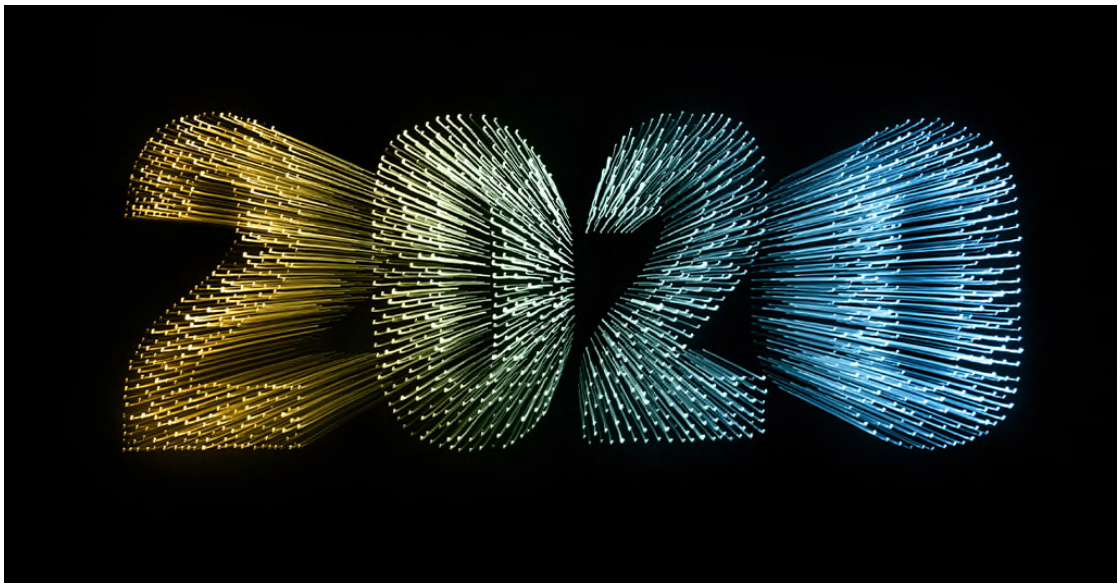
2020 Vision: Watching the Pieces Come Together

January 8, 2020 By Rob Yates



The telecoms industry is experiencing a major transformation as we usher in a new year, offering promise and opportunity to communication service providers (CSPs) worldwide. But this shift certainly didn't happen overnight. A number of trends have steadily advanced on the horizon, while the industry has watched and waited for tomorrow's technologies to reach full maturity and become realistically deployable.

As the 2020 vision comes into sharp focus, let's look at how these strategic trends will finally converge.

Disaggregation

Although it seems as if we've been talking about disaggregated architectures for a long time, this transition is just starting to reach a tipping point as more CSPs move away from proprietary infrastructure and truly embrace multi-vendor optical networks. With the opportunity to adopt a modular, pay-as-you-grow model, CSPs are no longer locked in to any particular vendor, allowing them to select the latest emerging technologies from whichever vendor is first to market — or the vendor that offers the best value for large-scale deployment of mature technologies.

Of course, for this open model to succeed, a robust and mature ecosystem was first required. Now as a critical mass of CSPs are deploying disaggregated networks, this provides sufficient market demand for network equipment manufacturers to deliver interoperable infrastructure and create a more open and competitive optical marketplace.

Yet, as open networking begins to reach a level of mass-market adoption, the disruptive force of disaggregation will bring about new and unique challenges.

Network Automation

It's no surprise that the very nature of disaggregation adds significantly greater complexity to today's networks. As CSPs evolve from a single vendor architecture to an open, multi-vendor model, the traditional approach to management and service assurance also needs to evolve — otherwise, network staff would drown in operational complexity as they try to deal with equipment from a wide range of different vendors.

As a result, the trend toward automation and software-defined networking (SDN) is quickly picking up speed, as more operational tasks are automated with the help of artificial intelligence (AI) and machine learning. This new generation of software applications reduces the need to retrain today's staff to handle tomorrow's multi-vendor architectures.

In fact, AI technology will be key to solving this growing complexity, allowing CSPs to fully realize the economic benefits of disaggregation. With the capability to handle huge amounts of data, AI allows significantly more events to be processed in real-time than humans are able to grasp. This provides greater visibility into the network to not only identify the root cause of any particular issue, but also to uncover signs of impending problems.

However, this increasing dependence on SDN technologies and automation is introducing further challenges with new software applications that don't fit neatly into legacy network platforms, necessitating the use of microservices. For example, Fujitsu offers MicroApplications with pre-packaged microservices, workflow automation and API integration designed to solve specific operational issues in a CSP's unique network environment.

5G Rollout

Moreover, growing reliance on automation also will play a part in facilitating 5G rollout, as mass deployments ramp up in 2020. Increased densification, complexity, network slicing, varying latency… all of these factors and more will strain tomorrow's optical networks as CSPs try to deliver promised 5G services, speed and capabilities. Success will rely on robust, disaggregated optical architecture with the flexibility and scalability that only automation can provide.

This is true not only for transport and core networks, but also 5G access networks as well. In addition to high-speed backhaul to support enhanced broadband, new fiber fronthaul and midhaul networks are needed to provide high availability and low latency at the edge. Support for the Internet of Things

(IoT) is pushing cloud platforms to the edge of the network, changing the dynamics of how optical networks are built.

As we start to see mass rollouts, 5G will be used alongside other technologies, such as Wi-Fi and LoRaWAN, making it easier to enable IoT deployments like smart lighting, intelligent parking or public safety applications. By filling in the gaps in the underlying infrastructure, 5G will drastically change the economics of IoT, allowing applications to be deployed with greater speed, flexibility and efficiency.

A Plan Comes Together

As we embark on a new decade, it is exciting to see how these inter-related trends and evolving technologies will move beyond hype and become reality. With mass deployments of 5G and automated, disaggregated architectures taking off in 2020, this is the year when all the pieces finally fall into place.