ReThinking the Digital Innovation Playbook

For Communication Service Providers

GIG Technology NV
info@gig.tech - www.gig.tech

From Communication Service Provider to Digital Service Provider

Every corner of the planet is bullish on the impact of technology, stirring up governments, businesses and cities to revisit their digital transformation playbooks. Despite this awareness of accelerated change and disruption, Communication Service Providers (CSPs) are still slow to adapt to the heartbeat of the digital world.

Lay of the Land

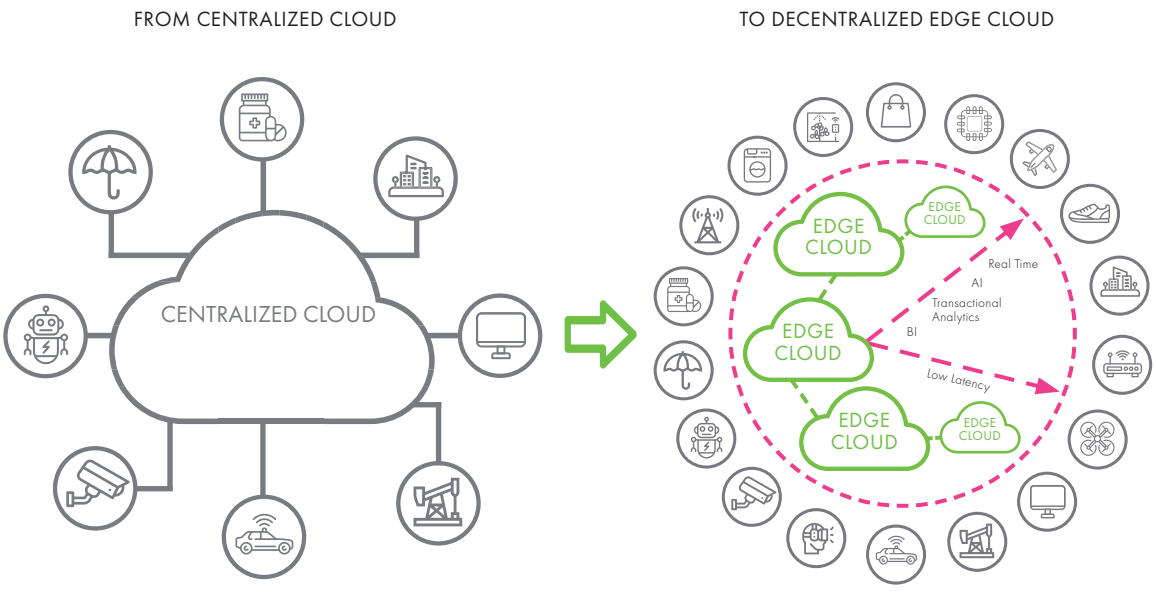
Year-on-year CSPs offer financial markets muted results and single digit growth rates. This stands in sharp contrast with Over-the-Top (OTT) and Cloud players that capture increasingly higher percentages of the digital value chain through smart connected content, services and digital products. Direct customer engagement and ownership models will continue to appreciate in favor of OTT and Cloud players when the Internet of Things (IoT), Artificial Intelligence (AI), voice-enabled devices and automated interactions all intertwine and become the everyday experience of the Internet of All Things.

But does it matter to CSPs? After all, traffic is growing exponentially everywhere. With the CSPs subscriber base growing from 6 Billion connected people to 50 Billion and more "connected machines, objects, Things and devices", the temptation is big, to emphasize even more the network through investments in bigger fixed and mobile pipes to support the massive growth of the baseline. This business as usual thinking, only further, marginalizes the relevance of the CSP through rapid erosion of customer ownership in both consumer and business markets.

Some CSPs indeed did or intend to stretch their efforts by adding media and content distribution capabilities to the network to counter churn and cord cutting rates. Other global and local CSPs complemented network capabilities with System Integration (SI) services through IaaS, SaaS and PaaS offerings to catch a bigger piece of the growing cloud pie. Yet, the former doesn't answer the question: "How will you compete against 7.99 € per month?", while the latter results in reselling low-margin cloud capabilities of others. There is a silver lining, however. CSPs can win back customer ownership through edge cloud and lead digital disruption by adding distributed capabilities to their networks strengths.

Edge will eat the Cloud[2]

The next wave of the Internet is characterized by an unparalleled explosion of data **"in the last mile or at the edge"**. When a billion different Things, AI-driven services and application come online, the need for agile and on-tap cloud resources closer to where the information is generated and processed becomes a necessity. While centralized cloud topologies and monolithic Data Centers (DCs) were instrumental for the previous Internet growth phase, the strategic drivers of IoT and AI, combined with the drive to agile software-based organizational capabilities, accelerate the need for a more distributed cloud architecture and smaller DCs. Simply put, a centralized cloud can't handle this much data being generated at the end points.



Leading Digital Innovation from the Edge

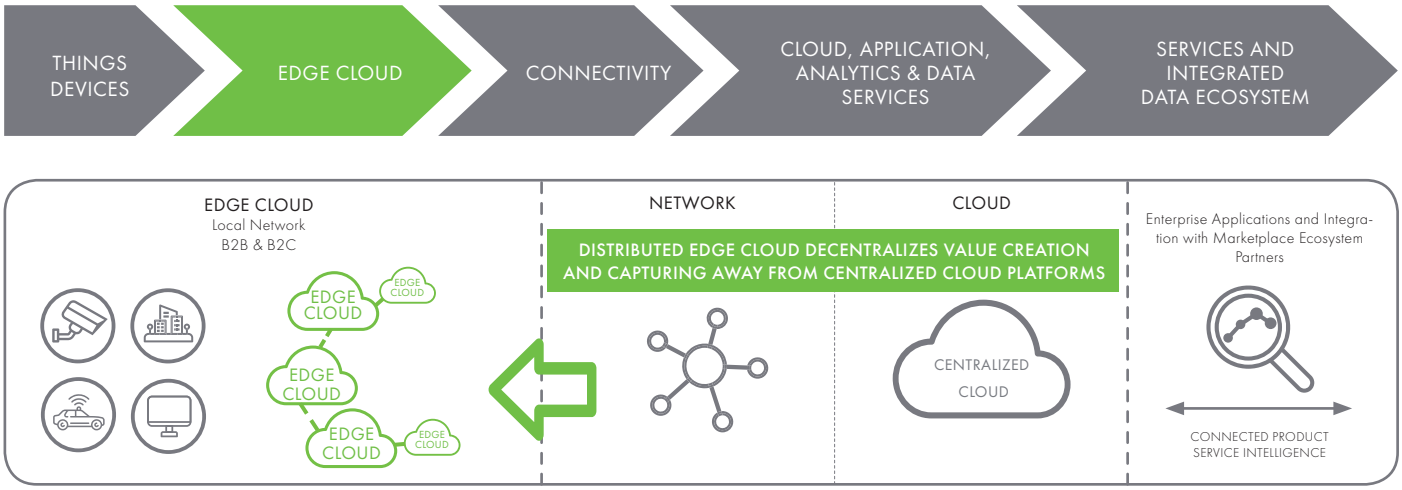
Agility and Speed "Everywhere, Anytime"

While more and more workloads are born in the cloud or move to the cloud, there is also the opposite move to process data and specific workloads at the edge. With the massive drops in storage and compute costs over the last years, it is economically feasible to install smaller, scalable edge capabilities "anywhere". This new distributed edge cloud paradigm with cheaper, better and faster resources as cost driver enables digital innovation closer to the edge.

While most use cases look at better latency to justify edge investments, this merely reflects part of the edge paradigm. Local compute and storage "at the edge" also means better **security, privacy, economy and scale at lower operational cost point.** These new capabilities enable CSPs to offer new services to Business-to-Business (B2B), Business-to-Consumers (B2C), and Business-to-Developer (B2D).

Where today's value is created and captured in a centralized cloud only, edge cloud turns the paradigm upside down and enables **value creation and capturing at the edge through distributed interconnected ecosystems and market places.** This allows new players to enter the market, disrupt the existing centralized value chain and create new business models closer to the edge. Over time, with the rise of distributed business models across trusted stakeholders, value creation and capturing will happen in every point of the network to fuel distributed AI intelligence.

FROM CENTRALIZED TO DECENTRALIZED CLOUD MODEL



Trusted Data Ownership

The impact of security loopholes on privacy and misuse of personal information when data governance practices and security are missing, became clear overnight with the Facebook-Analytica debacle in 2018. It also made the world aware of conflicts of interest in platform business models. With the General Data Protection Regulation (GDPR) in force since May 25, 2018 in the EU, European citizen are now covered by the strongest data protection rules in the world. While the EU gave power back to EU citizens and redesigned the boundaries around data ownership and use, it is also important to point out the Achilles heel.

The Hotel-California-Syndrome

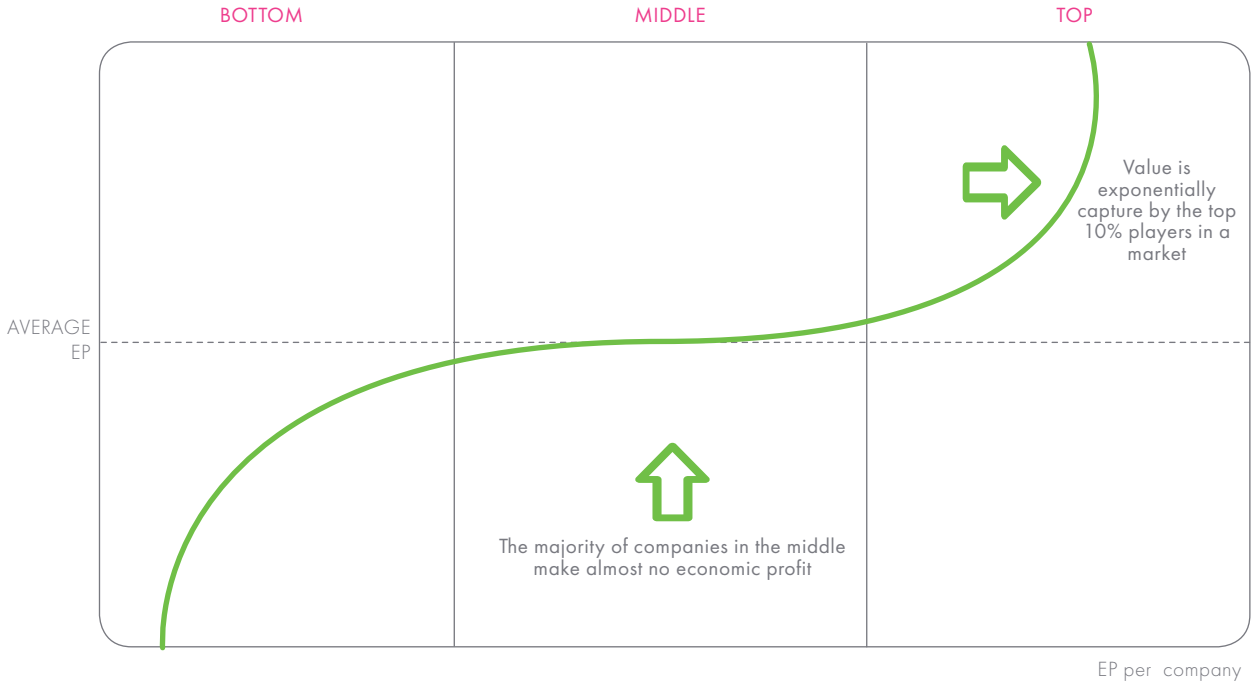
"You can check-in any time you like, but you can never leave" is the new normal in the digital world. In other words, very little will be achieved when citizens and businesses are locked-in by centralized global cloud players and digital platform monopolies. Global OTT and cloud providers can move information between data jurisdictions in an instance to avoid tighter regulations of a geography or nation. Still, the GDPR generated a massive ripple effect across the world. Businesses, governments and citizens are all aware of the consequences of current unethical data grabbing practices. Yet, bigger and more holistic questions need to be addressed, beyond the traditional "Who owns the data?" More important is **"Can I trust you with my business and**

strategic assets? How can we create value for every stakeholder in the value chain?"
With governments, businesses and citizen coming to terms with the Hotel-California-syndrome, a neutral, secure and trusted mechanism is required to avoid lock-in from cloud data siloes. When **"Every company needs to become a software business"**, the answer to these questions also impacts the future growth of businesses and the choices they make. When value shifts away from the center, distributed edge cloud resources offer businesses a way to redesign security and create trusted partnership models across the value chain. This also means that trusted and secure interactions are needed across the entire ecosystem. **Trust becomes the currency**, not merely the data itself.

The Generosity of Network Effects is Radically Uneven

While CSPs tend to look for stable and predictable business models, the next wave of growth is radically "unevenly distributed" because of the automated network effects that IoT, AI and related cloud services create. New business models are not necessarily linear and predictable. The digital world of today is already based on massive network effects created through the interplay of APIs, data and applications.
When network effects kick-in, an accelerated growth follows for companies that are able to capture the value. Today this results in a "winner takes it all" in favor of a handful of global OTT and cloud providers. With the sheer amount of connected Things that will be onboarded in the next 5 to 10 years across all industries, this means network effects kick-in more rapidly than ever before.
Companies that are ahead of this new innovation curve will be able to potentially capture 90% of the economic profits in such conditions. However with the move towards distributed intelligence, CSPs can grab this momentum to redistribute value through edge capabilities and to rekindle customer ownership. Taking the position of a trusted data broker between stakeholders in the value chain offers a new way to change current market power and challenge the status quo. As more and more businesses become part of the CSPs edge ecosystem, this also creates a compounding "network effect" within the ecosystem. When stakeholders feel safe to share and enrich data and applications across their ecosystems - through for example open APIs, developer communities and local market places – it enables the much needed transformation of the current digital value chain with a ripple effect through the entire market place or ecosystem. It also avoids further lock-in from network effects created by global cloud providers.

THE POWER CURVE OF ECONOMIC PROFIT (EP) IS RADICALLY UNEVEN



Leading Digital Innovation from the Edge

The growing market demand for trusted and secure edge cloud capabilities offer CSPs a unique moment to play a more prominent role in the next wave of the Internet. CSPs have specific strengths – their distributed network assets – that are pivotal to push workloads closer to consumer devices and enterprise networks, but strong competition is looming and rapidly transforming edge into a lucrative revenue opportunity.

Uberize your Real Estate

Telco Edge is often understood as a concept that is purely related to the Telco network through the progress of Multi-Access Edge Computing (MEC) to enhance 5G evolution and fixed networks. CSPs can indeed reduce overall costs by leveraging the strengths of their distributed infrastructure and existing real estate with smaller edge capabilities. Digitizing network assets through compute and storage capabilities in specific nodes optimizes overall productivity and delivers a better baseline to effectively compete with the lower cost structures of OTT and Cloud players. This also applies to CDN networks capabilities. Placing resources closer to the edge lowers the cost of video streaming services. Distributed edge nodes lower incremental investments in traditional network equipment when traffic grows.

However, with hyperscale cloud providers also moving towards the "edge" to complement centralized cloud services, this Telco network-focused notion of edge represents a new challenge for CSPs. Edge capabilities deployed by centralized cloud players are perhaps still limited in scope and mainly focused on driving more data to a centralized cloud (and accelerating lock-in). Despite the limitations, they compete now directly with CSPs with a customer "first" approach, further eroding CSPs customer ownership in a market that is looking for innovation, mindshare and digital capabilities.

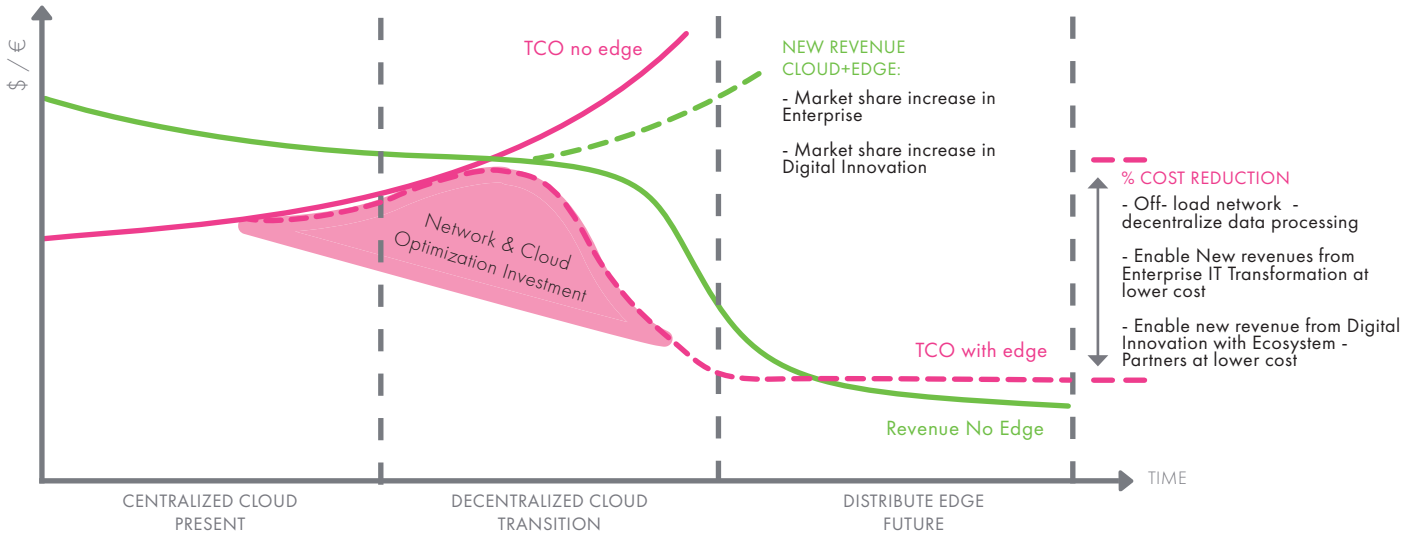
Edge Cloud as a Growth Engine for Digital Innovation

A fully managed and high performance IaaS cloud at the edge of the fixed or mobile network complements the CSP's central cloud-data center and creates a focus on revenues as well as on cost optimizations. It creates greater efficiency and agility to support enterprise customers with flexible hybrid IaaS capabilities "anywhere". Off-loading centralized workloads to the edge can be a first step to enter the market.

A CSP operated and self-branded edge cloud complements a connectivity-based business model with edge-delivered IaaS, SaaS and PaaS models at far higher margins than current centralized-hyperscale-cloud-only and on-premise-only models.

Furthermore, CSPs can leverage their brands to become a neutral, trusted custodian of data to gain back customer mindshare and ownership.

Creating neutral distributed spaces at the edge and in the network of the CSP, offers enterprises alternatives to keep data locally or shift workloads between multiple cloud providers easily. Edge cloud multi-tenant capabilities allow for repartitioning of data and creates a better and more secure governance mechanism to interface with developer communities and self-branded market places, than current edge solutions offered by hyperscale cloud providers.



How will you manage a Billion different Things cost efficently?

With the coming rise of connected Things, AI intelligence and a plethora of vertical and horizontal PaaS and SaaS applications arising at the edge, centralized IoT cloud platforms offerings will face a steep rise in costs. Every additional Thing added to the network drives incremental costs and exponential spikes will follow. Complementing centralized IoT topologies with edge cloud brings down marginal cost increases when the number of items that interact with the network grows. Reducing operational costs through 0-touch automation allows operations to scale costs efficiently and bring the cost curve down.

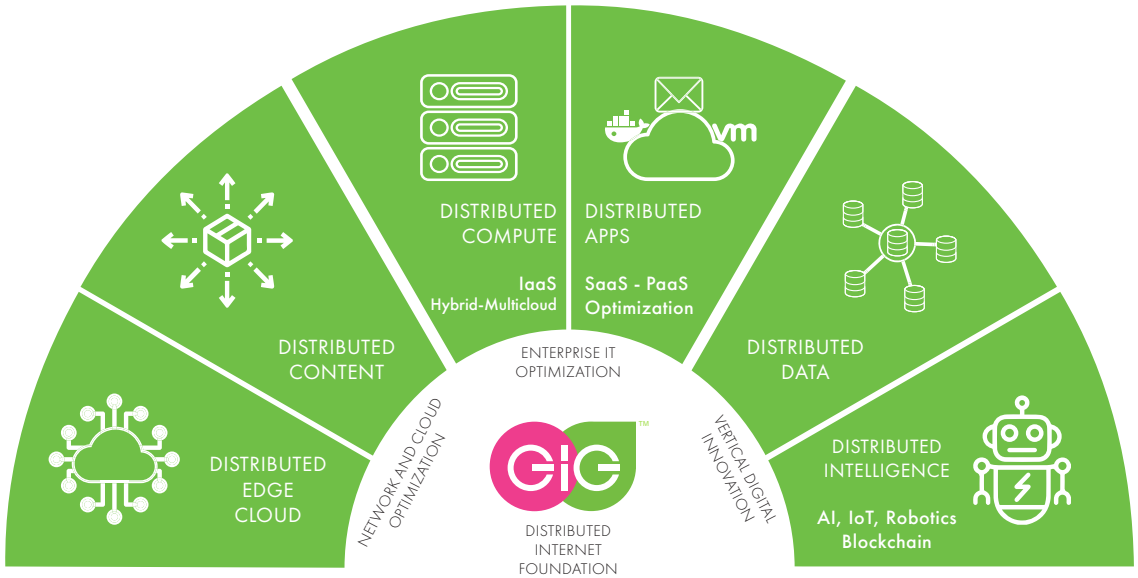
KEY TAKEAWAY

The Internet is transforming yet again into a distributed interconnected mesh through the interplay of IoT, AI, new SaaS and PaaS services and down the line ledger-based business models. For this nascent new paradigm to become mature and economically viable at scale, a new distributed infrastructure is needed that brings cloud resources closer to the edge.

Scalable, distributed Edge cloud is a foundational element in this new topology. It brings better latency, improved cost, security, trusted data ownership and scale at lower operational cost points. A new distributed topology disrupts today's digital value chain and allows value to flow to the edge.

This paradigm shift offers CSPs a new digital playbook to enter the cloud market by offering more agile and economical edge cloud capabilities. Through new edge-based differentiated IaaS, PaaS and SaaS services, that go beyond the current centralized hyperscale-cloud-only and on-premise-only models, CSP can complement connectivity with digital services.

The fragmentation-effect edge has on the digital value chain, provides CSPs with a unique momentum to redistributed value and bring much needed trust in interconnected ecosystems. By becoming custodians of trusted data and by stepping in as a neutral player, CSPs can create the network effects needed for trusted market places to become vibrant growth engines of digital innovation. To monetize the opportunity, CSP will need to become orchestrators of value creation across partners, customers and open developer communities.



[1] Network Service Providers (NSPs) consist of telecommunication companies, data carriers, wireless communication providers, Internet Service Providers and cable companies to provide broadband fixed and mobile access to consumers and businesses.
[2] Gartner 2017
[3] McKinsey 2018
[4] McKinsey 2018

About GIG Technology

GIG Technology is a high-growth European technology services company that delivers Edge Cloud-as-a-Service by combining advances know-how of operating complex distributed full stack environments with its advanced G8 edge cloud software. G8 Software powers scalable, multi-tenant, secure and distributed storage and compute resources, capable of running any type of workload at any location independently. Each G8 has its own standalone functionality and self-healing capability to operate in a distributed way. GIG Play Automation and Marketplace facilitate the deployment of applications and associated infrastructure in one go. With GIG Automation, DevOps teams can now use standard tools to deploy predefined application stacks. GIG is dedicated to expanding its GIG Play Marketplace with application and solution partner integration and reference architectures now and in the future.