

## Small and mighty: OSS/BSS microservices

By: Tim Young

In the quest to build CSPs that are more agile and better able to launch and scale new products and services, many a magic bullet has been touted. Time has shown that there is no one thing that can transform technologies and corporate cultures, but there are overarching strategies that can simplify processes and change the way that service providers do business.



For a long time, we talked about how CSPs could adopt some of the agile methods and practices of OTT players in order to beat the vandals back from their gates. Increasingly, the conversation is shifting toward cooperation—at least for now. But there are still lessons CSPs can glean from others, whether they're working against them or with them.

"Native digital players are able to provide reliable services to a huge number of users and implement innovations in parallel at a very fast rate," said Deloitte's Technology Strategy & Architecture team in a [white paper](#) from last year. "To achieve this, OTTs have developed new IT paradigms based on the wide use of microservice architectures, application programming interfaces (APIs), big data and cloud platforms."

This is all stuff we know, but as a way to translate traditional CSP behavior to a new paradigm, it's starting to pick up speed recently. "Adapting these paradigms to the Telco IT environment," the Deloitte team continues, "implies breaking down current monolithic applications into smaller, modular services to maximize responsiveness, resilience, flexibility, interoperability, reuse, and openness."

Not for distribution or reproduction.



## Microservices

"The microservice architecture allows for more effective customization, programmability and upgrades," said Gartner's [Martina Kurth in a recent blog post](#). "Digital innovators in other industries, such as Airbnb, Dropbox and Twitter, have achieved significant development agility and time-to-market improvements of up to 75 percent by adopting this approach."

Indeed, in the enterprise arena, microservices are downright mainstream. According to [a report](#) from

April of this year by Dimensional Research, sponsored by LightStep, 91 percent of enterprises are using or have plans to use microservices. Three out of five companies polled have microservices in pilot or production. Ninety-two percent grew their microservices last year and 92 percent plan to grow them even more next year. Interestingly, 86 percent expect microservices to be the default within the next five years. The rest of those surveyed still expect microservices to become the default architecture, but not necessarily that quickly.

With that kind of momentum, my money's on the under.

And many, including Gartner's Kurth, are confident that this shift will fully include CSPs. "Architectures based on microservices," she says, "will change how CSP technology leaders expedite incremental, evolutionary investments in cloud-native and DevOps-enabled microservices design and deployments, to participate in digital value chains."

Which is a keen reminder that microservices architectures require a fair number of other paradigm shifts in both technology and culture—changes that aren't always easy to navigate.

"CSPs are typically not among the companies to first adopt cloud or cloud-only approaches as a path to effectively leverage microservices-driven OSS/BSS," says Kurth (putting it mildly, we'd say). "Microservices imply a new way of designing and deploying telco services, in tandem with collaborative development and operational systems processes, to drive service agility and mitigate existing infrastructure investments."

And that "in tandem" is key.

"When applying a microservices approach to legacy B/OSS, you can see that it's a very good idea – let old legacy billing, mediation, and CRM systems remain where they are and overlay them with applications that expose services at a granular level so that other systems – legacy or otherwise – can readily use their capability," wrote Sigma Systems CTO Catherine Michel [on her company's blog](#). "The benefit to CSPs: data will be managed and processed more efficiently, and you'll get more out of your legacy investment while avoiding costly change requests for new functionality of old systems."

Sigma isn't the only player in the OSS and BSS space to leverage microservices to modernize and simplify traditional support systems, of course, and that's for good reason.

According to Stratecast's Tim McElligott, in [a report](#) highlighting Amdocs' work on microservices, CSPs expect this approach will enhance collaboration and system openness, lower the cost of operations, help systems scale, improve BI, enable customization, and "help automate service creation, testing, fulfillment, assurance, optimization and maintenance."

Netcracker, Ericsson, Infosys, and many others are also embracing microservices as a path forward, usually within the broader context of a shift toward DevOps.

This could be a potential impediment of microservices: they do work best in a DevOps culture. McElligott wrote in that same report that one impediment to bringing microservices to market is that doing so "depends on these cultural and operational oddities," referring to DevOps and CI/CD. And despite the ubiquity of DevOps in some circles, it remains fairly odd to most CSP ops departments. He also cites latency, increased complexity (the microservices aren't inherently complex, but monitoring and service discovery could be made more complex with their implementation), and disaggregation.

Tata Consultancy Service's Raghavan Venkatasubramanian echoed these thoughts in another [white paper](#), "The prevalent culture at many telecom IT organizations may not be open to wide-scale innovations in their basic architecture principles," he writes, "preferring instead the status quo of existing software frameworks the company is familiar with."

So once again, we come back to a question of agility and corporate culture, the same worries that have plagued CSPs for years. But I'm not so sure this will be so tough a nut that the service providers can't crack it.

"Microservices are not the savior of legacy B/OSS," says Sigma's Michel, "but they are definitely the

right thing to consider as CSPs develop their architectures for the provision of digital services. Don't microservice an application just because you can – microservice an application with an idea of a valuable business application in mind.”