TELECOMS: ENSURING YOUR SYSTEMS ARE READY FOR THE UNKNOWN

Covid-19 has brought operational resilience to the forefront of the telecoms industry as increased volumes and changing consumption patterns have placed massive pressure on existing technological infrastructure. This whitepaper will explain why operational risk is one of the biggest issues facing the global telecoms industry. It will also discuss the three essential pillars of operational resilience, that if utilised, will enable providers to minimise outages.

Working from home policies enacted across the globe have placed the world's telecoms infrastructure under enormous stress. Sheer volume has been a major problem as home broadband networks have to cope with levels of traffic during the week that they have never had to before. Consumption patterns have also become less predictable, which means that networks are struggling to plan for when peak times are as this may change from week to week. Firms have struggled to adjust to this – network outages have increased by 42% between mid-February and April. [1]

Telecoms companies have lifted data caps to cope with demand, but that's put additional stress on their networks. This is because telecoms providers are not able to scale quickly with demand due to finite capacity that cannot be increased at the drop of a hat. In some countries, companies are taking drastic measures to cope with the demand, some even cutting service limits to entire neighbourhoods.

Despite telecoms companies facing significant challenges, there has to be a change. If a customer's home broadband goes down, it doesn't only affect their leisure time but now, their working life too. Therefore, ensuring the integrity of networks should be firms' number one priority.

This is where operational resilience comes in. Get this right and telecom's providers can minimise downtime, boost customer satisfaction, maintain reputation and minimise financial loss.

This whitepaper will provide business leaders with a thorough overview of the present challenges facing telecoms and media companies. It will discuss how Covid-19 has amplified pre-existing problems within the sector as providers are working to adapt their complex and massive network infrastructure to respond to ever-changing consumer demands. It will then go into detail on the three essential pillars of operational resilience that will help telecoms to avoid outages, allowing them to maintain excellent customer service, minimise financial loss during this crisis and come out of it in the best position possible.

Global Telecoms: A sector adapting to change

Telecoms companies face the very difficult problem of having a customer base whose demands change rapidly, combined with operating a complex infrastructure that is unable to responds as rapidly as shifting consumption patterns.

Companies are trying to plan their systems according to consumer trends but this is made difficult by the sheer variety of ways customers use their services. For example, only a couple of years ago, if a consumer wanted to stream an online video, there were only a couple of possible platforms, but now every media company has their own platform. This variety makes it very difficult for telecoms companies to adapt.

Covid-19 has compounded the problem in two major ways, the first being volume. As populations across the globe work from home, patterns of consumption have changed. This means that peak demand may come from different areas at different times. Telecoms providers have found it very difficult to react to this shift.

The second problem is the nature of demand. Over the past few years telecoms providers have been shifting away from landlines toward wireless connections. However, in light of Covid there has been a small, but significant shift back towards landlines, which has caused difficulties among some providers.

Something telecoms were dealing with even before Covid-19 hit was the shift to new technology. The sector is in the middle of a transition, that while being beneficial in the long-term is causing short-term difficulties. Providers are in the middle of switching to the cloud, which means that currently they are running on a hybrid model which is much more difficult and complex to manage.

Introducing Operational resilience

As discussed in our previous whitepaper, operational resilience is an organisation's ability to protect and sustain its core business functions when experiencing operational stress or disruption. Yet, despite operational resilience becoming mainstream as a concept, many companies are still struggling to implement it.

The telecoms industry is particularly vulnerable, having become exponentially more complex and unregulated over the last few decades. We've now reached a critical point where the industry is so enormous and far-reaching in its scope – with an incredibly high number of low volume transactions occurring every millisecond – that it's simultaneously central to everyday life and inherently vulnerable.

Only through comprehensive, real-time data analysis facilitated by intelligent software solutions can operational risk be proactively identified and minimised. There are three essential pillars at the heart of operational resilience for telecoms companies: synthetic monitoring, performance monitoring and capacity planning.

Pillar 1: Synthetic monitoring - be your own customer

The first step a telecoms company must take to make their network infrastructure operationally resilient in the face of both increased and changing demand is to be able to put themselves in the shoes of the end user. This is called synthetic monitoring, and it provides the most fundamental test of IT availability: whether a customer can gain access.

ITRS Synthetic Monitoring provides organisations with this ability. It delivers teams visibility into the performance and availability of their most critical systems, including websites, applications and APIs. It also simulates a realistic user experience across all services from 180+ locations across 60+ countries worldwide to quickly tell where things are very slow or, in the worst case, unavailable.

By understanding exactly how one's customer is experiencing one's services 24/7, business leaders and IT teams don't have to wait to hear about systems failures from their clients. Synthetic monitoring ensures an optimal user experience 24/7, allowing customers to stream their favourite film even when demand is at its highest.

Pillar 2: Performance monitoring – gain oversight of your systems

Once it's been established that the end user is able to make the initial connection to data centres, performance monitoring is crucial to tracking the internal health of your IT estate. A good performance monitoring system will collect data on everything going on across the entire estate, allowing for complete end-to-end visibility into any performance issues.

Lockdown has not only increased the traffic faced by networks but has altered patterns of consumption, meaning that it's never been more important to monitor your system.

ITRS OP5 Monitor and Geneos are scalable solutions that deliver 24/7 real-time performance monitoring to market participants worldwide. While most monitoring systems take a glimpse of the IT estate every 20 or 30 seconds and average it out over a period of time, ITRS OP5 Monitor and Geneos provide precise insight into the status of one's IT estate at any single point in time. This makes it easy to anticipate problems and act quickly when issues do occur, stopping them from impacting the business and clients, improving customer experience and ultimately freeing up the support team to focus on strategizing for business growth.

Pillar 3: Capacity planning – identify pinch points and model the future

Capacity planning tools are the third essential component of operational resilience. All networks have a limit to how traffic they can cope with at one time yet many firms do not know what that limit is, let alone how to address potential points of failure. This means that when there are sudden shifts in peak demand, such as those caused by Covid-19, many companies don't have the capacity to handle sudden changes.

Firms may have done testing pre-production but that is usually testing just that single application on its own, not in conjunction with everything else that's going on. When they start to hit performance problems, they must be able to understand what about the architecture of their software, hardware and network is running them into problems so that they know at what point the performance has degraded. The only way to actually know this is to watch that production estate operating in real-time.

ITRS Capacity Planner does just this. It uses the data collected from ITRS Synthetic Monitoring, ITRS OP5 Monitor and Geneos to facilitate capacity modelling, planning, testing and stress testing across the entire production estate. Capacity Planner crucially

enables telecoms providers to better understand where and when a failure may occur and establish solutions to avoid disruption down the line.

There are four key components to ITRS Capacity Planner. First, the ability to report what is occurring in real-time on the IT estate and calculate present headroom. Second, the ability to identify potential pinch points existing within the estate and recommend enhancements to be made that would save money or reduce downtime. Third, the ability to predict future outcomes on an IT estate if the present configuration were to continue as is. Last but not least, the ability to facilitate 'forward thinking'; that is, modelling a change in the IT architecture, testing out improvements and accurately predicting what the new throughput would be of the revised estate.

The solution's predictive capabilities can also model and stress test a variety of worst-case scenarios to help firms better predict what their systems can and cannot withstand and take necessary remedial measures. For example, if a platform has experienced 4x usual consumer volumes, they can model what 6x or 8x normal volumes might look like on their systems. From there, predictive software can tell them where the pinch points will be and model any consequent changes they would like to make to their estate to give them more headroom. This therefore allows them to be better prepared in the event of traffic spikes.

Conclusion

Telecoms providers having been navigating difficult waters for years, with Covid-19 adding to pre-existing problems. They face a double edged sword, with their customer base constantly changing their demands on the one hand, and an infrastructure that is difficult to change quickly due to its size and complexity. While there is no quick fix there are actions that telecoms companies can take to regain a sense of control. Through making operational resilience a core business priority and utilising a combination of synthetic monitoring, performance monitoring and capacity planning, firms can prepare themselves for the unknown, minimising outages and boosting customer satisfaction.

[1] https://www.independent.co.uk/life-style/gadgets-and-tech/news/sky-internet-down-broadband-wifi-not-working-loading-service-status-a9531556.html?utm_term=Autofeed&utm_medium=Social&utm_source=Twitter#Echobox=1590506166