundamental questions around privacy and security⁹.

Which is why such organisations are increasingly using SD-WAN. As SD-WAN has a strong Internet Protocol Security (IPsec) encryption for all data traffic through the encrypted overlay. **In essence, the dream of “end-to-end encryption” is now becoming a reality.** No bad thing if data is the new oil, as cybersecurity hacks are increasing for businesses whether or not our appreciation of how they happen has not. As Chief Digital Officer Sridhar CR¹⁰ points out:

“As the Fourth Industrial Revolution opens up unprecedented business opportunities, it also increases the inevitability of a cyber-attack, and businesses need to be ready. Not only do security measures need to be built into technology from the start, awareness should be ingrained into the company culture, while significant investment is also essential.”

Which is why the number of jobs in this sector keeps growing, with some 3.5 million unfilled cybersecurity roles by 2021, according to a Cybersecurity Ventures report. However, our future will not be more secure from human hacks¹¹. Perhaps SD-WAN helps us with the potential of overloading the system with new technologies.

The future of business is the future of machines

We all know that the Internet of Things (IoT) is coming. In fact, for many, it's already here. From speech recognition to voice technologies and automated cars. **To machines that talk not to humans, but to other machines.** This new world of the enterprise will transform organisations due to the efficiency of the communication pathways. But **ONLY** if the right infrastructure is in place.

The expanding network of connected IoT devices will have reached around **22.5 billion** by 2021 according to a report from Business Insider. This new world of data-rich, data-vital, IoT-connected information will bring about the digital transformation that all businesses need. And if the system bringing that change falls down, then it's worth thinking about the cost of enforced employee idleness¹². And for that matter – implied machine idleness too.



THE EXPANDING NETWORK WILL HAVE SOME **22.5 BILLION IOT** DEVICES CONNECTED BY 2021

Don't get me wrong, digital transformation with all its technology won't be easy. There is too much at stake. Whole industries will be born in the struggle. Countless businesses will either adapt or die. However, digital transformation for all the talk in the world needs more than "talk" to change the future.

The revolution will not be televised. But will it be computerised?

The future will be the time of computers. This is not a time of fantasy. With fantasies, we can just imagine or "wish away" potential issues. Not so with the real future. Not only are consumers going to become increasingly careful about who they entrust their data, but they are going to be less and less forgiving for any delay or mistakes from the companies that have it. You can see what's happening in FinTech. And the disruption of whole models of business in a presumed (traditionally) safe, untouchable sector.

In the end, the increase in technology will be a double-edged sword, which you'll need to wield with great responsibility. The increased advantages of SD-WAN to you could be:



Greater agility. Not only in the cloud but in the business deployment as traditional WANs can be fairly static and inflexible. More control when it comes to packet prioritisation. This control is key for running VoIP phones, especially alongside other connectivity-dependent and cloud-based services¹³.



Almost zero-touch collaboration. So, you don't need someone else to make changes, you can make them yourself. And if you need the extra help, then this help can be controlled centrally, providing streamlined deployment and more efficient delivery.



Greater transparency. With an intuitive system for reporting and making decisions, you can show what you did and why you did it.



Bottom line efficiency. With potential year-on-year cost savings for the bosses. This even helps the environment as it helps eco-conscious businesses cut their carbon footprint with fewer devices on-site, helping to make better use of resources, while reliance on cooling equipment will be reduced¹⁴.



All the benefits in the world won't mean a deal if you are hacked

I believe that it's in the end-to-end encryption where the deal for the future playmakers will be made or lost. Without this level of security and speed, any system – be it Cisco's Meraki or any others – will not be trusted, and therefore simply not used. Not by consumers and not by the future workforce, the stakes are that high. **The future workforce will be software-dependent on its infrastructure, whether they know it or not.** The future of work will be connected at all times. However, this is where such SD-WAN systems being software-based have other advantages over hardware, as it can add value over the top of your already provided service. As Richard Beeston, Head of Product Management for Daisy Corporate Services¹⁵ rightly states:

“The Cisco Meraki SD-WAN solution can sit over the top of your incumbent connectivity and network technology so whether you are with Daisy or not – you can get the benefits.”

Whether you go for SD-WAN or not, in the end, the software cuts out the need for complex reporting and by being intuitive, allows us all to understand the dynamic data changes in our businesses (or our clients' businesses). It allows us to do without the need for major network overhauls. By using software over the top of hardware, our clients can all leverage true business opportunities such as:



Enabling “The FUTURE Worker”. These workers will need SD-WAN to be efficient, productive, mobile and happier at work.



Creating economic reasons. Such systems enable the existence of different “pop-up” locations and stores to increase revenue. For example, at peak holiday times and locations.



Provisioning social reasons. With healthcare providers being able to share critical patient data, they can save lives with mobile facilities or on-the-road carers in real time.



Manufacturers who can leverage the power of IoT. To build new “things” that can help change the world, this brave new world will need something like SD-WAN to be able to perform.

All this and more. And it won't just be BIG businesses. For small businesses, SD-WAN offers a way to bring enterprise-level connectivity across multiple sites without the costs of enterprise solutions or specialist infrastructure requirements. For larger and more established businesses, **SD-WAN delivers extra transparency and all the other benefits to save money and meet their future needs.** For larger businesses – SD-WAN might even become your competitive advantage in your sector. Your IT team empowering your business to see new opportunities. As Mary K. Pratt¹⁶ points out:

“...the IT department will remain the key player within the enterprise as it will be tasked with identifying new market opportunities created by technology – not just enabling ideas brought forth by their business colleagues.”

As a business, the future of your digital transformation might boil down to an old saying in social media training: **“your network is your net worth.”** So, in the business of the future, your network's ability will tie directly to your bottom line; to how and how well you can work. To how much your organisation can really do.

It's a bit like where we all are now with our transport systems. But unlike with creaking railways, we can do something about it without voting for new politics and without building something completely new. By simply doing something new we can all be independent. **Digital transformation can happen to your digital infrastructure almost instantly.** As fellow futurist Tom Cheesewright¹⁷ commented when I recently interviewed him...

“SD-WAN is the future... Much more so than hardware, with its rigidly-defined connections, capacities, and processes. Software-defined networks are a critical tool for the future because they equip enterprises with the capacity to flex in response to changing needs. Connectivity is such a critical resource today. And in this age of high-frequency change, every critical resource needs to be adaptable to the organisation's changing needs.”

It is this high-frequency change that will make all the difference. Not just to your business, but to the future of work itself. **#TheFutureWorker will demand that you have the right systems in place,** so will your future consumer. And in the end, so will you.



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CORPORATE SERVICES



About the Author

Dan Sodergren¹⁸ is a digital marketing and technical expert for the BBC. He is often seen on the BBC Breakfast red sofa, is a regular on BBC Radio Five Live and BBC Scottish Radio, and is seen as a tech and digital expert on shows such as Real, Fake or Unknown, Supershoppers, The One show, BBC Watchdog and Rip Off Britain. He has a love of the future and is especially interested in technology, mobile and #TheFUTUREworker.

About Daisy Corporate Services

Daisy Corporate Services is the UK's #1 independent provider of secure IT, communications and cloud technology. We offer a breadth of solutions from the most trusted brands and technologies on the market. By bridging the gap between old and new technology, we make businesses smarter by transforming customer engagement, managing costs and making people more efficient.

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