

Ooredoo ICT & NFV Managed Services Case Study

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Ooredoo Kuwait ICT & NFV Managed Services

Case Study

Executive summary

Located on the Persian Gulf between Iraq and Saudi Arabia, Kuwait is less than 18,000 square kilometers, but its strategic and economic importance outweighs its size due to its crude oil production (6% of the world's oil reserves) and geographic position. The country's technological sophistication also stands in contrast to other parts of the Middle East. Kuwait's 2.8 million people enjoy some of the world's largest and most advanced desalination facilities and buildings, providing a more balanced environment despite the desert climate in the country that ranks 10th in per capita GDP.

The country's advanced economic and technological conditions attracted a highly competitive telecommunications market with a relatively high penetration for fixed and mobile services, and a nearly saturated voice services market. Three operators compete for the relatively high ARPU the country offers, including Zain, Ooredoo and VIVA. All three operators offer LTE and are preparing or deploying LTE-Advanced, indicating the players recognize Kuwait as an advanced market and that competitive data capacity and packaging will be critical to market differentiation.

Ooredoo operates in 12 markets in the Middle East, North Africa and Southeast Asia. In Kuwait, the company prioritizes capturing data growth, growing information communications technology (ICT) capability and increasing operational efficiency. Ooredoo Kuwait provides mobile, broadband Internet and corporate managed services. The company's subscriber base in the Kuwait market was 2.4 million as of October 2015. Revenues increased 11% and EBITDA increased 30.9% year-to-year for the first nine months of 2015.

Ooredoo Kuwait's plan to continue this strong performance includes increasing efficiency and reducing the time to deliver new services to market by outsourcing its infrastructure to Huawei. However, the company's outsourcing agreement is no ordinary contract. Ooredoo is outsourcing both its IT and network operations to Huawei with the plan to unite the two organizations and build a common infrastructure using the latest innovations of network functions virtualization (NFV) as well as network and IT operations.

"The transformation includes all network services and IT," said Leif Olsgaard, Ooredoo Kuwait's program manager for the project. "The normal transformation in terms of outsourcing operations across telecom is the network only or IT only. So this is quite a complex transformation."

While many operators are talking about moving to NFV and leveraging the move to integrate network operations and IT, few, especially at Ooredoo Kuwait's scale are actually doing it.

"It's part of most operators' road maps. We are moving a little bit ahead of our colleagues in other countries. We are doing this to be more cost efficient and decrease time to market for new services, and it also allows us to focus on the core of what we do and that is to secure the best experience for our customers," Olsgaard said.

Overview — brand and technology unification

Ooredoo, which is Arabic for "I want," chose unification as the theme of its single-brand identity in 2013. The theme represents the aspirations of its customers and the core belief the company can enrich customers' lives through telecom services. The brand unification signaled Ooredoo's plan to leverage its resources across regions to serve global customers. The new brand was adopted by Qtel in Qatar, Indosat in Indonesia, Nawras in Oman, Tunisiana in Tunisia, Nedjma in Algeria and Wataniya in Kuwait.

The brand change also signaled a customer-centric approach to the company’s business strategy that involved streamlining operations to allow for concentration on customer experience improvement. Modernization of the core network and IT infrastructure is a critical first step in this strategy, with the goal of allowing operators to focus on customers, products and packaging rather than on running the infrastructure.

Unification and virtualization will lower costs and speed deployment

The name Unify was given to Ooredoo’s infrastructure transformation program, which includes unifying network operation and IT to create a combined service delivery environment with the following goals, according to Stephane Flamme, senior director of IT for Ooredoo based in Qatar:

- Provide any service using a common delivery environment.
- Deliver the service anywhere across Ooredoo’s multicountry footprint.
- Reduce service creation and delivery time from months to days.
- Disrupt the competition by improving service delivery at significantly lower cost.

In summary, Ooredoo is testing the power of an NFV-based single infrastructure for networks and IT to deliver services faster and more cost effectively.

Figures 1, 2 and 3 highlight the transformations necessary to accomplish this set of objectives.

Ooredoo transformation

Figure 1 **Phase 1: IT Virtualization**

Traditional	Virtualized
Proprietary hardware	Common hardware
Low hardware utilization	High hardware utilization
Isolated databases	Consolidated storage
Manual deployment	Lower capex
High cost	Reduced manual deployment

SOURCE: OOREDOO AND TBR

Figure 2 **Phase 2: UNIFY**

Automated	Cloud
Common hardware and storage	Global resources
Lower opex	Mix of hybrid private and public cloud
Automated deployment and networking	Optimized capex and opex
Local reach	

SOURCE: OOREDOO AND TBR

According to Flamme, within the data center and network operations, the changes outlined by Figure 3 will be required to carry out the transformation to Unify.

Figure 3

Technology and Process Changes

Current	Unify
82 data centers	<25 data centers
10,000 server racks	3,000 server racks
>100 types of proprietary hardware	A few types of x86 hardware
Isolated databases	Common storage capabilities
Costly handcrafted hardware	Low-cost commodity hardware
Manual processes	Automated deployment

SOURCE: OOREDOO AND TBR

NFV pilot projects — months to hours for new products

To test the viability of the Unify program, Ooredoo engaged in two pilot projects for virtual IMS applications. Both projects involved Huawei’s IMS virtual network functions and VMware’s vCloud for NFV Platform, including the vCloud Director for automation and VMware NSX. In one pilot, the functions and platforms were run on a converged infrastructure based on Cisco and EMC server, storage and data center network equipment. The other pilot used Hewlett Packard Enterprise’s converged infrastructure. The key attributes of the target Unify technology were:

- Converged ICT infrastructure
- Multitenant
- Multidomain
- Single-cloud management platform
- Strong security
- Elastic pools of storage and compute
- SDN enabled

Huawei and VMware worked together to design and deploy the test environments in less than three months. The pilot project supported the transfer of the virtualized IMS core from the test environment to Ooredoo’s production IT environment. The vIMS platform was used to support Ooredoo’s first VoLTE call. The deployment met an early goal of Unify — provisioning services faster. According to Ooredoo, the development of a product using the new platform took only 3.5 hours versus a traditional process, which can take months. The new product enabled services for 1.5 million users. Other results of the program included:

- Better performance than expected from Huawei’s vIMS platform in speed and operational efficiency
- Hardware independence — the functions performed equally well on Cisco UCS and HPE blade systems
- Third-party environment successfully used VMware
- Systems integration was flexible — provisioned from the overall integrator as well as from the application provider

While Flamme touted the success of the program, Unify must still overcome some hurdles:

- Aligning the organization to the new infrastructure
- Determining the most efficient business processes
- Increasing the skills of the organization in the new platforms
- Understanding regulatory consequences
- Advocating standardized approaches to avoid development costs
- Achieving consistent connectivity across operators

Kuwait's approach: ICT outsourcing

Ooredoo Kuwait is taking the Unify challenge one step further. Not only does the company trust in the value of converged network operations and IT, but the operator also elected to outsource the transformation to Huawei.

“Some years back we decided to simplify and improve the operation,” said Olsgaard. “Previously, we have utilized many different vendors and we have also had some insourced and outsourced parts of our operation. In the name of being efficient and to compete in the market, we analyzed that to improve the operation to be more efficient and to improve the quality we need to simplify the operation. Based on that, we went for a vendor under a managed service scope, and after a couple of rounds Huawei was nominated as the vendor to support us in this transformation.”

The outsourced aspects of the transformation include all network services and IT. Huawei was selected as the outsourcing partner in September and the transition from Ooredoo operations to Huawei was completed in November 2015. The transition included transferring Ooredoo staff in Kuwait to Huawei, as well as the operation of all Ooredoo's Kuwait data centers. Huawei also transferred its staff to the operations centers supporting the operator.

The next phase of the operation will be in stages, beginning with a hybrid model in which Huawei will initially place its staff in Ooredoo data centers and operate some functions from Huawei's India-based global NOC. Eventually, more services will be centralized within the NOC and Ooredoo will no longer have to operate as many local data centers.

“By doing that we save on resources needed locally as well as have access to more knowledge at the same time,” Olsgaard said. “Basically Huawei is operating our data centers. It will continue to do that but with fewer people on site here in Kuwait, meaning remote support and remote operation in terms of handling the services.”

Reduced Time to Market

By choosing to outsource, Ooredoo Kuwait will not only reap the savings of an ICT convergence and NFV streamlining, but the operator gains guaranteed savings as part of the contract.

In addition to savings from consolidating and centralizing data center operations, Ooredoo expects to see reduced costs from its application development management (ADM) processes, which were also part of the outsourcing contracts.

“More efficient ADM reduces our time to deliver a new product to the market, such as a new price package for example. That's an extremely important parameter in a competitive market like we have here in Kuwait, where we have three operators competing in a fairly small market,” Olsgaard said.

Ooredoo expects that most of the savings will be opex-related, though lower ADM costs are also calculated as capex reductions.

“We expect to get more from the same investment: more products and faster time to market. This will hopefully give us a competitive edge.” Olsgaard said.

By combining IT (data center and ADM) outsourcing with CT, the operator is maximizing time to market at a high level of efficiency.

Organization and transformation

Outsourcing to Huawei enables Ooredoo to address two key issues in the Unify strategy — organizational adaptation and skill deficits. Huawei will bring together the network and IT functions within its operations, and the vendor will provide the skilled staff to upgrade Ooredoo’s network and IT operations to NFV capabilities.

“Transforming to ICT and NFV was indeed part of the catalyst for this because before you had circuit-switched traffic in the network side,” Olsgaard said. “Now, everything is IP traffic, which means its data. Everything is data. The way you build a data center, whether on the IP side or the network side is basically the same components — computer and processor power,” he added. “What’s required to operate that and manage that is the same skill set. Not 100% yet, but in five years it will be the same people to operate the network and IT department — part of the migration toward the future. We expect more and more of the network services, whether in the network or IT, to become virtualized. You will have synergies to do that and more savings from efficiencies.”

Huawei — technical and commercial merits

To qualify for ICT outsourcing, a vendor has to be strong on both commercial compliance and the technical environment. For example, Ooredoo found that Huawei “Has quite a good track record in winning the managed services data centers. Some vendors are strong in specific areas. We had to deselect some of the vendors because they could not fulfill some of the mainly technical requirements.” Olsgaard said.

Multivendor management

As the chosen outsourcer, Huawei acts as the primary vendor, with the other vendors acting as subcontractors. In Ooredoo’s case, Huawei maintains a significant share of the network with its own equipment, but other suppliers are also present and must be managed by Huawei.

Olsgaard is not concerned, however. “I am the program director of the project. It’s my responsibility to make sure everything end-to-end is moving according to the plan,” he said “This simplification will ensure we can concentrate on what we are best at — namely, having the best products and the best services in the market and at the right time.”

Data Security

One of the challenges of the outsourcing plan is that not all data can be transferred to Huawei’s remote sites.

“We still have a legal requirement to keep, which is securing a stable environment. Basically if you have a cloud, the resources can disappear,” Olsgaard said. “But if you have the hardware on the ground you basically have your hands on the data. We, as an operator, need to make sure we control the security part of it. Virtual network vendors can be attacked and the customer data can fall into the wrong hands — that is our responsibility, a legal responsibility. If it’s confidential customer data, yes we keep it local. If its data not related to customer information we can have it global. That’s the demarcation. It’s not necessarily straightforward. It’s something you have to be very careful about,” he said.

Conclusion

TBR believes the Ooredoo case is an excellent example of the combination of outsourcing, ICT convergence and deploying an NFV road map. The cost reductions and time-to-service incentives the operator can achieve may be a game changer in the Middle East market with reverberations globally. As the chosen outsourcer, Huawei will also benefit from the experience and lessons learned that it can pass on to other operators.

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