TELCO FORGE

# Structural Bottlenecks to Telco Innovation

Executive discussions on the gap between technology invention and commercial success in telecoms.

A TelcoForge Leaders' Meeting Report

July 2025

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# INTRODUCTION

TelcoForge is holding monthly meetings mainly for C-level and SVP-level professionals from as diverse an array of stakeholders as possible. These meetings take place under Chatham House Rules to enable senior professionals to speak frankly. However, we capture the anonymised ideas and outcomes for the wider industry to digest and act upon.

During the last few months the Leaders' Reports have highlighted some of the dissatisfaction and structural problems prevalent in the telecoms market. Repeatedly, executives expressed scepticism about the ability of the telecoms ecosystem to innovate its way out of some of the problems it faces.

As a result, we took a deep dive into the structural elements that either enable or hinder innovation within the telecoms industry.

- Is innovation desirable within telecoms?
- If yes, what prevents innovation from taking hold?
- How are there so many start-ups and new technologies if the industry isn't innovative?
- Are there pressures on the industry which should incentivise greater innovation?

In June 2025, over the course of two one-hour calls, around a dozen executives from different parts of the industry and different continents shared their insights.

This paper makes no pretense to be a complete survey of the problem of innovation in a complex industry. However, it highlights the perspective of senior executives and illuminates what is on their minds.

Some of the conclusions are complementary to our previous report "Are telco's big players ripe for disruption?"

# EXECUTIVE SUMMARY

The telecommunications industry faces a fundamental paradox: while technology evolution proceeds rapidly, the sector's relationship with innovation remains deeply problematic. This report, based on insights from senior executives across the telecoms ecosystem, examines the structural bottlenecks preventing the industry from innovating its way out of persistent challenges.

- Conservative Culture Dominates: Telecoms providers operate in an environment where service failures have massive reputational and financial consequences. This creates psychological disincentives to innovation.

- Financial Incentives Misaligned: The industry's structure as a financial delivery mechanism for shareholders rewards cost reduction over breakthrough innovation. This short-term focus has led to the divestment of critical R&D capabilities and infrastructure assets.

- Talent Pipeline Crisis: Academic programmes in telecoms engineering face severe student shortages. The talent bottleneck threatens the industry's innovation foundation.

- Start-up Ecosystem Dysfunction: The industry systematically undermines external innovation through its treatment of start-ups.

Critical threats to the status quo are emerging; not least:

- Unlike traditional competitive threats, the telecoms sector faces potential replacement, for example by hyperscaler-infrastructure partnerships.

- National security concerns and supply chain sovereignty requirements demand more radical innovation to reduce dependency on foreign suppliers.

Despite structural challenges, there are promising avenues for telecoms players to take a major role in emerging ecosystems. However, it would require an appetite for more radical business model innovation than we have seen in a long time.

Innovation bottlenecks ultimately stem from misaligned incentives throughout the value chain. Change requires persuading stakeholders—from shareholders to governments—that their objectives are better served by fostering cultures more amenable to innovation.

The industry stands at a crossroads: embrace the structural changes necessary for meaningful innovation, or risk being displaced by more agile players who can serve the same essential functions without the legacy constraints.

# IS INNOVATION DESIRABLE?

Telecoms service providers have an anomalous position compared to many other industries. This drives a somewhat problematic relationship to innovation. While technology evolution takes place rapidly - some might argue that it's too rapid to keep up with - the outcomes of it have so far not radically altered the fundamental nature of telecoms service providers or their offerings since the addition of data to voice.

In part we might say that telecoms' success at becoming a fundamental part of life and a key element of national infrastructure is to blame for this. Like utilities, any failure of service is impactful to people who depend on it. The negative outcomes of failures - in terms of publicity, reputation, financial loss and bureaucracy - are much greater than one might find if, for example, a car manufacturer shut down for a day. As one participant noted,

Operators are measured on dropped calls, throughput etc. So you want to be conservative, you're not going to disrupt anything because you might break the network by 0.1%.

Moreover, this reliability of service is expected in an environment which, by its nature, tends to be highly dynamic. This creates some conservative thinking even with the best will in the world.

For telcos most of the time the challenge is network stability. You don't know when your cable will be cut by developers; and then the power level, Db level, all these things are all some of the important challenges they are facing at any point of time. Now when we talk about some level of new innovation - of adopting open networking and other things coming in they think "OK, I have a team which is working closely with the Ciscos and the Junipers of the world. Even then I have to struggle meeting my SLAs and everything. Now you are bringing me something new. I know that it has a value, but how am i going to manage it?"

As a result, there are psychological disincentives to technology innovation. Added to that, the sheer longevity of people in the telecoms industry - where average ages are continually rising - leads to innate conservatism.

Basically the guy who designed the network and laid the network many years back is still there saying "Things are working. Let it work as it is!" Nobody wants to change it, though new technologies or new services are getting added. It's gone through the rigorous testing process and everything.

Notice that phrase: "though new technologies or new services are getting added". This sums up the reason behind telecoms' habit of layering systems and technologies rather than replacing them. Deploying something and having it work fine first time is rare, as anyone who uses the phrase "in beta" will attest. In an environment that rewards stability, this is a thoroughly rational response. The only downside is that we end up with massively complex systems of systems accreted over time, rather than streamlining based on the best available capabilities.

# MARKET PSYCHOLOGY

Risk aversion is a natural response to some pressures, and there are times when it is rewarded by the markets.

Most large telcos started off as government entities where they were monopolies, and that mindset still is heavily embedded. As per Adam Smith, they'd much rather be rent-seekers than innovators. So they constantly seek to get a point where they *don't have to* innovate.

Indeed, monopolies or oligopolies tend towards rent-seeking behaviour. While it might not be in the best long-term interests of customers, it may well suit the shareholders. One example of such behaviour from the UK might be found in the scandals over privatised water supplies, which has delivered a decline in water quality and a reduction in infrastructure investment alongside higher bills.

This begs the question of whether we should view telecoms services are inherently monopolies or oligopolies. If there are pressures to reduce a monopoly position, this bottleneck to innovation may be reduced or eliminated.

The sheer cost and time involved with innovating at the network level creates some barriers to implementing technology innovation. Again, much of this is to do with creating a long-term reward for investors.

On the operator side, they definitely have a mentality of sweating their assets. I was involved heavily in fibre and DSL in the 90, and I remember Ivan Seidenberg (Verizon CEO at the time) saying "Your DSL is a great interim technology for the next 25 years."

However, there is also a certain psychology owing to the fact that the telecoms industry these days is very much the domain of people in middle age and upwards. Many senior executives have been through a series of battles already to get where we are today, with networks that by and large work.

As a result, there is a certain degree of inertia. Not only can we see that play out with network designers who don't want to undo their hard-won successes in building things that function, but there is also - whether explicit or implicit - more awareness in many professionals that whatever telecoms looks like in the mid-2030s, they are not going to be involved. Individuals will respond to this truth in different ways, but not all are constructive to the long-term health of an increasingly complex and fast-paced industry:

I've heard a CISO of a major telco telling me. "I'm not dealing with that quantum stuff because it all sounds like science fiction. And even if you're right and this will be a danger for us, I will be retired at that time, so I don't care." Now this is a real quote, I tell you. And it's incredible. I mean, it's a completely reckless way of thinking.

While that is an extreme example, there are going to be more people who have a few years left to work through and just want a quiet life in the meanwhile. It predisposes some people towards inertia, quite understandably, because they won't reap the rewards of action.

# OPERATIONAL BOTTLENECKS

Unsurprisingly, some of these constraints set by the wider market become reflected in business' processes and priorities. Their design can also help or hinder the creation of opportunity for commercial innovation.

In some cases this is a strategic play to prevent innovative rivals from taking hold in the market:

The most recent disappointment – mobile unlicensed spectrum. CBRS was intended to be Wi-Fi for telco; fully unlicensed, available to everybody. Then they immediately carved out some priority spectrum, some licenced spectrum, and even now they're trying to kill it.

If you look at the Wi-Fi world compared to mobile, we really should have some degree of truly unlicensed spectrum that will drive a lot of innovation. We can never innovate in mobile because you have to have spectrum; spectrum is owned by the operator; and there are only three operators in the country. So you have to convince one of these three guys to do something.

While this observation harks back to earlier comments about rent-seeking behaviour, it is arguably a normal part of the cut and thrust of twenty-first century capitalism.

Rather more worrying are the internal operational bottlenecks which can prevent companies from taking advantage of opportunities which come their way.

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A real life example. A major bank in this country goes to the largest telecom operator, saying "We need to be quantum safe, we need to test or to start installing quantum communication between two of our datasets. Can you help us with that?"

Their answer? "Yeah, that's interesting. We have looked into this, but before we start investing in this area, testing equipment and so on to provide the service, we need at least 5 or 10 customers who would be interested in that service, otherwise the investment would not pay off."

So after a couple of months' back and forth, the bank decided to go directly to a company providing quantum equipment. And they worked together with Google to provide the service. And what is left over for the telecom operator? To sell them fibre.

# INVESTMENT PRESSURES

A telco is much more of a financial vehicle that goes in and out of private equity. It goes in and out of investors and there's definitely a “sweat the assets” mentality.

As has been previously observed, the nature of telecoms providers - not as companies but as financial delivery mechanisms for shareholders - can often create incentives which work contrary to the long-term benefit of the company.

I do think the telco industry itself is a little short-term with some of the decisions it's making For example, who pays for cell towers? Selling off all your towers to a third party, giving up a fairly core part of your network, don't be surprised when that body later turns around and sells your towers to one of your competitors. Now you've enabled the over-the-top guys to just come buy radio capacity direct.

There are certain assets you need to own if you want to monetise and be vertical. If you purely want to be a virtual operator then you don't need to own any assets at all. Maybe that's where the telco industry heads down the road in two decades’ time, where infrastructure is procurable as a service - network as a service, radio as a service, AI as a service, fibre as a service - and you just construct a marketing-focused company based on that.

Indeed, pressure from shareholders for regular dividends tends to reward very specific types of innovation. Principally, deploying innovations that reduce costs structures will be welcomed. This is particularly the case when vendors offer sales models dependent upon cost reductions, which essentially offload the risk to the supplier.

By contrast, commercial innovations and new growth tend to require investment which will not pay off for several years, if at all. In other words, as one participant noted:

Telcos’ organisation structures and reward structures do not necessarily pay you or reward you for making the next big breakthrough.

Another concurred:

There are loads of innovative things in the standards. But operators say “Well, what's in it for us? Why do we want to do this?” Or, “We just don't have enough margin.”

Image by Ivca on Pixabay

# ACADEMIA: TALENT BOTTLENECK

The foundations of the telecoms industry have always been rooted in academic research, from the days of Nikola Tesla onwards. Participants were emphatic about this being an essential driver for further innovation in the industry.

I'm strongly convinced all the little seeds we put in pay off. It's where we got to this whole talk about edge compute, by investing in the Carnegie Mellon labs about 10 years ago.

However, there is a fundamental risk to the health of the telecoms industry at present.

Let me tell you what's *not* the answer to your problem, and that is reducing government funding on academic research. A lot of innovation gets percolated through universities or, at the very least, when those PhD researchers graduate and end up in industry. They need to have the basis of their university research history in order to be effective in those spaces.

Indeed, many countries do continue to announce substantial investments in telecoms R&D funding. Countries across the EU, North America and elsewhere. This should suggest a vibrant environment with no bottleneck, but it masks a more fundamental challenge with the numbers of students feeding in at the bottom of the funnel.

It is not hard to find reports on Google about shortages in student numbers for telecoms careers, especially in engineering subjects. India, North America, Europe are all affected. However, behind the scenes educators are highly concerned by the shortage of uptake for graduate positions in particular.

One European leader in the field noted that since the COVID-19 pandemic the decline in numbers has been severe at their university; this year they might have one-third as many students on their graduate programme as in 2019, despite being well funded and well reputed.

The reason also seems quite clear; the supply of graduates who would once have studied radio engineering or other aspects of telecoms have seen that there are more opportunities in other careers; notably AI today.

Addressing this bottleneck would require serious work in itself (and it's something which TelcoForge is planning for the future). However, the ramifications are both short-term and long-term in nature.

In general, if we don't have a bunch of researchers with fairly stable funding to train the next generation and doing the next generation of innovations, test labs, pilot studies, reference architectures - all the stuff that comes out of those units – then we're losing the channel of innovation and that would be a real mistake.

# FIRST-MOVER PROBLEMS

My first recommendation to anybody is never, ever do a telco startup.

While there are many innovators in the industry, there are often concerns not just about being one, but also with working with them. Adopting an unproven technology or service adds risk which - as previously noted - is not rewarded by investors. That resistance to change scales based on the size of the changes required to make it work; and not only in technical terms:

When you when you have something which needs a complete transformation of the customer mindset, transformation of everything, it's a long journey. And this is where we are seeing a lot of challenges.

Far safer for potential customers to to watch what a different first-mover company does before taking the plunge themselves..

People used to always complain about “Oh, satellites can't do this. It will always be expensive. It's such a complex job. When you launch a satellite, it has to remain up for 25 years, etc etc.” And then suddenly, as soon as Starlink was launched, the whole thing changed. Suddenly people realised there are a lot of things we can do with satellites. We are no longer worried about that 600 millisecond round trip time.

Not every company can be a Starlink with their scale of backing - and this is a problem.

The industry is designed to abuse and make startups fail. I put this on the operators.

Recently we went through the Open RAN experience. I tell you that for every early proof of concept, no matter how small - 30 units, 50 units - the operators expected it to be fully funded by the vendors.

At the end of the day, the operators are the ones that are going to benefit from the innovation; they have to put some skin in the game. At least pay the startups for the equipment they use.

This is why there are no startups left by the time they get to the point where the technology is mature enough to deploy - they've burned through all their money. The operators have dragged it out for multiple years, and then the big players sweep in now that it's all standardised and working and implemented.

# INCENTIVISING EXPERIMENTATION

While start-ups struggle to provide and external solution to the desire for innovation, the telecoms industry has long had a history of internal R&D to drive new capabilities. AT&T's Bell Labs, for example, had a very strong reputation.

Famously, HP used to have Friday afternoons when you worked on something different. You know, 5% of your time doesn't seem like a lot, but they got a hell of a lot of innovation in those days out of those 5%. Nowadays that structure, that permission to go off and do something different, doesn't really exist, and I think that's the fundamental restriction that we have.

However, many of the telecoms providers have divested much of their capacity for original R&D. This is instead the domain of the vendor community. Bell Labs, for example, is now owned by Nokia.

The implications for how innovation is approached changes in that setting, for some obvious commercial reasons.

In some of the companies that we count on to do this innovation, organisational structures and reward structures do not necessarily reward you for making the next big breakthrough. They're interested in incremental changes. They're interested in cost reduction on a line card, or they're interested in a mechanism to reduce the power dissipation of a cell tower or whatever.

But in terms of inventing the next transistor or making a great leap forward, nobody's got that job in a lot of these companies. People have to therefore do it as a skunkworks project. And more often than not, if somebody finds out I just spent $1000 on purchase orders or bought a new lab instrument because I need it for this side project of mine, I'm going to get spanked.

Image by u_qzc1eihxev from Pixabay

This is purely a question of creating  incentives within the company. There are a variety of ways to reward more dramatic approaches.

Huawei, for example, is famous. For any large project there's a Red Army and a Blue Army. In the Red Army, you do what people inside the company believe should be done. The Blue Army's job is to prove you wrong and do something opposite... The two teams compete against each other, and it was encouraged. It was powered up. In fact, the person that runs the Blue Army often gets promoted significantly. He's rewarded for being willing to take risks.

That kind of culture...I don't know if that's prevalent in the western world. There you reward people for taking risks and failing, while here you avoid taking risks and failing because there's rarely an upside to risk.

Indeed, this more incremental innovation is very much what is supported and encouraged. In the development of next-generation standards, for example, the NGMN has specifically requested a "Graceful evolution from 5G" on behalf of its members; in other words, something which can be implemented incrementally and, in an ideal world, through software rather than hardware deployments.

This is entirely understandable for companies who would struggle to afford a completely new network from scratch. However, there is not a simple dualism between 'new network' and 'incremental innovation'. This does, however, align well with the incentives of vendor companies who can use this to drive incremental innovations and, in particular, those which help the telecoms providers save money - a much more reliable way to yield shareholder returns than investments into new ventures.

Now you can be a Bell Labs fellow by supply chain innovation. It's not the same. You haven't invented anything. All you've done is invented a way to squeeze more money out of your suppliers.

In short, there are incentives to steer away from radical innovation within the telecoms supply chain, deriving both from the conception of telcos as sources of regular shareholder dividends and from the internal de-incentivisation of risk in both vendors and operators. As the examples from both HP and Huawei show, though, *this state of affairs is not inevitable by any means.*

# THREATS CALL FOR MORE RADICAL INNOVATION

While there is a sound internal logic for minimising radical innovation, that soundness depends on an environment in which there is a steady external state. We cannot, however, rely upon this.

The biggest threat to telcos is not going to be competition or innovation from within the established players. And I don't think it's going to be disruption in the way defined by Clayton Christiansen, where it's the start of doing something different. I believe it's going to be substitution.

TelcoForge's previous report brought together executive commentary upon the question of whether major telecoms players are ripe for disruption. Broadly speaking, many of the established moats that would prevent competition are falling away, as they proved too restrictive for companies struggling to generate new revenues. This opens up the opportunity for disruption from new players within the industry.

However, reducing radical innovation does not improve a company's security against external threats and shifts in the market. There are several trends at play which suggest these externalities may rewrite the nature and priorities of the industry.

## POLITICAL CONSIDERATIONS

First and foremost, the telecoms sector is not straightforwardly commercial in the manner that, for example, selling bicycles or advisory services is.

Countries have been aware that communications are a double-edged mechanism for well over a century. In the past decade, however, subsequent shocks have underlined the significant role that modern telecoms plays in national security and national wellbeing. These policy and social requirements offer a counter-push against investor requirements for returns.

This was clear in India towards the end of the last decade, when policies such as 'Make in India' were first proposed as methods to reduce supply chain dependency on external players who may not have the country's interests at heart. More recently, Europe has been increasingly focused on exactly such sovereignty, given its position caught between the USA and China.

Most European companies and telecom players are between a rock and a hard place, because the US administration started to weaponise the services provided by the US... When the e-mail account for the chief prosecutor of the International Criminal Court in The Hague was disabled by Microsoft, I think that was a real wake-up call for everybody. If you're not on the same page as the current US administration, Microsoft will work as a deputy sheriff.

# THE GREAT REPLACEMENT

Historically the telecoms industry has been vulnerable to innovation from outside their typical sphere of activity, and this is a significant source of concern today. Without transformation, the industry risks disintermediation.

Today voice runs over Skype, over Zoom and over Cisco Webex, it doesn't run over the telco network anymore. They've lost SMS, it's going to ICS and now it's being driven by the Android and Apple infrastructure.

Cost pressures are causing increasing degrees of infrastructure sharing and neutral host models. While this is much more economically sound as a way of managing essential national infrastructure - much more so than duplicating networks - it changes the dynamics of competition and could threaten further erosion of the telecoms provider's unique position.

Neutral host gives them a good chance to start losing some of the access infrastructure as well. We see this a little more strongly in Europe, and particularly the UK where you are finally getting a competitive, independent third-party fibre infrastructure.

I do believe that down the road a Google or somebody else could construct a telco network simply by licensing a neutral host RAN network from somebody and buying dark fibre from somebody else... I think the first step is to virtualise the physical infrastructure, but the next step is to virtualise the network completely; and once you virtualise the network completely, what role really does the telco still have, other than in spectrum assets?

Neutral-hosted infrastructure makes a huge amount of financial sense, and we have seen the pressures globally on telecoms providers to sell off their physical infrastructure - so far principally passive assets, but not uniquely. This makes good sense to investors looking for dividends. However, it opens the way for replacement by hyperscalers paired with infrastructure players:

Somebody's got to plough the fibres into the ground. Somebody's got to build the towers. So fully virtualising only works over the infrastructure you've got. You have to figure out a mechanism to pay for the next stage of capital and technology improvement, and paying for that is something that the telcos are not going to do. Probably not even the wireless operators can afford to do that these days, much less the wireline traditional telcos. I think who might do it, however, are the large-scale cloud service companies Google, Amazon, Microsoft. Perhaps Apple, They're likely to realise that they're having significant performance and reliability problems as a result of the challenges in the aging access network.

The right thing to do, I think, is to plough fibres into every building in the reachable world and then use LEO satellites to reach the ones where those fibres are not economical to deploy. So imagine for a moment an access-gestalt partnership between, say, Amazon Web Services and Starlink. They could cover 99% of humanity with 100-Mb services at a fraction of the cost of reconstructing something like a POTS network or revising the wireless network.

# AVENUES FOR INNOVATION

While there are undoubted difficulties in creating the right incentives for innovation, there are avenues which our participants felt could be promising for telecoms players to pursue. These all depend upon the willingness and ability of the companies involved to adapt their operational and business models along with their tech stack. They also require the ability to form and manage effective strategic partnerships. None of this is unheard-of, happily, but would change potentially how leaders conceive of what a telecoms company is or does..

Firstly, the relationship between telecoms infrastructure, data transport and AI is complex and opens up some opportunities at both the hardware and software layer for telecoms players to have a role. However, as one potential enterprise client pointed out at TelcoForge's 6G Forge event earlier this year,

"B2B isn't B2C. We'd *like* to work with telcos to achieve what we need, but if they're not going to work with us the way we need and when we need it, we'll pay other companies who will."

Photo by Brownmantis on Pixabay

With that caveat in place, there are some promising opportunities for the telecoms players. One element is simply to leverage their existing infrastructure in support of AI services.

Learning typically happens in the cloud, but for inferencing... could the edge be a place where innovation can happen? If so, does it give the telco operator a seat at the table? That's something TIP is going to start looking into. We have a telco AI group and recently AWS has joined the board. So that's the topic we've been discussing at the top level.

Given all the European operators' presence and AT&T seems to be there, people are interested. Like – "I have the space; I have the power; cooling some to some extent, not all the cooling yet, but could this be the space I can leverage to work with hyperscalers or maybe Intel, Nvidia, AMD and so on to provide edge inferencing?"

However, this is not the only way in which telecoms and the AI ecosystem can collaborate. Arguably for many applications there is a mutual reinforcement.

Folks providing large-scale AI rely on the network operators quite heavily to bring the training data into the network for training their next generation of models on; to distribute the large language models or reasoning models out as they're computed; and then to track around all of the inference data, send the prompts into the models, and send the results back to the users. So the technologies of networks enable these AI functions and the AI functions are really screwed if those technologies no longer function as required or don't evolve in the right directions.

At the same time, of course, telecoms providers are keen to use AI within the network for optimisation and automation.

The question is “What's going to move the needle?” and if you look at some of the AI services that could be coming in the next iterations, they could change operational performance, then also the cost structure of the major MNOs. That could be pretty impactful, because that could allow them to do different things that their competitors can't.

As a result, one participant noted: The companies that might be most successful are those that partner AI and network capabilities the most effectively.

Quite how to make this happen is, at present, unclear however.

The part that's challenging everyone is “How do I to leverage the fact that I am on the far, far edge? And how do I monetise? Is it my services, maybe my space, maybe the fact that I have invested in a lot of infrastructure already?” That's the part I think which we’re more struggling to define.

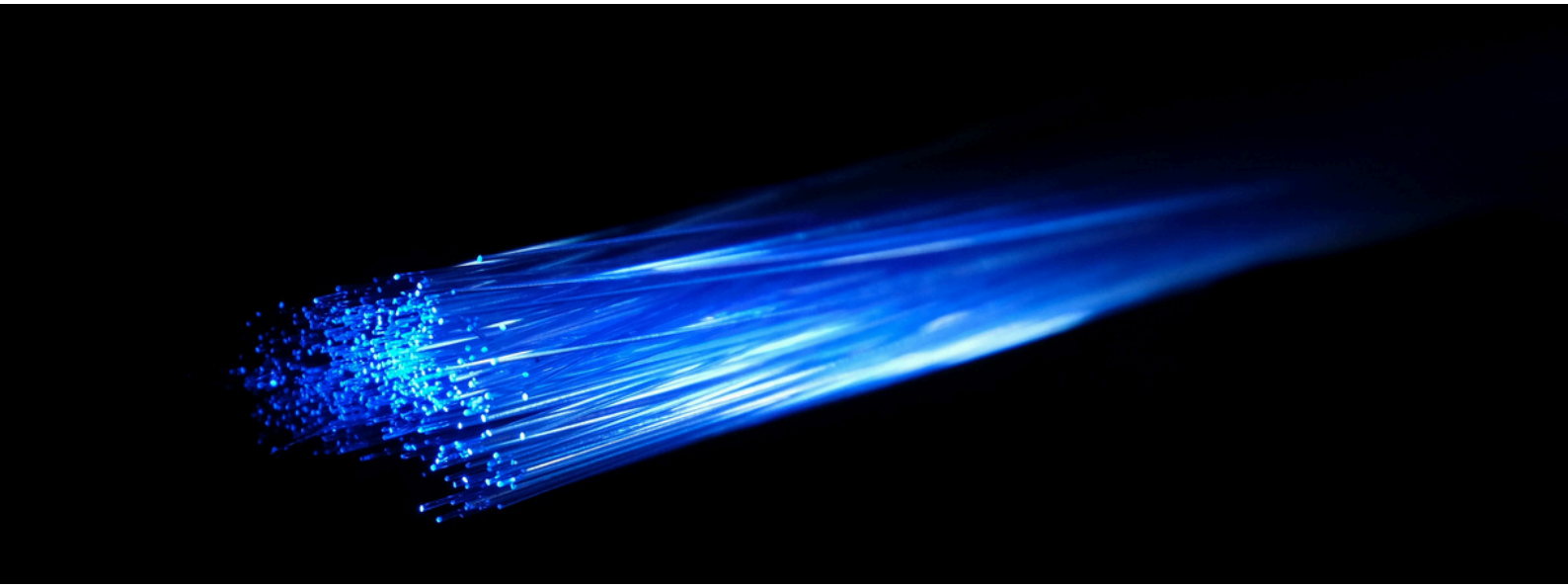

Photo by Compare Fibre on UNsplash

There is an important tension underpinning the question above. While infrastructure for carrying AI data and services is likely to be significant, there is an established tendency towards divesting infrastructure and embracing virtualisation.

This has definite benefits. As mentioned in previous reports, the skills to understand and manage a virtualised network infrastructure are likely to be in greater supply than for managing a vertically integrated stack of hardware and software from a single vendor. In turn this reduces the knowledge dependency on those vendors to run the network and enables in-house innovation and modification. As a result, it offers telecoms providers greater operational flexibility.

Operationally it also enables efficiencies and cost reductions. A virtualised telecoms provider can run over infrastructure owned by neutral host and third party providers, meaning that the cost of building an maintaining infrastructure is spread over multiple players.

While this is a benefit in many ways, if we lean into a model where providing support to AI capabilities makes up a significant market then it will mean being very intentional in how the network operates over third-party infrastructure.

There was a structural change in implementation as we moved from an appliance business model to a cloud-native model in the 2010's and the operators largely outsourced the running of the network to the vendors. But really to be effective in a model supporting AI you need to be vertically integrated and you need to run your network yourself, because operational excellence is going to be one of the competitive differentiators.

# PERSUASION FOR INNOVATION

Structural blockers to innovation come down to how incentives in the system are managed, and in particular where there are misalignments of incentive. For example, when telecoms C-suites get rewarded for taking steps to grow a company this creates a different set of outcomes from when they are rewarded for delivering returns to shareholders.

There is, of course, the challenge that the telecoms industry serves both a commercial purpose and a societal one. At the top level this introduces a range of conflicts in prioritisation. As a telecoms leader, navigating through both government and shareholder pressures if you want to innovate on any scale. As participants pointed out,

You've really got to convince people, to varying degrees, up and down the value chain that your pivot to a slightly different direction, or your embracing of a slightly innovative concept, is the right way to go.

Image by Welcome to All ! ツ from Pixabay

One of my mentors gave me some excellent advice, which was hard to swallow but turned out to be absolutely correct. The advice is simple: *Every political consideration outweighs any technical consideration*. So a lot of us argue up and down about the value of 6G or fibre or whatever, but if it's contrary to somebody's political positioning or bias, it's not going to happen.

Unsurprisingly, this means that incremental changes and small-scale innovation is easier to enable. It requires less thought or persuasion for external stakeholders, while it also plays into the incentives of vendors not to undermine their existing businesses.

That isn't to say that change is impossible at senior levels by any means. If that were the case, Tesla would never have had a higher valuation than Toyota and there would be no rush to use the word "AI" in every piece of marketing today.

There's a bit of a herd mentality here, right? If Warren Buffett says it's the right answer and throws $1,000,000 at it, it's peanuts to him, but a lot of people are going to follow suit. That sort of thing is inevitable and rampant in the industry. And you can try to swim upstream against that, or you can work with it.

In other words, it would be possible to influence the political and shareholder appetite for innovation, but it depends on persuading them that their objectives are better served by - for example - investing more to foster an internal culture of innovation than to outsource that innovation to large vendors; or to create a more supportive environment for start-ups to come through in the market.

Exactly how this can or should be done was outside the scope of these conversations, and is part of a much wider literature on negotiation, persuasion and marketing.

Image by Herbert Bieser on Pixabay

# CONCLUSIONS

While many in the telecoms industry are fascinated by the technical innovations taking place around them, there are many underlying pressures and incentives which tend towards innovations which are incremental, slow to realise and, as a result, lead to little fundamental change.

Some of this conservatism is inherent in the nature of the industry, caught as it is between providing an essential national good and providing returns to shareholders. The phrase “No man can well serve two masters” might apply in this circumstance. We will explore this conundrum in future papers.

However, other blockers to innovation are conditional upon the current staffing within the industry. Executives and engineers who bult their reputations setting up working systems have little incentive to risk replacing them. Without a strong pipeline of people with their own reputations to make, corporate inertia is more likely.

Nevertheless, there is change afoot in the world and there are new players to consider. These could be threats or allies, but in either case the role of the telco and its position in a value web changes, which demands innovation to react effectively.

In many major companies corporate structures and practices which foster internal innovation and - as a result - responding quickly have been disbanded and outsourced. The risk of innovating has been moved to large vendors - who have their own incentives to innovate within a limited scope - and to start-ups who generally have a limited runway.

Is it possible to change the situation by altering incentives through the system. The big question is whether there is enough desire to do so.

# ACKNOWLEDGEMENTS

The TelcoForge team would like to thank the senior executives for their time and insights making this report possible.

We look forward to many other constructive insights.

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*Leaders' Meetings take place monthly on an invitation-only basis. Executives on the invitation list have no obligation to attend but may propose an alternate participant if they are unable to join.*

*Please contact TelcoForge below if you would like to:*

- *Nominate a colleague or be nominated to* ***join the invitation list*** *for monthly Leaders' Meetings.*
- *Explore ways to* ***associate your brand*** *with these reports or other TelcoForge content.*

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## CONTACT

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