Regional Clouds Are the Answer

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Regional clouds are the answer. The question? It's different in different regions, but a pattern is emerging. It involves government data and telco infrastructure.

Europe has been a leader in public discussions in this area and can be a model for other regions. But it has failed so far to focus on what it wants to own and what it wants to only control or orchestrate. This is key to the kind of innovation ecosystem it needs to build to support its regional cloud. Timing is critical. Edge computing and 5G have created an open window, but it won't stay open for long.

In all regions, local control meets a long list of regional concerns. This is good for the region. But the diversity of solution approaches has great value to the world. These regional clouds will not be a threat to existing players because there is room in the market and there are roles for both.

Europe

Europe has been a leader in public discussion of a European regional cloud. If done correctly, Europe can do another service to the world, like what it did with the creation of the Open System Interconnect Model (OSI Model), sometimes called the Seven Layer Model, and the innovation ecosystem built around it.

It is becoming clear where there are gaps. In the recent Nobel Summit, Ursula von der Leyen, President of the European Commission, gave a speech that highlighted the desire for European technology sovereignty and technology resiliency. A recent survey in the UK concluded that

government staff had no idea where their organization's data resided. At the recent RSA Conference, Kim Nguyen covered ongoing work in the European Commission, including efforts by the Commission to make data location auditable.

At the same time, there is a debate within each of the three largest European telcos about how to address these gaps. There are two camps in each telco, each seeking to respond to the crisis described in the recent *Pipeline* article [Last Call for Telcos](). First, all sides realize that cloudification is required for the move to VRAN to virtualize cellular. Yet this is where they diverge: one side is advocating for telcos to build their own clouds, while the other notes that every effort of this type has failed. Because of this, goes the argument, telcos should give up and seek deals with one of the hyperscalers.

It should be said that neither side is winning this argument.

There are several public discussion forums underway in Europe. Although imperative for directing attention to this subject, these discussions are fragmented and with diffuse objectives arising from lack of a clear commitment to regionalism. They are not clear about what the region will take from the rest of the world as well as what will be regional. There is not clear consensus on what kind of innovation ecosystem the region is trying to achieve.

Lack of clarity extends to other areas, too—for instance, when it comes to regionalism versus nationalism and how federation can create the necessary scale while allowing for localization. Localization concerns not just nation-states but also smaller cultural divisions within nations.

Examples of these public activities in Europe include: European Alliance on Edge and Cloud (New Industrial Strategy), Open Industry 4.0 Alliance, IPCEI (European Cloud Infrastructure and Services), EU Evolve project, and Gaia-X. At the time of this writing, Capgemini and Orange [announced]() that they have planned to set up a new company named "Bleu" that would "work with Microsoft, to create a French cloud service provider to meet sovereignty requirements of the French State, public administrations and critical infrastructure companies with unique privacy, security and resiliency needs as determined by the French State." They also said that Bleu would join Gaia-X.

The pattern

What emerges from this is a pattern with echoes from the past.

In the early days of cellular, NTT decided it had to try to do something in cellular. Senior management looked internally and decided that while its culture and processes were fine for the existing business, they wouldn't work in this new area that required a high degree of innovation. Their answer was to set up a separate subsidiary (NTT Docomo) with all their innovative thinkers. In its early days, Docomo was wildly successful.

A similar approach would work to advance innovation now. Separate corporations could be created with federated connections to the telcos and governments in each region. These

entities would gather innovators from throughout the region and add a few people from outside the region who can turbocharge regional innovation. These federated corporations can create the needed cultural environment for innovation. They allow telcos more control while creating an innovation ecosystem. Finally, they honor the time-tested principle of keeping telcos as a local strategic resource. This is consistent with historical restrictions in the US, Europe, and other parts of the world on foreign ownership and control of telcos and other operators of national critical infrastructures. The federated approach would also allow local governments to have what they need while allowing for regional talent pooling and economies of scale.

How much of the cloud stack must be locally sourced, owned, and controlled is a key question each region must answer. Regional content and service providers may emerge in some regional innovation ecosystems, but this can complicate matters. So, one approach is to leave applications and content to end users (represented by the yellow color in Figure 1, below). Then, decide whether to focus on control or orchestration, or seek to own the underlying resources. Such decisions lie on a continuum. This is shown in Figure 1.
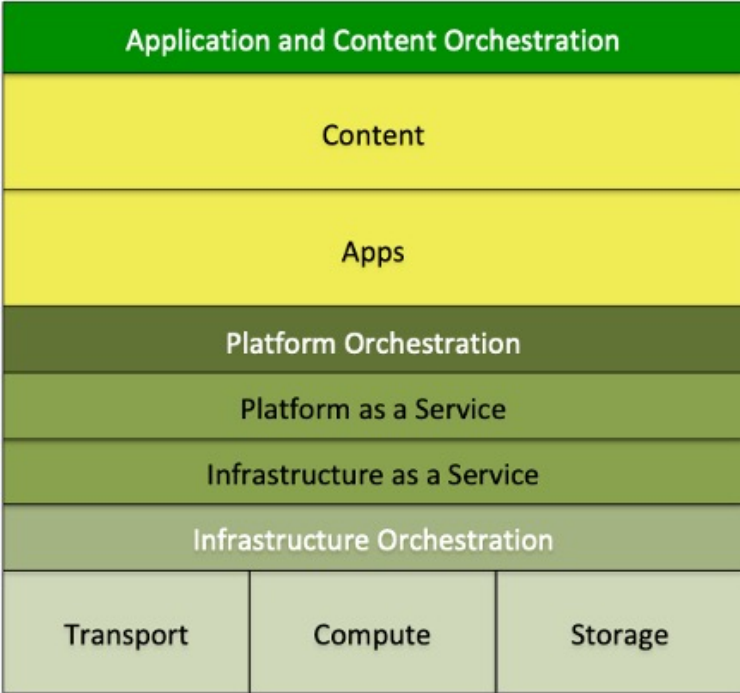
Application and Content Orchestration		
Content		
Apps		
Platform Orchestration		
Platform as a Service		
Infrastructure as a Service		
Infrastructure Orchestration		
Transport	Compute	Storage

**Figure 1: Focus of regional cloud in darker green for control/orchestration
to lighter for ownership of underlying resources**

The emergence of edge computing and 5G is why timing is so critical. The hyperscalers are way up the learning curve in basic cloud, but edge computing is a whole new game. By its very nature, edge is where regional clouds may have a distinct advantage.

Not a threat to hyperscalers

Regional clouds are not a business threat to hyperscalers, because there are room and roles for both. Analysts have told the author that they estimate that only 15 percent of existing IT has been moved to the cloud. This leaves 85 percent of IT yet to be moved to the cloud. Additionally,

there is an even larger portion of existing OT/ICT (operations technology/information and control technology) that has not moved to the cloud. Finally, we expect to see an approximate doubling of IT and OT/ICT with the rollout of edge computing. Ultimately, there is plenty of room for both the international hyperscalers and the regional clouds.

International enterprises may find international hyperscalers better suited to their needs. Additionally, the hyperscalers will compete for business with the regional clouds. This competition will result in lower pricing from the regional clouds and better services well-suited to regional needs from the hyperscalers. Some users may combine aspects of both. Opportunity and benefits will be available to all.

Other regions

Each region will want local autonomy for its telcos, other critical infrastructures, and government users. To this base will be added unique regional concerns. Taken together, these needs will shape the structure of each regional cloud.

In the US, the Department of Defense (DoD) created an RFP (request for proposal) for public cloud services. The RFP was sent only to the three US headquartered hyperscaler cloud providers. It resulted in a multibillion-dollar contract with one of these US providers. The author was told by one of the government staff leading the effort that, for security reasons, although operated by the hyperscaler, it is on segregated resources. That is, it is essentially a private cloud dedicated to the US DoD operated by a global hyperscaler.

Another effort to create a national cloud is underway in the US. It is focused on supporting research and technology development in artificial intelligence (AI). This is driven by a concern about a potential 'arms race' between the US and China around AI. There are key members of the US Congress in this effort, which started at Stanford University seeking to build an AI innovation ecosystem.

AT&T and Verizon have been divesting themselves of the web properties they acquired. This mirrors the argument going on inside the European telcos. In that, it is also a response to perceived failures by the telcos to achieve success in the cloud.

Other regions share some of these same concerns, while adding some that are unique to their situations. For example, everyone is worried about cybersecurity, but some parts of the world (for example, Australia) have a particular sensitivity in this area. Parts of sub-Saharan Africa and South America have concerns about cost and access, particularly access in underserved areas. Muslim regions have specific cultural and legal concerns.

The challenges confronting people trying to develop solutions to local problems in sub-Saharan Africa are quite different to those in Silicon Valley. Many universities around the world have good tech programs, but there are no leading-edge tech jobs in the area. Graduates leave to find work, spurring "brain drain" as they head to what are often called "brain circulation centers" like Silicon Valley.

Having local infrastructure designed with local innovators' needs in mind can result in healthy technology ecosystems in many places around the world. Some can become so lively that they attract talent from the rest of the world, becoming new brain circulation centers.

From a global perspective, diversity is important. Having many groups working on solving problems from many different directions provides the world with the greatest probability of finding optimal solutions to critical things we all face.

The time is now

The time is now for Europe as the global leader in regional clouds to make the investments needed to focus on key decisions around innovation ecosystems. It is these innovation ecosystems that will lead to successful regional clouds. The emergence of edge computing and 5G make this time critical—and there is no time to waste.