Solution Brief

Product Management
Telecommunications Carriers, MSOs, Utilities

KGPCo* Eases CoSPs' Edge, Core Deployment Pain

KGPCo® OneTouch™ delivery model, leveraging Intel® technology, speeds up network and cloud deployments by delivering turnkey consulting, integration, logistics, and support services.

The world's ravenous appetite for bandwidth continues to grow and, as a result, communications service providers (CoSPs) are rethinking how they build their networks.

One of the most significant data appetite drivers is 5G and the new ways it can be deployed using virtualized network elements running on servers using Intel® architecture processors and connected by open standards. These new networks deliver more bandwidth, flexibility, and features than their predecessors. For the first time, CoSPs can break away from the traditional single-vendor, hardware-centric approach and choose network elements from a range of vendors. However, this virtualized approach can add complexity when there's a need to update or troubleshoot the network. With this pivot to virtualized RAN solutions, the industry needs solution providers that will work together with innovative technology companies to create a blueprint and accelerate the deployment of these networks while also providing the foundation to operate them.

KGPCo enables those CoSPs that are wanting to disaggregate and virtualize their infrastructure by helping them pivot to be more agile in delivering new services to their customers. KGPCo is leveraging its proven delivery models to help them accelerate the integration and adoption of vRAN to realize its benefits.

The KGPCo Solution Innovation Center (SIC), is where the company works with Intel and other networking and software companies. The SIC presents an opportunity to validate solutions and becomes the key enabler to solution innovation and can help operators, together with technology leaders, make technology decisions quickly and efficiently. These decisions range from ideation and design of solutions to validating new network architectures. KGPCo's SIC engineering teams create the blueprints that enable operators to adopt new, open architectures that decrease the complexity in their network and give them a competitive advantage. Once the fully integrated and optimized solution is validated, KGPCo takes the blueprint to market as a fully integrated solution via our KGP services team, making it ready to test and deploy in CoSP networks for their customers. Through our services team, the CoSPs can take full advantage of our tenured experience in RAN, Core, and Edge to far edge engineering, integration, and deployment expertise.

5G is also a catalyst for the development of edge networks. 5G networks leverage the macro cell base stations built out for 4G but need to be augmented with smaller base stations to provide blanket coverage, i.e., densification and increased capacity. Mobile network operators (MNOs) can use Open Virtual RAN software running on servers and using network orchestration capabilities to remotely manage the service and the server. These edge networks provide the compute capabilities and advanced aggregation services for 5G installations.

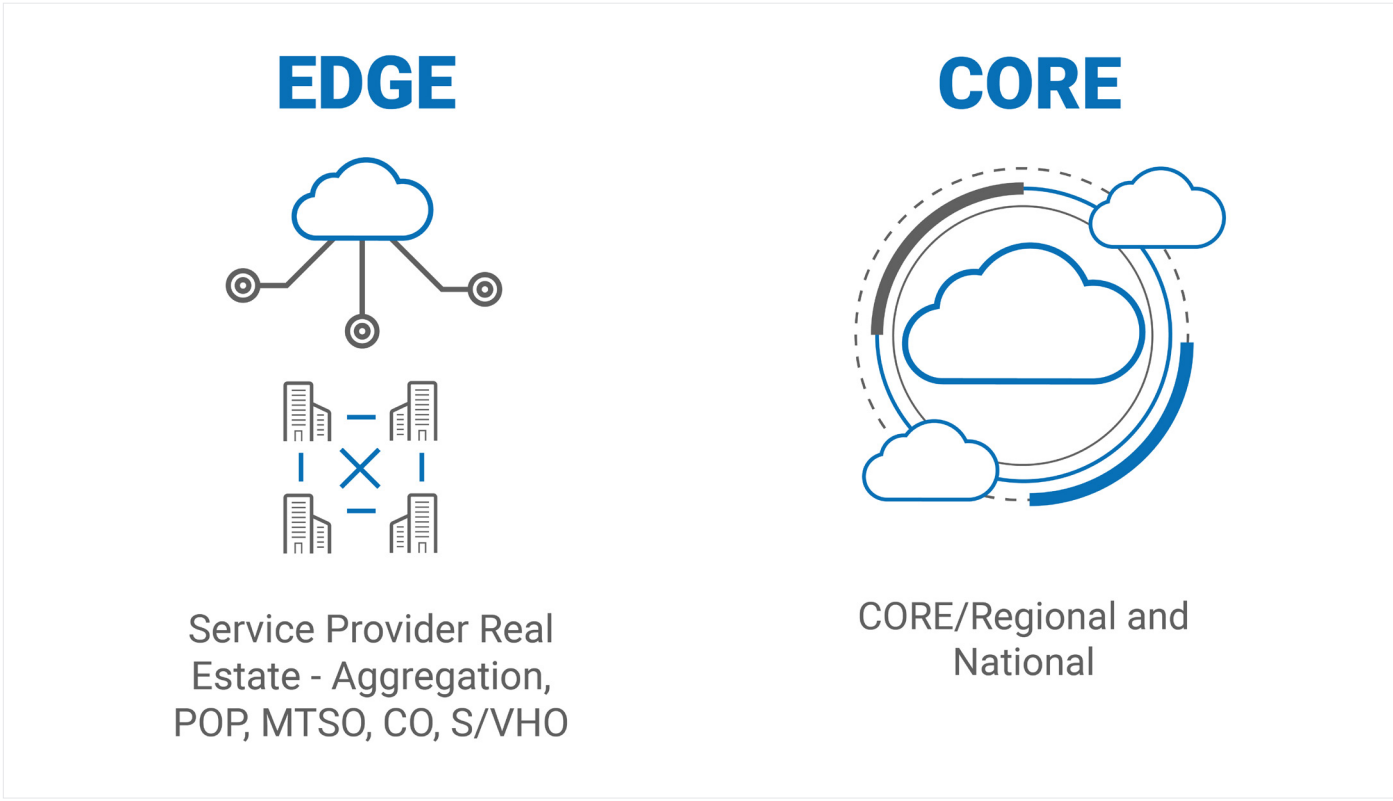

Figure 1. Definition of edge and core network functionality.

Figure 1 shows the different functions of the edge and the core networks:

- **Edge:** Typically housed at a network point of presence or central office (CO) hub, the edge location aggregates smaller far edge and enterprise edge locations, providing both compute services and advanced networking functionality like edge routing, aggregation routing and high throughput network multiplexing for aggregating data bound for the network core.
- **Core:** Aggregates all edge locations for a region or a nation supporting 100GB – 400GB, approaching 800 GB backbone networks as well as network cloud services.

The edge computing model provides additional scale, performance, and functionality. It also enables low latency services which help unlock business value by delivering cost savings, new functionality, and new service opportunities for CoSPs.

CoSPs are balancing a growing number of conflicting objectives:

- Integrating new services at the edge while seamlessly adding them to their existing network and service portfolio.
- Deploying new services as quickly as possible given the system complexity and impact on their core network.
- Keeping costs low while also investing in a growing number of new technologies.
- Being agile but requiring expert engineers and technicians to design and deploy their solutions.

Enter KGPCo, a single-source solution provider for network and IT infrastructure logistics, network planning and design (RAN/Transport/Edge), integration, system deployment, optimization, and support. KGPCo OneTouch™ provides customers with end-to-end solutions that cover the entire network from the data center to the far edge, including their enterprise customers.

KGPCo's team of experts provide implementation solutions that include all aspects from system design and architecture through integration and field installation, configuration, test, turn up, and ongoing 24x7 technical support. KGPCo enables its customers to redesign their enterprise edge, far edge, edge, and core networks to take advantage of disaggregated networking technology, leveraging virtualization, innovative optical solutions, security, and new innovative approaches to PON, using technologies inclusive of Intel processors. They enable hyperscale cloud companies the opportunity to diversify their business in new ways as well as open new market segments to any other companies providing technology services to carriers or enterprises.

KGPCo's customers are communication service providers, network operators, MSOs, utilities, cloud services providers, host providers, equipment manufacturers, and enterprises that all need networks to connect people, places, and devices.

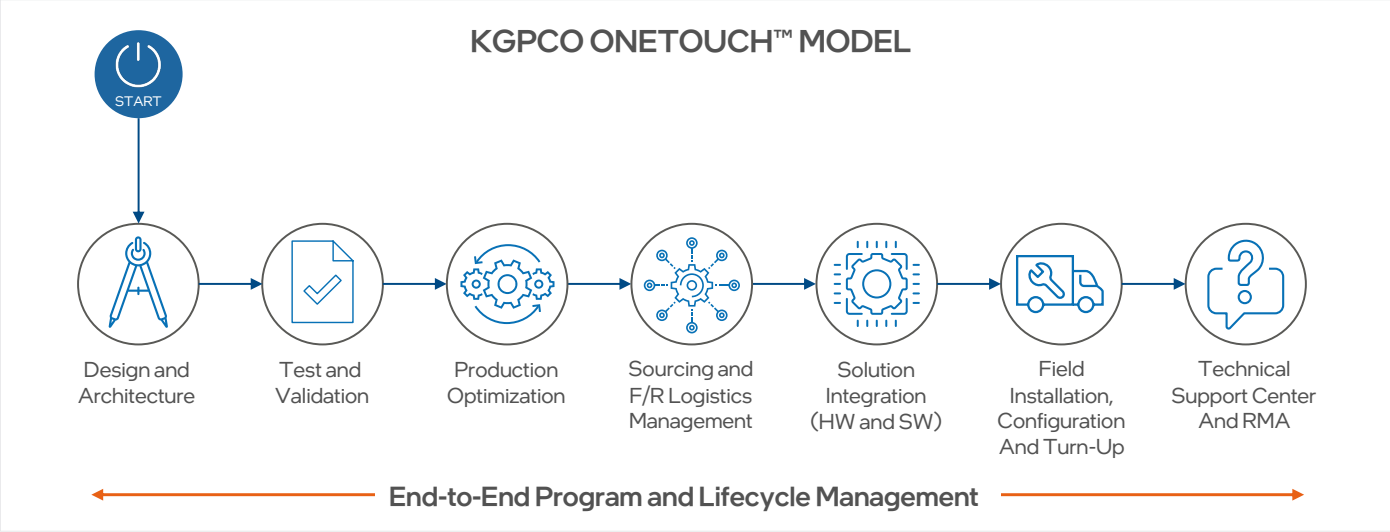

Figure 2. Steps involved in KGPCo OneTouch service deployment model.

KGPCo OneTouch™ Solution: A Turnkey Approach

The KGPCo OneTouch™ service (see Figure 2) allows operators to seamlessly deploy legacy and disaggregated technology at scale. KGPCo OneTouch™ provides a seamless order-to-deployment process that enables consistent delivery of disaggregated cloud solutions helping to provide customers with reduced cycle time, efficient order management, faster time to market and an overall reduction in CapEx.

In North America, for example, these services are backed up by a nationwide matrix of network integration centers and 14 distribution centers.

Because of its distinct offering, KGPCo has become the go-to supplier for many CoSPs enabling them to build, optimize, and transform networks that connect the world.

KGPCo's OneTouch solution is further enhanced by the company's cloud system integration (SI) and professional services teams that enable CoSPs to transition from traditional services towards new, virtualized and software-defined solutions.

For KGPCo's customers who wish to advance their network disaggregation and virtualization, they can depend on KGPCo's white box compute and networking software solutions to run their networks. KGPCo designs and builds customized solutions that deliver significant equipment cost savings to them, while providing cutting-edge experiences for their customers. The company's innovative white box solutions combine software and hardware, tailored to customers' needs. Hands-on experience includes:

- Deploying 5G-ready cloud nodes in markets nationwide
- Deploying disaggregated networking solutions globally from edge to core
- Building over 80% of a tier-1 carrier's global cloud and white box deployment from 2016 to present
- Built and deployed a cluster-based disaggregated networking solution
- Executing white box integration with leading NOS suppliers for both CoSP and MSO providers
- Firewall migration and consolidation of legacy systems while increasing capacity for security functions servicing both enterprise and network needs
- Blueprinting edge and CPE devices for private mobility

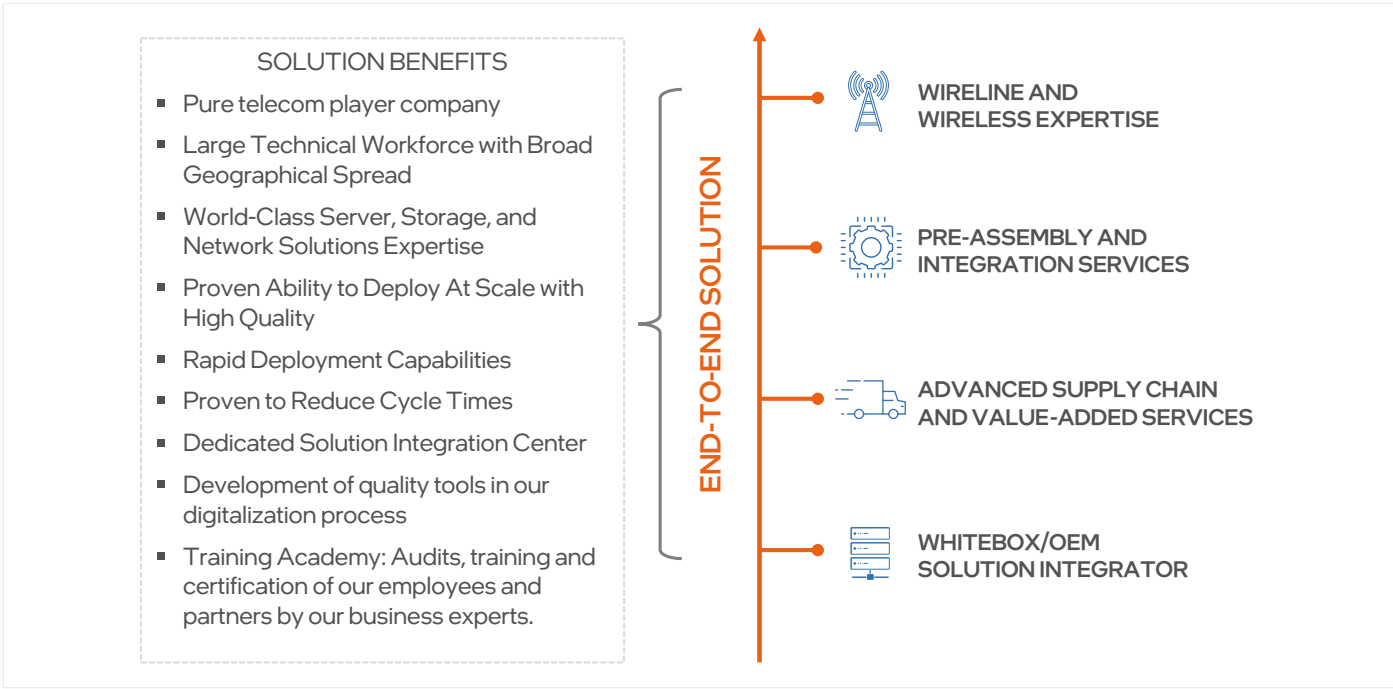

Figure 3. Summary of KGPCo benefits and market expertise.

What Makes KGPCo Different

Results-Oriented Company Culture

- Risk analysis
- Adapted tools, processes, means
- Factual performance indicators shared with customers

KGPCo is unique in the market due to its size, responsiveness, and its customer-first commitment (see Figure 3). KGPCo is equipped to support national, capital-intensive programs responsibly and effectively with all the tools, capabilities, systems, and controls inherent to industry-leading firms in place. Because of its private ownership, the company also has the luxury of considering our client's interests and long-term benefits instead of short-sighted market-driven demands. The company also has retained the responsiveness afforded to smaller companies.

Additionally, KGPCo's experience with successfully managing large-scale, multi-facility implementations with aggressive schedules is invaluable. Its approach helps provide a seamless transition, limiting traditional risks associated with implementing service with a new provider. The company's disciplined approach to implementation includes a "define, plan, execute and deliver" structure supported by processes to prevent disruption within the supply chain.

These key reasons are why over 2,000 customers, including the major (Tier-1) CoSPs, MSOs, and utilities trust KGPCo with their networks. It's a trust that is hard-earned, built on a culture that values long-standing relationships and a fearless devotion to do whatever it takes, whenever, and wherever.

Intel Accelerates the Network Edge and Core

KGPCo works with Intel to access the technology required to achieve major network architectural technology changes. Intel is a trusted advisor and provides a portfolio of powerful, efficient, and open platforms. Intel provides a technology leadership role in both 5G and edge networking with technologies that CoSPs need for optimum performance. Intel solutions for these applications include:

- 4th Gen Intel® Xeon® Scalable processors are built for cloud-optimized edge and core networks. The CPUs deliver edge application, service, and control plane processing; high-performance packet processing; and signal processing.
- Intel® Ethernet 800 Series Network Adapters deliver speeds up to 100GbE and feature support for a full range of packet timing and synchronization technologies that are essential for the handover of data from the base station to the user equipment in 5G networks. The adapters also feature Application Device Queues (ADQ), Dynamic Device Personalization (DDP) and support for both iWARP and RoCEv2 Remote Direct Memory Access (RDMA).
- Intel® FPGA Programmable Acceleration Card (Intel® FPGA PAC) N3000 is a customizable SmartNIC platform for accelerating 5G and network functions virtualization (NFV) workloads.
- FlexRAN reference architecture is a complete layer 1 PHY solution for enabling virtualized RAN architectures. FlexRAN™ reference software offers superior performance and enables building and deploying highly optimized, feature-rich, 4G and 5G scalable cloud-native vRAN solutions.
- Intel® Smart Edge Open is a Kubernetes-based portfolio of edge software solutions that enables highly optimized edge platforms to manage applications and network functions with cloud-like agility across any type of network.

The rush is on to deliver new edge and core network services. Intel is working with companies like KGPCo to develop and accelerate the deployment of edge-centric network technologies and services. This mature ecosystem is rapidly delivering optimized workloads, software platforms, and emerging use-cases that will meet future network edge and core demands.

Virtualized edge and cloud networks offer dramatic customer benefits but are a new paradigm for many CoSPs and have the potential to add more complexity without a single vendor to turn to for support of the entire solution. KGPCo answers this need with its OneTouch™ Solution that can provide customized technical and logistics expertise to every aspect of building and operating the network. Working with Intel, KGPCo is delivering innovative core and edge network solutions to support next-generation network services.

Learn More

KGPCo Home Page

KGPCo OneTouch™

Intel® Network Builders

Intel® Xeon® Scalable processors

Intel® 800 Series Ethernet Network Adapters

FlexRAN™ reference architecture

Open Visual Cloud

Intel® Smart Edge Open

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