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Gaining the Edge in Emerging Markets

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Internet consumption has been on an upward trajectory since its inception, and the pandemic accelerated this momentum at a rate none of us could have predicted. Although digital transformation is global, Internet penetration rates in emerging markets have far surpassed those in developed economies such as North America and Europe. For example, in North America, the number of Internet users grew from 273 million in 2011 to 348 million in 2021. Comparatively, the number of Internet users in Asia increased from 1 billion to 2.8 billion in the same ten-year span.

Driving the demand

Along with increased Internet use, the demand for direct-to-consumer content is rising quickly in emerging markets where the economies of developing countries are going through rapid growth and transitioning into modern industrial states. Strong consumer class expansion, rapid technological adoption, a growing affluent middle class, and digital transformation provide a massive opportunity for businesses and providers to garner market share in these regions, including India, Asia, China, the Middle East, Africa, and Latin America.

Users in emerging and developed markets alike are demanding more personalized media and entertainment experiences. Personalization is a compute-intensive endeavor that requires the application itself—not only cached content—to be at the edge. Having the actual compute at the edge allows for the data processing that enables a richer, more customized digital experience. Companies that can deliver those experiences will be the ones winning market share.

In addition to rising Internet use and high population rates in developing countries, the volume of data consumption is monumental. This is due largely to the rapid proliferation of 5G mobile technology and exponential access to mobile devices. Mobile drives demand for direct

connectivity with mobile ISPs, and the use of mobile devices is much more prevalent in emerging markets than in developed markets. Southeast Asia has the most engaged mobile population in the world, and according to data from the International Telecommunication Union, in 2017 98.7 percent of the population in developing countries had mobile subscriptions. Although live commerce is just recently becoming mainstream in Western countries, in China, it has transformed the retail industry and established itself as a major sales channel in the last five years. Live commerce combines real-time consumer participation with instant purchasing, which requires immediate data correlation and almost nonexistent latency.

All this demand translates to explosive net new revenue potential in these economies but achieving it does not come without some challenges.

Business challenges in emerging markets

Solutions that work in the U.S. and Western Europe often don't work for organizations trying to break into emerging markets. One of the key business challenges that companies face when expanding globally is deploying compute capacity country-by-country. This is a CAPEX-heavy, time-intensive process that requires people on the ground in each country—and a large dose of patience for local bureaucracy. Additional business challenges in emerging markets include:

Local entity requirements

In many emerging markets, local ISPs are government-owned and have strict regulations on working with foreign entities.

Complex compliance schemes

Complex and foreign regional and local regulations in emerging markets, such as content regulations and data sovereignty rules, can make it difficult to do business as an outsider.

Fragmented telecom landscape

In many emerging markets, the telecom landscape is fragmented with inadequate carrier-level network connectivity and often limited network suppliers. Even at the provincial level, interconnectivity and peering are often low, which makes it difficult to directly connect with local ISPs.

Lack of pricing transparency

Some emerging markets have expensive network tariffs and high bandwidth costs. In general, lack of pricing transparency means that, without a partner with strong local relationships, it's easy for foreign companies to end up spending a lot of money without knowing the best return on that investment.

Technical challenges in emerging markets

Operating in emerging markets is often difficult because IT infrastructure, power and water utility infrastructure, and network infrastructure are all typically not as well established as they are in developed markets. This makes getting data center capacity much more difficult and often leads to poor performance. Specific infrastructure challenges in emerging markets include:

Underdeveloped interconnectivity

Underdeveloped interconnectivity into, out of, and within countries includes limited peering between local ISPs and, often, poor last-mile connectivity. Backhaul connectivity into and out of emerging markets is also less well-developed.

Underdeveloped utility infrastructure

Utility power deficiencies make establishing PoPs particularly challenging and even more important for ensuring availability.

Underdeveloped network infrastructure

While some emerging markets, like China, are leading the world in 5G development, in other regions even 4G service is not widely available and 2G service is still common. In those cases, applications must contend with lower network speeds. Many emerging markets have less overall bandwidth, resulting in high bandwidth costs.

As more people simultaneously connect and access digital services, the traffic spikes put a strain on local networks. Public Internet congestion is a top concern for companies doing business in emerging markets as it leads to issues like latency and jitter, which jeopardize user experiences. Because customers are increasingly expecting to access fast and reliable digital services anywhere anytime, companies that fail to provide this will take a hit on their bottom line.

Cloud at the edge

New technology requirements such as higher density network infrastructure and advanced capabilities in compute and storage at the edge play a key role in delivering a premium digital experience. This requires multiple PoPs at the edge within each country—not only in the first-tier cities, which can be relatively well developed, but also in second- and third-tier economies as well.

Many organizations looking to deploy at the edge are leveraging dedicated private cloud environments such as bare metal cloud, where hardware is dedicated to each company, its content, and its users' information. Dedicated private cloud reduces the constraints of public cloud such as latency, and eases obstacles like the “noisy neighbor” effect.

Edge cloud and networking providers with a large number of PoPs around the world—especially in hard to access emerging markets—enable organizations to deploy closer to end users and accelerate their networks to deliver the best digital experience

possible. When cloud infrastructure is deployed too far from end recipients, users often experience high latency. This is especially troublesome for verticals requiring rapid transactions such as media and entertainment, gaming, and fintech. To solve for this, processing, storage, and networking capabilities should be deployed at the edge—as close to end targets as possible. In other words, businesses need to deploy cloud at the edge to ensure they have cloud networking, storage, and compute resources available.

Many Western organizations assume that the largest cloud hyperscalers—AWS, MS Azure, and Google—already have data center presence in every market, including in developing countries. However, that's not necessarily the case. In reality, hyperscalers and other public companies base expansion on two key elements: profitability and ease of entry. Although they are major players in Western countries, hyperscalers often don't establish a presence in new markets that pose financial or logistical risks with barriers such as government relations, national infrastructure, and resources. These economic pressures and geopolitical obstacles prevent the hyperscalers from being omnipresent. According to TeleGeography, of the 402 emerging market cities with a population exceeding one million, only 29 of those cities have a public cloud PoP present.

Organizations looking to deploy at the edge should consider providers that are experts in expanding at the edge and have the experience and resources to assist in expanding into hard-to-reach geographies. From streaming media and entertainment companies, to gaming and blockchain, to untapped business and healthcare software services and IoT developments that facilitate smart cities, businesses across multiple industries can use edge computing to improve their digital presence in formerly unreachable markets.

This is where edge cloud service providers come in. They are specialized in providing a multitude of points of presence (PoPs) in traditionally hard-to-access regions. They are the authority in providing services worldwide to reach new audiences. These include services such as global networking and IP transit, CDN networks and content acceleration solutions, as well as bare metal cloud, so providers have a dedicated cloud presence as close to their end targets as possible.

Local market partnerships

Establishing an organization and winning in emerging markets is challenging, especially if you're used to doing business in developed markets. But the business and technical challenges can be overcome with a core set of best practices and key partnerships to help navigate through uncertainty. While the obstacles for companies looking to tap into these previously unreachable markets can be significant, they are not insurmountable.

To capitalize on the tremendous opportunities emerging markets present, innovative business leaders are working with partners with local market expertise and an established global footprint. A partner with a combination of global recognition and experience has already done the heavy lifting of building the important relationships that would otherwise require a team on the ground to get up and running in emerging markets and avoid imminent mistakes in the process. The most reputable and well-established edge cloud providers have in-depth understanding of local Internet exchanges, ISPs, telecommunications operators, and data centers in emerging markets. Some even have a bilingual technical support team for immediate problem resolution.

Right now, there remains a huge opportunity to garner market share in emerging markets. But the window is closing as more companies establish roots in these previously untapped markets. If you haven't already gotten started, or if you've hit roadblocks, talk to an edge cloud services provider with expertise in fast-growing emerging markets to learn how they can help you navigate through the uncertainties and successfully deploy at the edge.