



AIS Case Study

Metaswitch Supports AIS Network Transformation in Thailand by Modernizing Their Mobile Voice Network and Enabling VoLTE Peering

Introduction

With more than 175 VoLTE networks launched, anticipated to hit over several billion subs by 2020, according to multiple market analysts, it is a foregone conclusion that the global network traffic will also grow accordingly, and operators will have no other choice than extend their service to provide the same value and user experience they provide within their local networks.

End User Experience

There is no question that the VoLTE experience is superior when compared to both a 3G experience and an OTT one. Parameters such as codecs, jitter buffer management and delay negatively impact the user experience and hence the desire should be to enforce an end to end VoLTE experience. It is therefore critical that a Service Provider can support this QoS regardless of their subscriber's location.

Increased Revenue

While VoLTE itself may not create a new revenue stream, the additional services that can be introduced on top of a VoLTE network offer significant potential to open new markets and create new services. These services will be expected to work globally, increasing stickiness of services and allowing for additional ARPU.

Improve Cost Efficiency

Operators are hungry for the TCO savings that have been promised from Network Function Virtualization (NFV). Too often their NFV projects are compromised and fail to deliver these benefits due to poorly architected Virtual Network Functions (VNFs); a result of quickly ported software from the legacy physical appliances.

Despite the immediate benefits of VoLTE Peering & Roaming, only few operators have launched these services, due to interoperability issues. Various proprietary simplifications, extensions and just differing standards interpretations mean most VoLTE networks are not directly interoperable.

AIS is one of the few operators embracing these challenges.

About Advanced Info Service (AIS)

As the leading telecommunications company with over 41 million customers across the country, AIS has been continually laying strong foundation of digital transformation.

Advanced Info Service (AIS) is Thailand's largest mobile operator with more than 40 million subscribers, 48 percent market share and 98 percent nationwide coverage. It delivers high-speed wireless services, fixed broadband, digital services and call center services, making it the country's leading "Digital Life Service Provider."

Operating in a fiercely competitive market, where mobile penetration is more than 130 percent and 60 percent of subscribers are active 4G users*, AIS recognized early on that it needed to expand its service offerings beyond basic mobile services to remain competitive. Among the new digital services that AIS introduced are mobile money payments and business cloud services. AIS continues to innovate, and through a company-wide transformation program, the operator has prioritized strategic initiatives for network transformation and customer experience. Metaswitch's market leading Perimeta virtualized Session Border Controller (SBC) and Service Assurance Server (SAS) solutions played key roles in multiple stages along AIS's transformation journey, forging a partnership that grows from strength to strength along the way.



No. 1 with **48%** revenue market share



45% subscriber market share

largest bandwidth of **2x60** MHz



Service coverage available in **57 cities**



Business Challenges and Transformation Goals

Thailand is the second largest smartphone market in Southeast Asia, according to research firm Canalys**, and there is a strong appetite among consumers and businesses for all things digital. To meet the needs and evolving lifestyle choices of its customers in the digital era, AIS has embarked on a transformation program, called "AIS NEXT GENERATION," to become a true Digital Life Service Provider. The company's goal is to enhance the standard of living for people in Thailand through services such as those in the areas of multimedia content, health, education and agriculture.

The transformation program leverages the operator's three core strengths -- mobile, fixed broadband and digital services -- and focuses on service creation and service excellence. As part of this program AIS is investing in the development of mobile network quality, stability and reliability while continuing to expand 4G network coverage and enhance capacity.

*Source: <http://advanc.listedcompany.com/misc/factsheet/20190613-advanc-factsheet-1q2019-en.pdf>

**Source: <https://www.canalys.com/newsroom/smartphone-market-in-thailand-falls-in-q4-2018>

Legacy Network Transformation

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AIS needed a solution that could deliver not only performance improvements and cost savings but also deployment flexibility across a geographically large and disparate legacy 3G network. It was also essential for the solution to be highly flexible in terms of architecture to reduce the friction of integration into their extensive OSS/BSS systems to avoid disruption of charging and reporting.

“Perimeta’s vastly reduced hardware requirements and network licensing model really enabled us to reduce our TCO. The flexibility of Perimeta and the support we were provided made the integration with our legacy technology vastly easier and faster than we were expecting.”

— Mr. Wasit Wattanasap

Head of Nationwide Operation and Support Dept.”Next Generation Transformation

AIS chose Metaswitch’s software-based, carrier-class Perimeta virtual Session Border Controller (vSBC) after an extensive evaluation of competing SBCs. AIS noted Perimeta’s superior performance, network-wide licensing and provisioning management as critical elements. Perimeta also brought with it stability and ease of interoperability with third-party products and an unparalleled ability to spin up an instance of the vSBC and begin passing live traffic. AIS also chose to deploy Metaswitch’s Service Assurance Server (SAS) to provide unique insight into the performance of their new network functions.

Since deploying Metaswitch’s vSBC and SAS solutions, AIS have experienced:

- **Massive cost savings** through reductions in hardware requirements due to the market leading performance of Perimeta
- **TCO cost savings** from network-wide licensing, which has solved the challenge of big differences in traffic profiles across regional nodes in Thailand
- **Drastic reductions in fault resolution times**, thanks to the unique insight into their network provided by SAS

Furthering its commitment to innovation, AIS announced, through AWN, that it would roll out the country's first commercial LTE Advanced service (4.5G) to ensure first mover advantage in super-fast wireless broadband services. After the service went live in 2016, AIS announced plans to launch the first cross-network VoLTE service in Thailand and Southeast Asia with another Thai mobile operator, DTAC. This would allow AIS to offer their customers a new user experience with best-in-class HD-quality voice and video calling, reinforcing their mission to deliver service excellence and to help reduce customer churn.

To deliver this service, AWN needed to deploy an SBC solution that could support peering between their own and a third-party VoLTE network. The challenge was on for AIS to find a solution whose Transition Gateway (TR GW) functions and Inter-connection Border Control Function (IBCF) fully complied with 3GPP standards, could seamlessly integrate with their recently deployed IMS core and, critically, could go live in a very short time frame – less than three months.



When AIS learned that Perimeta software could support full 3GPP VoLTE voice traffic, the engineering team invited Metaswitch back into the lab. Perimeta demonstrated its scalability, speed and robustness at handling VoLTE traffic, and all AIS needed to do to deploy the functionality was enable new licenses on their existing platform. Furthermore, AIS engineers could continue using Metaswitch's intuitive provisioning and management systems that they were already experts at.

AIS decided to extend their usage of Perimeta and leverage the same border control elements to provide VoLTE peering, which allowed them to deploy the first live VoLTE connection within three months and ensure the go-live was a complete success. They were also able to extend their use of SAS to facilitate troubleshooting and remediation throughout the go-live phase and beyond.

“Perimeta’s high performance, unsurpassed stability and seamless interoperability with third-party products made our decision to deploy it on our 4G VoLTE network extremely easy. This extension of Perimeta’s role in our network confirms that the platform gives us the confidence and capabilities to rapidly deploy new services and scale quickly as our subscriber base grows.”

— **Kriengsak Wanichnatee**
Chief Technical Officer at AIS

Building on the Successful Partnership

Following the successful deployment of the first two phases, the partnership between AIS and Metaswitch has strengthened. Together, the teams find new network challenges that can be resolved using the Metaswitch solutions. Most recently, they have embarked on two projects:

Security for Hosted Business Services

AIS's Super Broadband Network (SBN), which provides broadband services to more than 10 million households and business customers, identified an opportunity to add greater security to their hosted business services for enterprise customers. Driven by their commitment to offering a best-in-class experience they were motivated to offer an additional layer of protection to what was an already highly secure solution for their valued business customers. Perimeta is one of the industry's most trusted SBC's when it comes to security (and it has validated its security robustness repeatedly), which is why it was perfectly placed to help AIS protect their customers.

Analytics for Enhancing Customer Experience

As part of AIS's transformation into a Digital Life Service Provider, the operator is introducing big data and analytics engines into its network to enhance customer experience. Metaswitch's SAS has a unique capability of capturing detailed diagnostics for all calls, over all protocols, all the time. It also has a highly optimized ability to store all that data an order of magnitude more efficiently than general purpose database solutions, which means that it can play a key role in the 'big data' play when addressing voice customers.

AIS therefore decided to heavily extend the use of SAS to holistically support their entire network with full redundancy. This project did not come without its challenges, the biggest of which was how to store and synchronize so much data in such a large and dispersed network. Metaswitch



were able to overcome these issues by federating SAS into large server pools of deployments capable of serving tens of millions of subscribers. When deployed with load balancing to spread the data flow across the nodes, as well as some advanced data compression, SAS is able to handle such a large deployment.

Every SAS agent can now feed their data analytics engines and now has an integral role to play as part of voice customer experience. Indeed, a customer can now raise an issue and the AIS call center can confirm that the fault has already been found, diagnosed and fixed.

“SAS impressively handles diagnostic data across our network and provides the visibility we need to deliver the best experiences for our customers and resolve problems before they even notice.”

— Mr. Wasit Wattanasap

Head of Nationwide Operation and Support Dept.”
Next Generation Transformation

Conclusion

Metaswitch's technology solution consisting of Perimeta and SAS solutions have advanced AIS closer to achieving its network transformation goals, particularly in the areas of supporting new services, improving customer experience and prioritizing network quality and reliability.

Perimeta has demonstrated that

- It is a solution that can be applied to many use cases across the breadth of AIS's business, including pre-IMS deployments, post-IMS deployments and network security.
- Its flexibility means that it can be deployed with minimal effort and no disruption to existing traffic, and without requiring new hardware installation, commissioning etc.
- It offers architectural flexibility, in terms of decoupling of signaling and media.

SAS has demonstrated that

- It can play a critical role in user experience by diagnosing and resolving network issues and faults quickly and efficiently.
- Even in complex converged networks with multiple layers, devices and varying customer environments, it can still provide a single point of insight into the entire deployment.
- It can go beyond a troubleshooting tool and become part of a much larger analytics strategy adding even greater value to the business case.

In a fiercely competitive and rapidly changing market, it is critical AIS continues to focus on service excellence and innovation to remain the market leader. The 'AIS NEXT GENERATION' transformation project is playing a key role in this effort to ensure a platform is created that can deliver agility and innovation with a low TCO. The Metaswitch and AIS partnership brings together two highly creative, ambitious, customer-centric companies that serve to maximize the customer experience and to provide higher quality, feature-rich and sophisticated communication services.