UNIFY: Transforming infrastructure with NFV for
Ooredoo Qatar

Like many operators, Ooredoo is going next-gen with its network architecture. In the Qatar operator's case, UNIFY is the strategy driving ICT transformation on the road to delivering a digital customer experience through simple and agile IT. As part of this strategy, the company is working to transform service delivery via a series of tech initiatives, including NFV.

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Ooredoo wants to be able to give any service to any consumer or business customer anywhere. What's different is the operator wants to do so in days instead of months, and at a disruptive and unheard of price point. As well as network-based applications, the company expects its network to be able to manage new, advanced services, including HD VoLTE and the Internet of Things (IoT).

Ooredoo set its sights on leading-edge NFV technology to move past the limitations of legacy systems and deliver on the promise of scalability, agility, flexibility, and reduced costs for operators looking to virtualize their network infrastructure and deliver specific functions. To shift to NFV as part of its broader multi-vendor strategy, Ooredoo worked with Huawei to deliver key components and integrate and deploy the overall solution for its NFV cloud.

Integrating a variety of services and solutions from different industry vendors brings with it inherent complexity and a unique set of challenges. Ooredoo selected a multi-vendor approach comprising Huawei, VMware, HP, and Cisco for projects across Qatar and Kuwait. The operator also selected Huawei as Prime System Integrator (PSI) to orchestrate and integrate multiple vendors' systems into one functional and cohesive NFV infrastructure.

The virtual IMS (vIMS) project based on NFV was deployed in two countries – Qatar and Kuwait. Both applied Huawei's telecom application IMS, but both followed different approaches. In Kuwait, the existing IT infrastructure was reused; in Qatar, Huawei's PSI role involved delivering an E2E solution consisting of third-party infrastructure, Cloud OS, and Huawei's IMS. The two deployment scenarios were based on the same design blueprint

of converged ICT infrastructure; shared elastic IT resources; and a multi-tenant, multi-domain system with a single management platform.

The partnership between Ooredoo and Huawei for the projects across Kuwait and Qatar comprised four core steps. One, strategize and clarify the requirements of each project. In Qatar, Huawei served as PSI over a horizontal multi-vendor architecture, coordinating VNFs and NFVIs (network functions virtualization infrastructure) from both VMware and HP for E2E delivery. In Kuwait, Huawei worked as part of a broader Ooredoo-led systems integration project supported by other vendors, where it contributed to VNFs on the application layer alongside VMware.

Ooredoo developed its UNIFY ICT architecture based on leading IT technology and industry best practice, enabling Ooredoo to host IT, NFV, and public cloud. This approach differs from others in the industry because it's fully ICT convergent, using the same platform for all domains and services as opposed to different IT and NFV siloes. The company believes that true ICT deployment is the only way to optimize its cost structure, maximize synergies, and implement the required agility.

Recognizing the challenges Ooredoo and its vendors faced to take on these ambitious projects, especially in the early days of Ooredoo's transformation journey, close partnerships between Ooredoo and the vendor community was supremely important to pilot UNIFY in Qatar and Kuwait. Huawei flexed its system integration capabilities in Qatar by coordinating with other vendors' infrastructure and cloud OS, leading to the successful demonstration of the solution to Ooredoo's Group Technology Leadership (GLT) team.

Ooredoo now boasts two live deployment cases

of the first instantiation of UNIFY architecture that can run IT and NFV services on the same platform. In addition to VoLTE and VoBB, Ooredoo has a roadmap for migrating other services such as data and legacy voice to NFV. It also plans to proliferate the UNIFY architecture across the Ooredoo footprint.

The two parties also agreed to utilize Huawei's open NFV lab in Xi'an to test solutions, while at the same time focusing on overcoming on-site integration and testing issues.

The main challenges Huawei faced during the project were the end-to-end integration and delivery of these third-party NFV-infrastructures, including installation and testing. A high level of customization in software from VMware provided an additional challenge: the entire E2E NFV solution included new versions of VMware with previously unseen features and functionality.

To help manage these challenges, Huawei applied PSI to integrate the complete system, covering data center design and delivery, and the management and orchestration of third-party NFVI services.

Huawei leaned heavily on the NFV open lab in Xi'an to develop the solution for Qatar, verifying telco-over-cloud architecture feasibility and performing tests in a simulated live environment. Lab tests also verified the availability of functions and features like disaster recovery and the integration capability and feasibility of new features from VMware such as its distributed logical router (DLR) and edge service gateway (ESG)

The benefits to Ooredoo of this extensive

testing was the ability to manage a multi-tenant environment that shares the UNIFY infrastructure. UNIFY features a heavily secured NFV environment that protects virtual functions, a unified IT cloud management portal capable of managing multiple data centers in isolated sites, and a full NFV solution to meet the requirements of existing IT and telecoms applications.

Huawei also provided virtualized network functions (VNFs) to bolster service delivery, including a virtualized IP Multimedia Subsystem (vIMS) for providing IP-based services over LTE. Ooredoo could then deliver one of the Middle East's first VoLTE services on a virtualized infrastructure.

After deploying UNIFY, Ooredoo could construct cloud data centers in less than two months, including the capability to share data center resources when required. In practice, this meant complete vIMS deployment in just three hours, thus ensuring extremely quick VoLTE deployment.

The Deputy CEO for Ooredoo Group Waleed Al Sayed explained the significance of VoLTE as an enabler for operators to take advantage of existing infrastructure. "The successful deployment of Voice over LTE is another compelling indication of the strength and superiority of our network," he said. "We have designed our infrastructure to evolve and grow with the latest cutting-edge technology, which enables Ooredoo to be the first to introduce these important new services for our customers. The success of this project contributes to Ooredoo's leadership on the global innovation path towards fully-converged Information Communication Technology (ICT)."