Dyn in emerging markets - a distributed compute story

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DNS infrastructure-as-a-service and bulk and transactional email service provider Dyn provides a great customer case study for multi-tenant datacenter providers. The company's modus operandi is to get its network reach as close to its customers as it can. Considering the nature of its network, power redundancy is not crucial, but connectivity is the company's primary requirement when selecting a colocation provider. If one of its 18 points of presence (POPs) all colocated with multi-tenant datacenter providers goes dark, traffic is immediately routed to another location with no interruption to its end users. Therefore, Dyn finds it strategic and cost-effective to deploy small workloads in a highly geographically diverse manner.

Dyn's colocated POPs

North America	Europe	Asia-Pacific	Latin America
Ashburn, Virginia	Amsterdam, Netherlands	Hong Kong	São Paulo, Brazil
Chicago, Illinois	Frankfurt, Germany	Mumbai, India	
Dallas, Texas	London, UK	Singapore	
Miami, Florida	Warsaw, Poland	Sydney, Australia	
Los Angeles, California		Tokyo, Japan	
North Bergen, New Jersey			
Palo Alto, California			
Seattle, Washington			

Dyn maintains its core operation nodes, which contain eight cabinets each, in Palo Alto and North Bergen. Almost all other POPs consist of just one cabinet. Considering that connectivity is perceived as the most valuable asset in a multi-tenant datacenter, Dyn does gravitate toward the major interconnection players; however, robust connectivity ecosystems are not necessary. Dyn would

rather leverage two datacenters that have four networks each than one facility with eight networks to hedge against facility failure. Two networks are Dyn's minimum, to allow for concurrent maintainability when network maintenance is necessary.

Emerging markets

With a growing customer base, Dyn is continually looking for additional colocation opportunities. The company has realized that many of its end users are based in emerging markets in the Asia-Pacific and Latin American regions. After a year of scrutiny of the Indian multi-tenant datacenter market, the company just deployed a rack with GPX Global Systems in Mumbai. The effort was well worth it; previously, average response time for Dyn's customers in India was 250 milliseconds, whereas in the United States, average response time is 30 milliseconds. With a physical presence in Mumbai, the company's Indian customers now experience a 40-millisecond response time. During reconnaissance, Dyn was surprised to find three prospective multi-tenant datacenter providers that met its connectivity requirements, so the company was able to choose a provider based on infrastructural redundancy.

Since Dyn does have high-density deployments, power density is rarely an issue, when selecting a provider. Months before, Dyn deployed a POP with Terremark (Verizon) in São Paulo and continues to shop around various emerging markets. The company indicated that China is top priority. In addition to this initiative, Dyn is also looking to incorporate secondary facilities in major connectivity hubs that it's already in where its customer base is relatively dense. In Amsterdam, for instance, Dyn has deployed POPs with two different providers to maximize its reach to end users.

The 451 Take

This case stresses the importance of various differentiators for multi-tenant datacenter providers. With distributed compute strategies coming into fashion, infrastructural redundancy becomes less important, while connectivity and location are valued to a greater degree, for some forward-thinking customers. Furthermore, service providers like Dyn that offer a service used by consumers, SMBs and enterprises, serve as great weathervanes for Internet and content usage patterns.