tmforum
knowledge

REPORT

how Liberty Latin America

revamped
to cloud BSS

SPONSORED BY:

ARIA

Author: Ed Finegold, Contributing Analyst
Editor: Dawn Bushaus, Contributing Editor

contents

We hope you enjoy the report and, most importantly, find ways to use the ideas, concepts and recommendations detailed within. You can send your feedback to the editorial team at TM Forum via editor@tmforum.org

thebig picture

Liberty Latin America (LLA) has made its mark with an aggressive acquisition strategy meant to position the company as the leading integrated mobility and broadband provider in the Caribbean and Latin American region. The idea of a common business support system (BSS) architecture underpinned LLA's acquisition strategy from the start, but its choice of a cloud-first platform comprised of TM Forum Open API-compliant components operating in the Amazon Web Services (AWS) public cloud marks a significant break from past ways of delivering, managing and paying for BSS.

Since becoming independent from parent company Liberty Global in 2018, LLA has gone on an acquisition spree to add fixed and mobile assets and subscribers in countries ranging from Chile to Curaçao. The company, which registered impressive growth in 2021, both organically and by acquisition, is undergoing digital transformation to deliver a new operations center, a common BSS platform, and the ability to offer mobile and fixed-line services to consumers and business customers in any of its geographies (see map on page 5).

LLA's approach to BSS transformation is an ultramodern departure even from first-generation cloud-based systems which largely avoided putting billing in a public cloud and were not rooted in a software-as-a-service (SaaS) model. LLA has adopted an approach that prioritizes alignment with forward-looking IT trends rather than conventional wisdom to break new ground in cloud BSS.

Read this report to understand:

- Why LLA's acquisition strategy depends on its new approach to BSS
- Why communications service providers (CSPs) want to replace costly customizations with pre-built minimum viable products
- How Agile, DevOps and continuous integration and continuous delivery (CI/CD) change the way IT engages business units
- How LLA is partnering with Salesforce; Vlocity, a Salesforce company; Matrixx Software; and Aria Systems to create a streamlined, modular BSS architecture hosted in the AWS cloud
- Steps LLA is taking to turn operating company CEOs into BSS transformation evangelists.

"

The idea of a common BSS architecture underpinned LLA's acquisition strategy from the start.

Liberty Latin America's footprint

United States

Honduras

Guatemala
El Salvador

Panama

Costa Rica

Colombia

Chile

The Bahamas

Turks & Caicos Islands

Cayman Islands

Jamaica

British Virgin Islands

Anguilla

Antigua & Barbuda

Puerto Rico

US Virgin Islands

St. Kitts & Nevis

Montserrat

Dominica

St. Lucia

St. Vincent & the Grenadines

Barbados

Grenada

Trinidad & Tobago

section 1

growing by
acquisition

LLA is growing fast and not by accident. The company, which aims to be the leader in high-speed connectivity and mobility across the Caribbean and Latin American region, reported double-digit revenue growth in 2021, driven largely by its aggressive acquisition strategy. In addition to 500,000 mobile subscribers added last year – a company record – LLA added 250,000 new consumer fiber-to-the-home (FTTH) customers and 750,000 homes passed with FTTH. The company has been adding assets and subscribers in multiple countries since becoming independent from parent company Liberty Global in 2018, always with a focus on growing its mobile and broadband businesses.

LLA has carried out a chain of acquisitions over time with goals of increasing cashflow from subscribers and expanding operations. The strategy has been to fund expansion incrementally as the entire unit grows, without overloading the balance sheet with bad debt.

Leaving the nest

The key first step was LLA's split from Liberty Global, which gave it ownership of Cable & Wireless. By becoming an independently traded company, LLA gained the flexibility to raise capital in public markets, borrow of its own accord and make acquisitions potentially with fewer regulatory conflicts than a global behemoth like Liberty Global might face. With Liberty Global's strategic plans no longer restraining LLA regarding budget priorities, technology choices or board mandates, the company could move faster and take more risks.

The graphic on shows a timeline of LLA's acquisition strategy, which includes planning moves.

2018: Expansion begins

After establishing its independence, LLA wasted no time in setting its growth strategy in motion. Before 2018 ended the company acquired an 80% stake in Cabletica, a large cable operator in Costa Rica serving more than half a million homes and 200,000 customers. LLA would later bookend this deal by acquiring Telefónica's mobile business in Costa Rica in 2020.

At the same time, LLA made a move central to its expansion strategy by buying Searchlight Capital Partners, its private equity partner, out of the remaining 40% of Liberty Cablevision of Puerto Rico. This gave LLA full and independent control of the cable operator and set the stage for another large-scale acquisition in Puerto Rico.

LLA reported double-digit growth in 2021, driven largely by its aggressive acquisition strategy.

timeline of LLA's acquisitions

MONTH	ACQUISITION/PLANNING	RESULT
OCT 2018	**Takes 80% stake** in Costa Rica's Cabletica	**Establishes high-speed network** in the country and adds more than 207,000 customers and a half million homes passed
OCT 2018	**Acquires remaining 40%** of Puerto Rico's Liberty Cablevision	**Expands cash flow** and sets the stage for future acquisition of AT&T's assets on the island
FEB 2019	**Plans new operations** center in Panama City	**Provides a central, digital and logistics hub** and sets the stage for future acquisitions
MAR 2019	**Acquires controlling stake** in UTS	**Adds fixed & mobile assets,** plus more than 200,000 subscribers in Caribbean; expands Cable & Wireless footprint
SEPT 2019	**Takes remaining shares** of UTS	**C&W gains 100% contro**l over the acquired entity
NOV 2019	**Sells C&W** Seychelles	**Divesting from its only asset** not within the Caribbean or Latin America adds cash and narrows focus

MONTH	ACQUISITION/PLANNING	RESULT
JUL 2020	**Acquires Telefónica's Costa Rican** wireless business, nation's 2nd largest mobile operator	**Adds 2.3 million mobile subs** and 90% LTE coverage
NOV 2020	**Completes $2 billion acquisition** of AT&T's wireless and fixed-line operations in Puerto Rico & US Virgin Islands	**Beginning of LLA's groupwide** BSS transformation
SEPT 2021	**C&W Panama acquires Claro Panama** from America Movil	**Adds 760,000 new mobile subscribers** on top of its operations center, based in Panama
SEPT 2021	**Forms joint venture between VTR** and Claro Chile to target FTTH & 5G	**Creates integrated broadband and mobile provider** in Chile with more than 9 million collective subscribers
AUG 2021	**Completes acquisition of Telefónica** assets in Costa Rica	**Begins moving subscribers off** Telefonica's BSS platforms

"

Establishing independence from Liberty Global allowed LLA to move faster and take more risks.

2019: A new operations center

LLA spent 2019 consolidating its assets and preparing for massive moves in 2020. The company built a new operations center in Panama City, a precursor to the technology and IT transformation plan that is central to LLA's post-acquisition goals. At the same time, LLA divested its holdings in the Seychelles, committing its focus entirely to the Caribbean and Latin America region.

To that end, LLA expanded its Cable & Wireless (C&W) footprint in the Caribbean by acquiring fixed and mobile service assets and subscribers from United Telecommunications Services (UTS) for cash in two separate transactions. The deals provided LLA with increased footprint in Curaçao, St. Maarten and other island nations along with increased cash flow from more than 230,000 subscribers.

2020: A pivotal year

2020 proved to be a year full of major moves for LLA, executing deals that would make its strategy clear. In July, LLA acquired Telefonica's wireless business in Costa Rica, the second largest mobile operator in the nation. This brought more than 2 million subscribers to LLA and built on its 2018 Cabletica fixed-line acquisition. LLA had thus achieved its goal of being a major player in both mobile and broadband services in the country.

In November, LLA completed its nearly $2 billion acquisition of AT&T's wireless and fixed-line operations in Puerto Rico and the US Virgin Islands. At the time the acquisition was announced, LLA President and CEO Balan Nair described it as creating a "strong and integrated communications player with a combined annual revenue of over $1.2 billion in Puerto Rico and $4.6 billion across LLA."

The finalization of LLA's deals in Puerto Rico would not only represent a quarter of its business, but also the most robust set of requirements its BSS plan would face.

2021: BSS clock starts ticking

In Panama, home to LLA's new operations center, 2021 saw the company's C&W unit acquire Claro Panama's 760,000 mobile subscribers from America Movil. In Chile, LLA created a joint venture between its VTR unit and Claro Chile to form an integrated broadband and mobile operator with more than 9 million customers.

In August, LLA finalized its acquisition of Telefónica's mobile assets in Costa Rica. This formality, along with closing its AT&T acquisition in November 2020, put LLA's IT team on the clock. The company would need to move subscribers off AT&T's and Telefonica's BSS platforms to avoid costly carriage fees. These two compelling events, combined with LLA's overall market strategy, provided the impetus to drive the company's BSS transformation and modernization program, which ultimately will support the entire group.

In the next section, we'll explain why LLA is taking a cloud-first approach to BSS transformation.

"

Compelling events, combined with LLA's overall market strategy, provided the impetus to drive the company's BSS transformation.

tmforum
knowledge

section 2

drivers for cloud BSS and a new way of working with suppliers

LLA Interim CIO Pedro Sousa earned the trust required to lead the execution of the company's strategic BSS transformation by working his way up through the organization over 16 years. Sousa began as a Business Architect at Liberty Global, was promoted to VP of IT Delivery at C&W and eventually became LLA's Program Management Officer. After a reorganization of LLA's C-suite in 2021, Sousa was named CIO and charged with leading the BSS transformation and supporting the company's ongoing acquisition strategy.

Cost pressure drives change

LLA's acquisitions in Costa Rica and Puerto Rico are the compelling events behind the company's BSS transformation. The action began because LLA did not want to pay the post-acquisition carriage costs it would incur so long as acquired subscribers remained on sellers' systems. During an acquisition, companies typically enter a transitional service agreement (TSA) under which the acquirer pays the seller substantial fees for using its operations systems until it can migrate acquired subscribers to its own systems.

Because LLA is expanding, it sought a BSS solution that would not only allow the company to migrate subscribers quickly, but also provide a common BSS platform for all units to adopt within a few years. In Costa Rica, LLA was adding the country's second largest mobile operator's 2 million subscribers to a unit that had been a pay-TV and cable broadband provider.

There was not an obvious option to migrate these customers to a legacy BSS in Costa Rica because there was no BSS for mobile services in play.

At the same time, in Puerto Rico LLA faced substantial costs if it could not transition the fixed, mobile and business subscribers it acquired from AT&T rapidly. As a result, the diversity of LLA's business in Puerto Rico would set the base parameters for its new BSS solution while looming TSA costs would push an urgent pace.

"The dynamic we have in Puerto Rico is a perfect context," says Sousa. "The M&A situation lets us be more flexible with the business case because there is a compelling event that overrides all – the mission is to get away from that TSA cost as fast as we can." With time pressure and cost incentives as motivation, "the financial backing is there," Sousa says. "We have sponsorship from the CEO on the architecture."

> "
>
> The mission is to get away from that transitional service agreement cost as fast as we can."

Furthermore, because customers are being acquired from another provider, there is no organizational inertia – political, technical or product related – which historically might prevent a legacy system from being deprioritized or replaced.

Following the cloud path

The next step was conducting an extensive architectural analysis to identify the right industry standards and best practices and to ensure alignment of LLA's technology selection with where the greater IT industry is headed.

"When we looked at architectures and ecosystems that we had in our company, we knew we would not be able to get where we wanted to be without doing something new," Sousa says.

This led LLA to look at BSS solutions that are modular, cloud-first and support the TM Forum Open Digital Architecture (ODA) and Open APIs (see panel). The company also sought out suppliers that support Agile DevOps methodologies and CI/CD.

A crucial reason for shifting LLA in this direction, Sousa explains, is that "we don't get into customization." This is in stark contrast to the legacy BSS model.

Reintroducing IT to business

Moving to a cloud-first and Agile approach not only changes the systems in play and how IT teams work with them, it also fundamentally changes the way in which IT interacts with business organizations to deliver and sustain solutions.

Using Open APIs to transform BSS

Like many CSPs, LLA is turning to the ODA and Open APIs because together they provide a component-based approach that gives CSPs the ability to evolve incrementally to a fully automated, cloud-native operations environment.

The journey to transform IT systems usually starts with digitizing customer-facing BSS because they are critical to running the business. These systems also help telcos deliver personalized services. In the Open API community, four of the five most popular interfaces are for BSS functions. They include Account Management, Product Ordering, Product Catalog Management and Customer Management.

About 32,000 developers from over 2,300 organizations have downloaded more than half a million Open APIs. LLA's success using the interfaces and insistence that its suppliers do the same illustrates that the APIs have achieved at least one of their original goals: minimizing or eliminating the integration tax.

10 most popular Open APIs

RANK	CHANGE	API NAME
1.	▬	TMF666 Account Management API
2.	▬	TMF622 Product Ordering API
3.	▬	TMF620 Product Catalog Management API
4.	▲	TMF629 Customer Management API
5.	▽	TMF637 Product Inventory Management API
6.	▲	TMF621 Trouble Ticket API
7.	▬	TMF639 Resource Inventory Management API
8.	▽	TMF632 Party Management API
9.	▽	TMF641 Service Ordering Management API
10.	▲	TMF679 Product Offering Qualification API

TM Forum, 2022 (based on latest data at time of publication)

"We are trying to avoid the conversation that we are building something from scratch," says Sousa. The traditional problem starts when IT is tasked with meeting lists of requirements dictated by business stakeholders who sometimes have unrealistic expectations about what software can do.

"You customize so much that you undermine the purpose of the system because you customized it to meet every whim of the business," Sousa explains. The cost of this type of customization is high because the one-off requests for features and functions are paid for and then must be maintained over time. When the BSS supplier's commercial model monetizes change requests and their maintenance over years, the result is the kind of carry-forward costs CSPs now believe they must shed to survive.

MVP over customization
Rather than fall down the rabbit hole of endless customization, LLA is taking an approach that first offers a minimum viable product, or MVP, based largely on out-of-the-box functionality provided by its cloud-first suppliers.

"Some of our colleagues complained about a lack of 360-degree customer views," Sousa explains. "In the past we would talk to the business, ask what they want in a 360-degree customer view, and in six months they would get something they didn't want. Now we say, 'Here's a customer 360 solution: Pick it up; play with it; and tell me what you want to change.' That's an MVP and it will grow in the direction we want."

Changing this core expectation around how business units and IT work together is crucial. Some organizations will flourish, for example, if given 10 changes they can make every quarter.

"The business will focus on the 10 things that add value and that works well for them," Sousa says. But other organizations "won't care about your opinion, even if it's the wrong thing, so changing that dynamic is extremely important," he adds.

Changing the supplier model
Changing how IT groups interact with business stakeholders impacts how suppliers are compensated and incentivized. Sousa argues that when vendors generate revenue from change requests, they may implement imperfect, non-standard solutions because they expect to get paid for future changes to address issues with systems.

"The suppliers we are working with are not in that space," Sousa insists. Rather, LLA selects suppliers that use single-code streams and multitenancy because it forces them to optimize their platform and not "make mistakes because it can roll over to other customers," Sousa says.

LLA also wants its suppliers to be partners and consultants, not just vendors. "To this day we have maintained the same objective discussion with our supplier teams: What does good look like? What do you recommend? What's the best way to move forward?" Sousa explains.

> **"**
> You customize so much that you undermine the purpose of the system because you customized it to meet every whim of the business."

This approach contrasts with the traditional, made-to-order customization method. It relies on customers' pre-stated requirements but charges annual license fees plus fees for development and maintenance.

Sousa argues that this model is changing so that the commercial and technical relationship with the supplier focuses on "usage of the platform, being partners where we both learn" and doing things the optimal way based on the experiences of many customers "rather than doing it the way I want to do it."

But given that this is a novel way for a CSP to approach IT transformation, "not many suppliers operate this way," Sousa says. Perhaps not yet anyway.

In the next section, we'll look more closely at how LLA is modernizing BSS.

The commercial and technical relationship with the supplier is changing to focus on usage of the platform, being partners where we both learn.

section 3

delivering a modular, cloud-first BSS platform

LLA is taking a modular approach with multiple BSS suppliers, all of which conform to TM Forum Open APIs, are demonstrably cloud native and offer pre-integrated, pre-configured assets. Partnering with Salesforce, Vlocity, Matrixx Software and Aria Systems, LLA created a streamlined BSS architecture hosted in the AWS cloud as the target platform for its ongoing, post-M&A BSS transformations groupwide.

The graphic opposite illustrates LLA's new BSS architecture, which includes:

- A customer engagement layer provided primarily by Salesforce
- A concept-to-cash process composed of modules from Vlocity, Salesforce and Aria Systems
- Dynamic product and revenue management from Aria Systems
- A network-facing, real-time charging layer from Matrixx Software
- Cloud hosting services from AWS.

Suppliers are expected to have Agile and DevOps skills and to transfer them to LLA's teams. "We are using the opportunity to expand Agile and DevOps practices, and both we and the suppliers bring the ideas to evolve – that dynamic exists," says Sousa.

Suppliers must also bring ready solution assets to LLA. "When we selected Aria, it comes prebuilt out of the box with twenty functions and five more we can play with and run," Sousa explains. Pre-configured solution assets

LLA's cloud-first BSS architecture

TM Forum, 2022 (sources: Aria Systems, Liberty Latin America)

beget MVPs which can be pivotal in winning executive sponsorship for large IT programs. For example, Sousa's IT team delivered an MVP to LLA's CEO during which he received a mobile phone, saw it activated, made a call and received a digital bill. Seeing the new solution work live made it easier for executive leaders to support IT's BSS solution approach.

Puerto Rico sets the tone

LLA's Puerto Rico acquisitions provided the footprint for its baseline BSS platform requirements. "Puerto Rico will be the most complex case around billing data, so we get to build with the most complex case first," Sousa explains.

Because LLA's unit in Puerto Rico spans fixed-line and mobile services for consumer and business customers, and US regulations are the most stringent in the region for handling billing data, it checks all the boxes for what an LLA operating company is likely to require in a BSS platform.

LLA's subscribers in Costa Rica will also migrate to the new platform not only to avoid TSA costs, but also to bring its fixed-line and mobile customers onto the same BSS platform. Migrating this data is not without risk and requires significant effort (see panel).

For example, although Panama City hosts LLA's new operations center and LLA acquired mobile operator Claro Panama, this operating company will remain on legacy systems in the near term to balance out the transformation risk and effort. Once Puerto Rico and Costa Rica are active on the new platform, Panama will migrate to it.

Solving data-migration challenges

With a focus on architecture and new technology, it's easy to overlook classic challenges like migrating data from multiple systems to one. Even with automation tools it is not easy to do and can sink a program's budget if not managed expertly.

"Data migration is key to a successful transformation project," says TM Forum CTO George Glass, who was previously Chief Systems Architect at BT. "The last thing you want to do is bring all the rubbish from legacy to your new system."

At BT, internal conflict was avoided in product data migration by not forcing changes to a troublesome product model, but Glass says this was a mistake. "Every variation brought different product codes because no one had ever properly modelled the products and services you are selling as an organization," he explains. "That is critical to a successful transformation."

He argues that product remodeling, for example, should break products down to a reusable component level. "If my business partners, product managers, and others insist on selling my old products, I can always rebuild it from reusable services." There is no need, however, to drag forward thousands of product codes, of which 10% or less are likely in use. When it's time to move data, a "migration controller" is needed. It's too risky to move all customers in one batch or window, so customer data should be organized by type and complexity before it is migrated.

Operators should expect to deal with some migration fallout and failure. This is the time to assess processes and determine which types of customers are easiest to migrate. With this knowledge, CSPs can execute a clean and well-controlled data migration.

"Don't try to migrate the complex and obscure customers first," Glass advises. "Look for the simplest telephony services and do a trial migration of maybe a thousand customers with all the basic elements overnight on one night."

Managing changes

Once LLA has addressed TSA risks, the next task will be to work with operating company CEOs and CIOs to bring their businesses onto the new BSS platform. Managing each unit's migration requires superior change-management skills and discipline.

"If the change management to the new system fails, the program will fail," Sousa says.

To address this risk, LLA created a 10-person team dedicated full-time to helping LLA's business units migrate and configure systems. These expert ambassadors help others in the organization understand not only how the new platform works, but also how they can work to shape its direction.

The team is complemented by internal marketing campaigns directed by LLA's local CEOs. Their job is to inform their units of what's happening in BSS transformation, what's exciting about it and why they should transform. "With that momentum I don't have to sell the solution," Sousa says, "I have to build and deliver."

In the next section, we explore some lessons LLA has learned that other CSPs can apply to BSS transformation.

> "
>
> Expert ambassadors help others in the organization understand not only how the new platform works, but also how they can work to shape its direction.

section 4

**make it happen –
BSS transformation
the LLA way**

LLA is relying on standards to break the mold for groupwide BSS architecture and transformation. The company provides a good example of a large, multinational operator and regional leader that has embraced a cloud-first approach to BSS as a crucial enabler for its aggressive growth-by-acquisition strategy. Following are some lessons the company has learned.

Go cloud native and embrace standards

From the start, LLA's intent was to work with suppliers whose products originated in the cloud, are based on common code streams and multitenancy, and whose own working methods are rooted in Agile DevOps practices. LLA chose suppliers that have adopted a component-based approach based on the TM Forum Open Digital Architecture (ODA), relying on Open APIs, and who could work together to deliver a collective solution. LLA was able to minimize integration costs and effort. Open API compliance enabled its suppliers to deliver an integrated solution upfront while helping to future-proof LLA's architecture choices.

Choose suppliers that use Agile work practices

By selecting suppliers whose own development and delivery are rooted in Agile, DevOps and CI/CD practices, LLA positioned itself to cut costs, increase the pace of new technology adoption and service introduction, and improve how IT teams interact with and serve business stakeholders. By expecting suppliers also to act as partners and transfer skills to its teams, LLA increased its own employees' access to and expertise in modernized skills, tools and methodologies.

> "
> LLA provides a good example of a large, multinational operator that has embraced a cloud-first approach to BSS.

Prohibit customization

One of the crucial choices LLA made was to prohibit the traditional practice of IT customization. This meant selecting vendors whose technical and commercial models do not include change requests nor support custom instances of their systems. This has also meant changing IT's role from slow, custom developer to ongoing collaborator and innovator.

Use MVPs to win

A minimum viable product, or MVP, is better than a demo because it is based on a live solution. By contrast, demos are often minimized instances of a system or scripted animations that follow one optimal path. LLA used MVPs to prove concepts, foster collaboration and win support for new programs while also delivering a working solution into a continuous improvement environment to get to market fast.

> "
> One of the crucial choices LLA made was to prohibit the traditional practice of IT customization.

SaaS Billing and Monetization for CSPs

ARIA

Aria is a new breed of vendor

Aria is the first pure SaaS billing and monetization solution operating on public-cloud to be globally adopted as a replacement for traditional BSS approaches by Communications Services Providers (CSPs), such as Liberty Latin America, Telstra, M1, EXA and Comcast. Aria enables you to be culturally more efficient and effective as you strive for service diversity, adaptability, and automation in monetization.

Aria delivery is fast using multi-industry and community driven best-practices to get you proving your vision from the start. Business flexibility is delivered through change-by-exception configuration, all 100% no-code and in your hands. We partner with cloud application leaders like Salesforce and ServiceNow to deliver end-to-end autonomous Cloud BSS. And our API-oriented architecture integrates with legacy BSS environments for graceful transition towards business modernisation.

Costly and lengthy change-request projects are replaced with minimum bi-monthly software updates. These have zero-downtime and are backward compatible so you can adopt features at a pace that suits you. Public-cloud infrastructure, performance management and security are baked into every line of code, our operations, and our service. We were born-cloud native, born-SaaS. Through monetizing over 100 of the largest technology and media brands in the world, from Adobe, Experian, Phillips, Twitter, and VMWare, we bring a modern approach to monetization into the communications market.

Aria for Communications

To capture opportunities driven by industry partnerships, adaptable networks, and best-of-breed systems of engagement, CSPs are actively shifting course to build a more agile, open, and autonomous business and architectural foundation.

Aria's SaaS billing and monetization platform (Figure 1) is proven to manage order-to-cash processes in both telco and non-telco environments. It interoperates with cloud-native and legacy ecosystems using more than 360 APIs and TM Forum compliance as part of an automated Open Digital Framework (ODF) aligned business support system.

Concept to Market		Prospect to Order		Order to Provisioning		Order to Cash ARIA		Request to Resolve		Analysis to Performance
Enterprise Product Catalog	▶	CRM and CPQ	▶	Fulfillment Solutions	▶	Billing & Monetization	▶	CRM, Self-Care and Assurance	▶	Business Intelligence

Network Services and Applications   Usage ▲

Figure 1: Aria's SaaS billing and monetization platform

SaaS Billing and Monetization for CSPs

Diversity Beyond Connectivity with Aria

Aria directly empowers business users to create adaptable multi-industry products. Connectivity is the platform from which CSPs will enable and offer enhanced product sets, from new healthcare products and IoT-based business solutions to edge and metaverse applications. Many of these will be co-created with partners, enterprises, and business curators, which drive new B2B and B2B2X business models and routes to market.

Monetization must therefore support stakeholder management across the partner ecosystem, support agile co-curation and new lines of business serving these channels. The lifecycle and nature of products will resemble those from non-telco domains. Monetizing telco and non-telco product combinations will be the cornerstone to growth for many CSPs.

Create Adaptive Packages with Aria

Aria enables CSPs to create smarter packaging for smarter networks. Software-defined networking (SDN) inherent in new 5G and fixed data networks is enabling new levels of service agility to deliver targeted, personalized, and private consumer and enterprise services.

A fresh perspective is therefore also required of monetization. It must support a culture of hyper-personalization, partner co-curation, omnichannel business models and product innovation – at significantly lower cost and time-to-market to ensure profitability, competitiveness and price differentiated revenues.

Business users must be empowered to build, not code, commercial packages that adapt with customer facing configure, pricing, quote (CPQ) systems to maximize value from adaptive networks and services.

Automate Interactive Billing with Aria

Aria enables CSPs to intertwine buying, using, and paying for home and enterprise services. The linear days of month-end bills are over. Account owners and end-users expect proactive interactivity over accumulating costs, service options and payment. This develops trust to purchase more. This creates transparency to assure payment.

Automation using web-scale architectures ensures on-demand performance and active integration with multiple omnichannel touchpoints. This way every stakeholder across complex account relationships has the appropriate controls and real-time information for informed decisions.

An API-oriented cloud-native platform enables end-to-end automation. Active data and event orchestration ensures the entire IT ecosystem is kept prescriptive for revenue assurance and stakeholder experience.

> "
> Aria enables you to be culturally more efficient and effective as you strive for service diversity, adaptability, and automation in monetization.

SaaS Billing and Monetization for CSPs

ARIA

Gain SaaS Cost and Operational Advantages with Aria
Aria delivers digital, cost, and operational advantages by being a true public cloud-native SaaS platform.

SaaS solutions replace lengthy, slow, and costly change-request based cultures and BSS projects. The SaaS culture is transformational. It offers frequent automated software updates, community-driven best-practices, and business user empowerment via no-code configuration. Cloud technology advancements deliver to local data sovereignty requirements, whilst performance, infrastructure, and security management are all embedded.

Aria and SaaS were recently recognized by Gartner in the latest 2021 Gartner® Market Guide for CSP Revenue Management and Monetization

2021 Gartner® Market Guide
for CSP Revenue Management
and Monetization Solutions

Download Now

Analyst Reports

2021 Gartner Market
Guide for CSP RM&M
Solutions

Download Analyst Report

Gartner reports that existing RM&M (BSS) lack support for:

- simplifying and modernizing monetization processes
- new business models and monetization approaches
- cloud-native architecture adoption
- technology upgrade for 5G use cases – agile networks

Gartner recommends including new and emerging suppliers (with low-code/no-code solutions, and/or strong SaaS offerings) during sourcing. That CSPs should prioritize modularity and open interfaces, even if it means best-of-breed or best-of-component sourcing. And that multi-industry vendors have the expertise to support CSPs.

This is Aria.
Download complimentary copy to 2021 Gartner Marketing Guide here

About Aria Systems
Aria Systems' cloud-agnostic monetization platform is the analysts' choice, top ranked by leading research firms. Innovative enterprises like Adobe, Allstate, Comcast, Subaru, and Telstra depend on Aria to accelerate time to market and increase flexibility, enabling them to maximize customer value, and grow recurring revenue through subscription, usage-based, and one-time offerings. For more information, visit: www.ariasystems.com.

"

SaaS solutions replace lengthy, slow, and costly change-request based cultures and BSS projects.

tm forum
open digital framework

A blueprint for intelligent operations fit for the 5G era

The TM Forum Open Digital Framework provides a migration path from legacy IT systems and processes to modular, cloud native software orchestrated using AI. The framework comprises tools, code, knowledge and standards (machine-readable assets, not just documents). It is delivering business value for TM Forum members today, accelerating concept-to-cash, eliminating IT and network costs, and enhancing digital customer experience. Developed by TM Forum members through our Collaboration Community and Catalyst proofs of concept and building on TM Forum's established standards, the Open Digital Framework is being used by leading service providers and software companies worldwide.

Core elements of the Open Digital Framework

The framework comprises TM Forum's Open Digital Architecture (ODA), together with tools, models and data that guide the transformation to ODA from legacy IT systems and operations.

Open Digital Architecture
- Architecture framework, common language and design principles
- Open APIs exposing business services
- Standardized software components
- Reference implementation and test environment

Transformation tools
- Guides to navigate digital transformation
- Tools to support the migration from legacy architecture to ODA

Maturity tools & data
- Maturity models and readiness checks to baseline digital capabilities
- Data for benchmarking progress and training AI

Goals of the Open Digital Framework

The Open Digital Framework aims to transform business agility (accelerating concept-to-cash from 18 months to 18 days), enable simpler IT solutions that are easier and cheaper to deploy, integrate and upgrade, and to establish a standardized software model and market which benefits all parties (service providers, vendors and systems integrators).

Learn more about collaboration
If you would like to learn more about the project or how to get involved in the TM Forum Collaboration Community, please contact George Glass.

tm forum
research
reports

meet the
research
& media team

Meet the Research & Media team

Report Author:
Ed Finegold
Contributing Analyst

Report Editor:
Dawn Bushaus
Contributing Editor

Chief Analyst:
Mark Newman
mnewman@tmforum.org

Principal Analyst:
Dean Ramsay
dramsay@tmforum.org

Managing Editor:
Ian Kemp
ikemp@tmforum.org

Editor in Chief, Inform:
Joanne Taaffe
jtaaffe@tmforum.org

**Customer Success
& Operations Manager:**
Ali Groves
agroves@tmforum.org

Associate Editor:
Josephine Dowswell
jdowswell@tmforum.org

Sponsor Success Manager:
Maryssa Ramsey
mramsey@tmforum.org

Digital Media & Events Coordinator:
Ellie Hsu
ehsu@tmforum.org

Digital Marketing Manager:
Anna Kurmanbaeva
akurmanbaeva@tmforum.org

Commercial Manager, Research & Media:
Tim Edwards
tedwards@tmforum.org

Global Account Director:
Carine Vandevelde
cvandevelde@tmforum.org

For more information about the Open Digital Architecture and Open APIs, please contact **Ian Turkington.**