



### CHALLENGE

JOIN Experience is a newcomer on the mobile telecom market. This owner of a 4G license on the Luxembourg market positions itself as a “third generation” telecom operator, offering both mobile and IT cloud services. The operator aims at becoming a European-wide player, entering the M2M market and providing services to other mobile virtual operators. In order to manage its portfolio and future growth, the operator needed to rely on a flexible and yet robust IT infrastructure.

### SOLUTION

Starting from a new slate, JOIN Experience chose an infrastructure and underlying management platform that would be as flexible and adaptive as possible. Virtualization was key. The operator set its sights on the new generation of VMware software-defined solutions.

### RESULTS

VMware virtualization and software-defined solutions are orchestrating the allocation and secure operations of resources - from network to storage. JOIN Experience is able to provision any type of telecom and IT cloud services. The customers have the possibility to dynamically adapt the level or type of services they subscribe for, through a transparent single interface and sign-on mechanism.



## JOIN Experience: a software-defined infrastructure to preempt the future

JOIN Experience is a 50/50 joint venture between JOIN Wireless (1) and POST Luxembourg Group, the historic player in telecommunications in Luxembourg. The newcomer coins itself a “third generation” telecom operator.

JOIN, owner of a 4G license, stands out by combining mobile telecom and IT cloud services in a unique offering. It entered the Luxembourg market as the fourth mobile operator with the firm intention to revolutionize the sector and to offer mind-changing opportunities to its customers, essentially individuals and SMEs. In the enterprise market JOIN targets Mobile Device Management (MDM) and Machine-to-Machine (M2M) projects. Its ambitions won't stop at the Grand-Ducal borders. JOIN considers Europe as its home country. Plans for an international expansion have been laid out, right from the start, in order to offer roaming-free mobile services as well as IT services across Europe. Next targets: Belgium, France and the German-speaking countries.

JOIN's leitmotif? “Absolute mobility everywhere”. Users will be able to access their data and services through 4G networks and cloud dedicated infrastructure, ensuring an optimal experience. But this so-called JOIN Experience won't limit its activities to people. The startup operator also aims to become a significant player in the Machine-to-Machine (M2M) sector.

Innovative value-added services, people and “object”-oriented services, telecommunication and cloud based IT offerings, rapid international expansion... The young operator obviously needed to rely on a flexible and yet robust IT infrastructure in order to meet its ambitions.

### Virtual growth

“Being a newcomer, we have a major advantage over our competitors”, states Michael Mossal, JOIN Experience CIO. “We don't have to deal with legacy, often disparate solutions. We were able to define the best possible infrastructure that would give us the means to provide robust and flexible services and to foster a flexible growth. It also allowed us to build products that interact with Skype or other VoIP services, and to offer these to our customers Europe-wide without any additional charge.”

The solution was obvious: a virtual infrastructure that would make business as future-proof as possible. “Future needs are always difficult to predict. We needed to deal with geographical expansion, a fast but unpredictable expanding customer base, the need to diversify our product and service offerings...”

Next to being the “first operator of a new generation”, JOIN's ambition is also to provide other mobile virtual network operators (MVNO) with services that would be hosted and managed by JOIN's multitenant platform. In order to succeed in this ambition, they need to guarantee that they can scale up fast and efficiently.

To face all those challenges, the choice was obvious. The major part of their virtual infrastructure had to come from VMware. Michael Mossal already had quite some knowledge and experience of the company's offerings, especially vSphere. “VMware is a well established leader in terms of virtualization solutions and a pioneer in network virtualization and software defined networking technology. They know our business and could provide us with the needed expertise.”

This expertise and track record was paramount to meet JOIN Experience's expectations which were quite

(1) JOIN Wireless S.A. was founded in 2013 by three visionary Luxembourgish entrepreneurs - Pascal Koster (former director of Tango and founder of VOXmobile, now Orange Luxembourg), Claude Lüscher (former CEO of Tecsys and co-founder of Exigo) and Frank Fischer (former partner at Deloitte, co-founder of Exigo and founder of IT Works and Cartrust).

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Michael Mossal, JOIN Experience CIO

demanding. The roll-out timeframe was rather tight. Plans were drawn during the summer of 2013. The 'go live' was set for February 2014. The platform obviously had to run smoothly. “They needed a perfectly stable and operational platform”, says Luc Gallet, System Engineer for VMware. “We organized various information sessions to further elaborate the roadmap and make clear what they could expect, in the short and longer term. This allowed JOIN to make the right choices and to give substance to their ambitions.”

The VMware choice does reflect JOIN's basic philosophy: “Our concept is based on simplicity and functionality - the customer will appreciate this added value of clarity and transparency”, as Frank Fischer, JOIN's co-founder and managing partner, puts it. “All of our partnerships, whether financial, operational or technological, have been concluded with companies that not only share our dynamism and innovative entrepreneurial vision, but are also the undisputed experts in their respective fields.”

### Agility

Instead of building an architecture and service offerings based on estimated needs (and expand it should it prove to be under-dimensioned or overinvest in a lower than expected usage pattern), JOIN Experience, together with its system provider ZTE, designed a modern back-end platform which analyzes the actual traffic every customer is generating (voice, YouTube, Office 365, e-invoicing...) and offers 'products' which are especially tailored for that traffic.

To distinguish, orchestrate and manage those hybrid forms of traffic, JOIN also designed an additional layer that could integrate existing telecom services and IT services provisioning solutions into one single master system.

The resulting back-end platform allows JOIN Experience to offer bundled products and to provision any type of telecommunications and IT cloud services. This enables the operator to provide very flexible and scalable customer-loyalty building schemes while the customers can dynamically adapt the level or type of services they have subscribed for. They only need to use a single sign-on interface to access their various services (voice, roaming,

conference, Office 365, Exchange, virtual machine management, mobile device management...), whether they are hosted in the cloud or on JOIN's virtualized infrastructure, which is located in thirdparty Tier 4 datacenters in Luxembourg, in total transparency for the customer.

Underneath those infrastructure components and provisioning mechanisms, VMware's virtualization and software-defined solutions make sure the necessary resources are being made available. Every part of the global infrastructure has been virtualized and organized in well-separated layers: compute resources network, storage and applications. On the telecom side, everything has also been virtualized: call, voice, roaming, billing systems...

Flexibility is an indispensable advantage for adapting the service offerings - and the underlying infrastructure resources - as well as for providing the management and support functions. An obvious example is the billing service which needs to grow and adapt according to the evolution of the customer base and the various services that will be provided to each customer.

“Billing is something that can wildly grow and which is very difficult to predict, all the more so when you are offering cloud services with a vast amount of potential options”, says Michael Mossal. “Virtualization was paramount. VMware is providing us with the flexibility that we need. And it became even more important when we entered the M2M market. We couldn't do it without a flexible infrastructure underneath. An M2M project requires a fully-automated provisioning mechanism as well as a secured setup, with VPN separation. A network virtualization approach, such as the one NSX guarantees, is necessary to build dedicated isolated security contexts for customers. Thanks to VMware, we are able to implement dedicated application servers and firewalls, load balancing solutions... This is only possible by using a network virtualization platform.”

### Software-Defined flexibility

Michael Mossal: “We took the strategic decision, even before NSX was released on the market, to implement the whole intelligence into the software

## VMWARE CASE STUDY

### VMWARE FOOTPRINT

- VMware vSphere
- VMware NSX
- VMware vCenter Operations Manager
- VMware vCloud Automation Center
- VMware Chargeback Manager (for service providers)

layer because software is much easier to provision than hardware. We can dynamically create the different resources. Everything is implemented within the software layer: load balancing, firewalling... This is where VMware really comes into play and which makes us different. Investing in physical hardware would have been limiting in terms of agility. With a software-defined infrastructure, you can do many more things, including from a security point of view. The NSX stack can for instance detect a malfunction in a system, and isolate the concerned virtual machine so it won't communicate with the other ones anymore."

Every major infrastructure management function now relies on software. JOIN implemented various VMware solutions to obtain the benefits of a Software-Defined Data Center, on the compute, storage and on the security and network level. On the management and automation level JOIN implemented VMware's solutions for the automation of service delivery, a unified IT service catalog and a policy-based governance.

Flexibility and responsiveness are absolute prerequisites to support JOIN's growth ambitions. The operator is determined to grow fast... and far. JOIN Experience's ambition is to service 50,000 customers in the short term and to grow to a 200,000+ customer base by 2018. From the start, the infrastructure has been dimensioned to be able to manage and support some 50 million users.

Furthermore, continues Michael Mossal, "putting all the intelligence in the software layer is making us less dependent on hardware 'boxes'. This guarantees us more flexibility. We don't have to base our strategy on box features and it will allow us to freely migrate to the next generation hardware or to simply introduce more powerful hardware building blocks. We won't necessarily have to stick to the same provider, everything that is underneath the software layer is easily replaceable."

In other words, a software-defined architecture and management infrastructure allows JOIN Experience to face its future needs.

