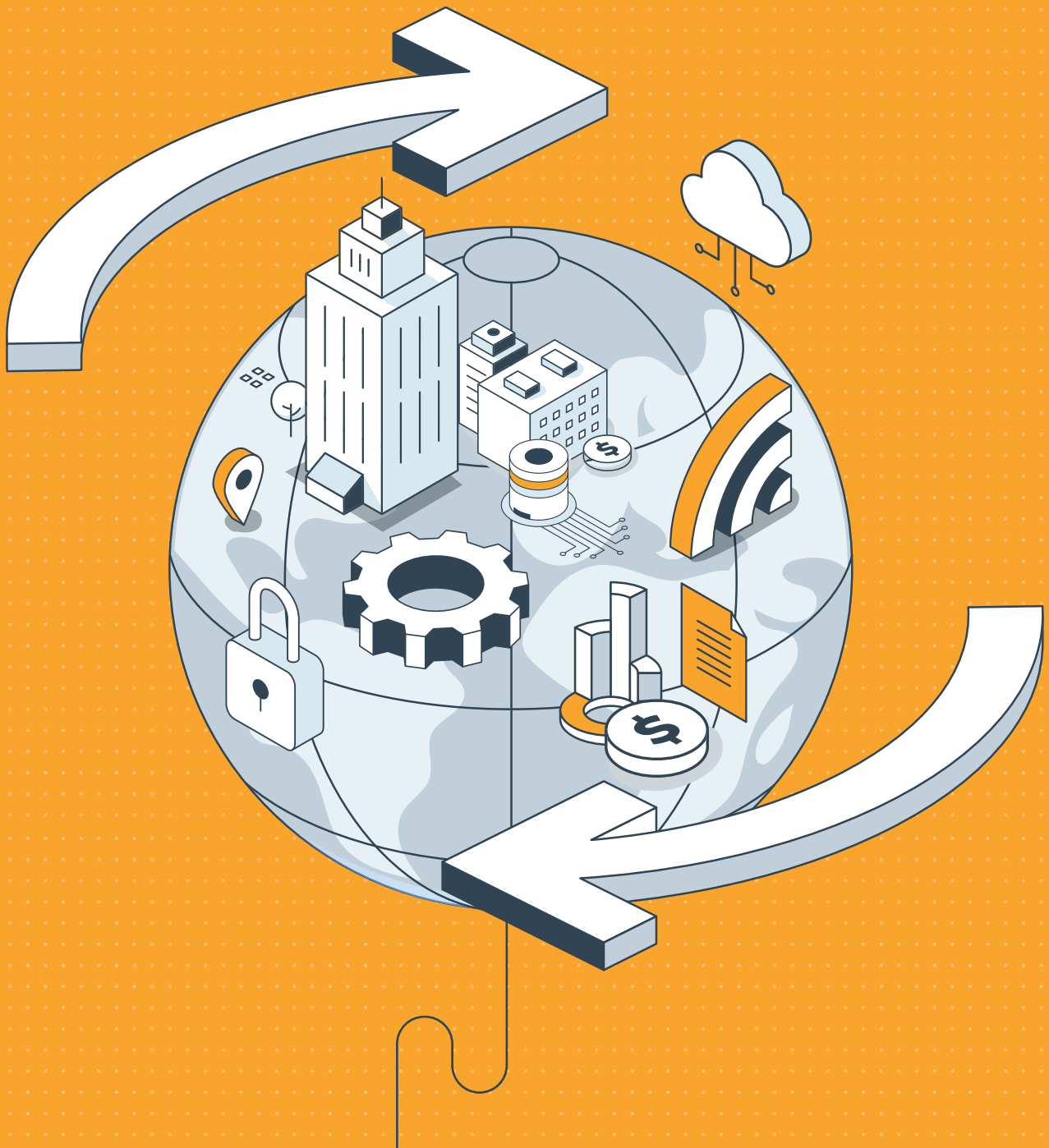


The Benefits of a Holistic CMP



Executive Summary

Connectivity Management Platforms (CMPs) range from “Thin CMPs” that are in essence an orchestration layer streamlining the mobile operator’s legacy core network and BSS, to “Holistic CMPs” that inherently include all fundamental elements, and have much tighter integrations and workflows.

If you’re thinking about what’s essential when it comes to onboarding a CMP, this white paper will outline the key considerations and how a “Thin CMP” and a “Holistic CMP” measure up.



Factor #1 License costs

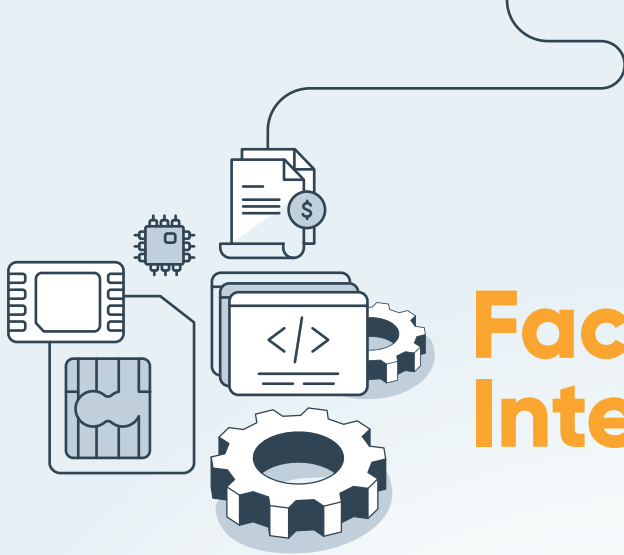
Core network and Business Support System (BSS) vendors typically charge a monthly license fee per SIM/IMSI. That means that over time, the accumulated license cost, alongside ongoing operation, maintenance and support costs, make it difficult for the mobile operator to remain competitive. This is especially true when you consider the fierce competition by IoT Service Providers, who are driving prices down with a race to the bottom. By 2025, there will be 27 billion connected devices. Think about managing and paying for all of those licenses!

Moreover, these licenses were originally intended for mobile subscribers (who consume a lot of data and voice from their mobile phones, thus generate significant revenues). However, for IoT, these licenses are inadequate due to the large number of connected devices and their low ARPU (Average Revenue Per User) usage profiles. Simply put, they don’t use anywhere near the same amount of data, which means the operator can’t generate anywhere near the same amount of revenues. This further impacts the mobile operator’s ability to monetize its IoT business and justify its operation.

Here, the Holistic CMP has a clear advantage – as a single monthly license covers three significant building blocks – core mobile network, BSS and CMP.



A single Holistic CMP covers all your connectivity management needs, reduces your software licensing costs and therefore your overall TCO.



Factor #2 Integrations

When acquiring a Thin CMP, several integrations are required. These will vary in number and complexity depending on the workflows and processes the mobile operator wishes to implement. However, the two most common integrations are with the MNO's core network and BSS.

Core Network Integration

Integration with a third-party core network is complex and may include multiple interfaces and protocols. For example: integration with the Online Charging (OCS) element may be based on Diameter, Radius, HTTP or other protocols, and this is just one aspect of the integration!

Another example is related to the SIMs themselves. To control the SIMs, the core network should expose an interface for the provisioning, activation and suspension of SIMs and IMSIs. Another aspect of the integration deals with more technically oriented configurations and settings, such as applying private APNs to groups of SIMs, assignment of static IP pools, definition of network-level steering and more.

BSS Integration

Integration with an existing BSS (Business Support Services) might turn out significantly more complex than you think at first, as BSS is a suite of applications and services that spans many aspects.

This includes customer management, product catalog, rating, billing, invoicing and more. Apart from the standard work that's required for any integration, these elements also require a detailed design of the operational and functional workflows before even attending to the integration itself.

If this is not planned out adequately, you could easily face limitations in the functionality of billing plans, bill cycles, source offering (e.g. Product Catalog), inter-system synchronization and more. These are time-consuming tasks that add another layer of complexity to this type of integration and shouldn't be underestimated.



This is where the Holistic CMP kicks in – a unified platform where all building blocks are already integrated and workflows are fully streamlined.

This significantly reduces the complexity, capital investment and time-to-market of your IoT project.



Factor #3 SLA

One very important element in any mobile operator's brand is the service and support it provides to its customers. In a world where data rates are in constant decline, and with the ease in which customers can move from one MNO to another, excellent service helps you stand out from the crowd.

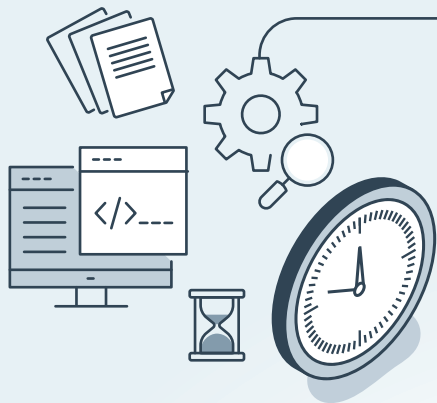
Trying to reach a good SLA with multiple vendors is not an easy task, and you will more than once find yourself having to settle responsibility disputes between your vendors. IoT makes things even more complicated because of the nature of connected devices, their scale and the fact that more and more connected devices are becoming "mission critical" to their users.

Having a single vendor who provides service and support for all three (fully integrated) elements is the first step towards happy customers. No more playing the infamous "hot potato" game often practiced by vendors, where one vendor simply passes the buck to another and claims they have nothing to do with the issue at hand. Instead, a single vendor takes full responsibility for your platform's stability and service, commits to industry-standard SLAs and provides support from A-Z.

But that's not where the conversation ends! Watch out for patchwork solutions that claim to comprise all three elements of the solution, but in reality these were not built under one roof. These vendors have either obtained each part from different vendors, or the elements were simply built using different technologies, infrastructure and concepts, before being stuck together. You have no guarantee that these disparate parts will play nicely when the going gets tough. Instead, a platform that not only comprises all key elements but also one in which all elements were designed and developed on the same software infrastructure gives you a competitive advantage.



A Holistic CMP will ensure that the ongoing operations and maintenance of each of the three elements are smooth and streamlined and will help you commit to, meet, and even exceed the SLA your customers expect.



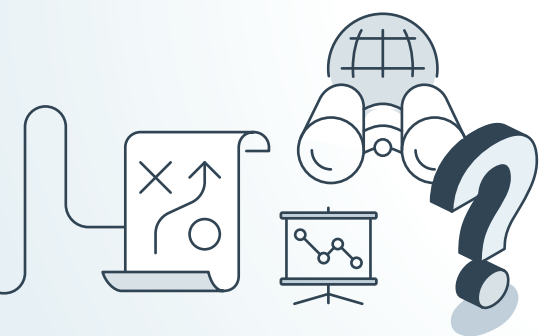
Factor #4 Time-to-market

The complexity associated with a three-headed solution becomes a huge project that requires tight project management, planning, scoping, design and implementation. These elements could easily take 6–9 months depending on the complexity, the number of integrations you need and inter-vendor cooperation. This encourages you to cut corners and skip your 'ideal' solutions for ones that will save on ramping up time and complexity.

One Holistic CMP allows you to go for your moonshot, without adding complexity or delay. Furthermore, should you prefer a cloud-based CMP-as-a-service, implementation time and CAPEX will be even further reduced. With an average deployment time of 4 weeks, your IoT business has suddenly become the most commercially competitive in the market.



A single, Holistic CMP suite significantly reduces the overall project implementation time and brings your IoT offering to market faster.



Factor #5 Future focus

Everything has a price tag. When it comes to mobile operator platforms and systems, new cellular generations, technologies and business models incur additional charges that are related to licenses, upgrades, and more.

When planning your future IoT business, think about the lightning-fast evolution IoT has brought to the world so far. Endless use cases that didn't exist a decade ago have created the need for brand-new technologies (such as NB-IoT and CAT-M) and innovative business models (e.g., pooled plans, one-time plans). With a Holistic CMP, new business models and innovative billing plans and packages are already included in the price, not to mention upgrading your IoT platform to support 5G (and 6G). This saves you from these future costs and investments that have an immediate effect on your profitability and bottom line.



A significant benefit of the Holistic CMP-as-a-Service solution is the fact that the monthly service fee covers not only the platform's ongoing operation, maintenance and service, but also any updates and upgrades to new capabilities and functions.

Does IoT require its own core network?

It's worth taking some time to understand why a Holistic CMP needs its own core. Core networks were originally designed for consumer devices, however, IoT devices behave differently than consumer devices, thus require different capabilities, architecture and scale.

According to recent market research by Kaleido Intelligence among mobile operators, more than 70% think their IoT business operation requires a dedicated core network for IoT. This is an IoT core network that is separated from their consumer core network, because of three main factors:

Device behavior

1

IoT behaves differently than consumer devices like mobile phones or tablets etc. The number of devices is a lot higher; the average data consumption is significantly lower, and the usage pattern is totally different (packet sizes, OCS bulks etc.). This requires adaptations in the core network that are not always suitable for the consumer core.

If we take the opinion of Ericsson, "Massive IoT and Critical IoT devices have significantly different quality of service requirements in terms of latency, throughput, high availability and security, and policy management can play a key role in meeting service demands. In very exacting situations like healthcare, some critical devices need to quickly adjust to different traffic patterns and events in a more automated and dynamic way."

Protecting the main business

2

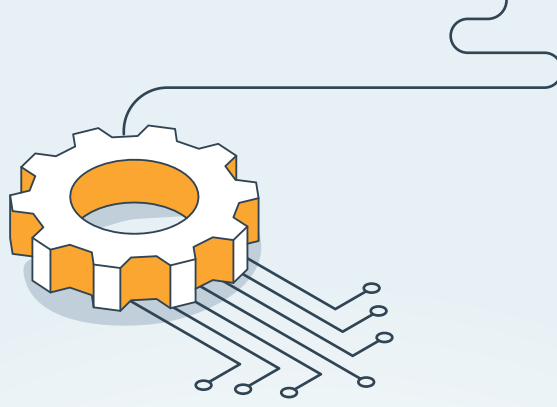
Separating IoT from your main business ensures that any issues related to IoT will not impact your main consumer business. Ericsson continues, "In effect, it creates a 'separation of concerns'. A network operator could therefore upgrade their IoT core driven by IoT business needs, without any impact on the bulk-revenue-generating MBB core operations."

This logic spans beyond the core network, as it also impacts your operations, service and support organizations. After all, you wouldn't want the changes and evolution of IoT to interfere with your main revenue source.

Cost

3

Core networks that are designed for IoT entail a lower price tag which is much better aligned with the scale of IoT, especially in the evolving LPWA market. Nokia comment, "Cellular IoT is a growth segment that has specific core network processing requirements that are not readily addressable, at the desired price points, by the classic, smartphone-oriented mobile core. The diversity of services is a major reason for operators to pursue dedicated core networks for IoT. A new approach to the IoT core, that offers much lower cost per connection, is needed."¹



floCORE

designed and built for IoT

These reasons were exactly why we developed floCORE, which is an integral part of floLIVE's comprehensive CMP. It's a 3GPP-compliant core network that has been designed, built and optimized specifically for IoT. It's fully cloud-native, providing a truly low footprint that results in lower operational costs, and it's geared for performance.



With a basic hardware configuration, floCORE can support up to 10 million devices with an accumulated throughput of 10Gbps and 5,000 transactions/sec.

floCORE is infrastructure-agnostic and can run on any IT environment of choice – from bare metal to virtual machines, up to containers, dockers and EKS. Furthermore, being built on a modern, microservices-based software architecture, floCORE is highly flexible in its deployment options. As an example, the HSS can reside in the cloud while the PGW is installed locally on the MNO's premises to obtain high throughput and low latency while complying with your local privacy and data sovereignty regulations.

Supporting the IoT (r)evolution with a Holistic CMP

IoT is constantly evolving, and as it evolves it introduces new requirements, technologies and business models that mandate quick adaptation from all elements of an IoT solution, including core network, connectivity management platform, and BSS.

floLIVE's advanced CMP uses a Holistic CMP model rather than a Thin CMP model. This includes all of the three major building blocks necessary for running a cost effective, scalable and profitable IoT business.



Whether in the cloud or on the ground, with floLIVE mobile operators benefit from a highly advanced CMP that supports all cellular technologies, with an inherent IoT BSS that supports the most advanced business models required by today's connected enterprises, a 3GPP-compliant core network that was built for IoT, and a technological infrastructure that's ready for the future.

Want to see how it works in practice?
Get in touch here, or visit frolive.net

