epsilon

CLOUD-CENTRIC DATA CENTRE INTERCONNECTION

BUILDING A SCALABLE AND INTERCONNECTED ECOSYSTEM

Simple Steps for Interconnecting, Optimising and Taking Control of a Global Data Centre Network Infrastructure

Data centres have traditionally operated as standalone facilities or as closed ecosystems. In a market that is hyper-connected, Cloud-centric, and moving faster than ever before, data centre environment are moving from closed and limited to open and agile. Data Centre Interconnect (DCI) is becoming an increasingly important strategy in enabling businesses to piece together their hybrid infrastructure.

How do we define a Cloud-centric DCI ecosystem? It is simply a high-density network ecosystem that enables interconnection between data centres, clouds, businesses, services and applications without any geographical limitations. Software-Defined Networking (SDN) fabrics today are making interconnection easier, offering a more agile, scalable and flexible way to access the DCI ecosystem.

> ## Data Centre Interconnect
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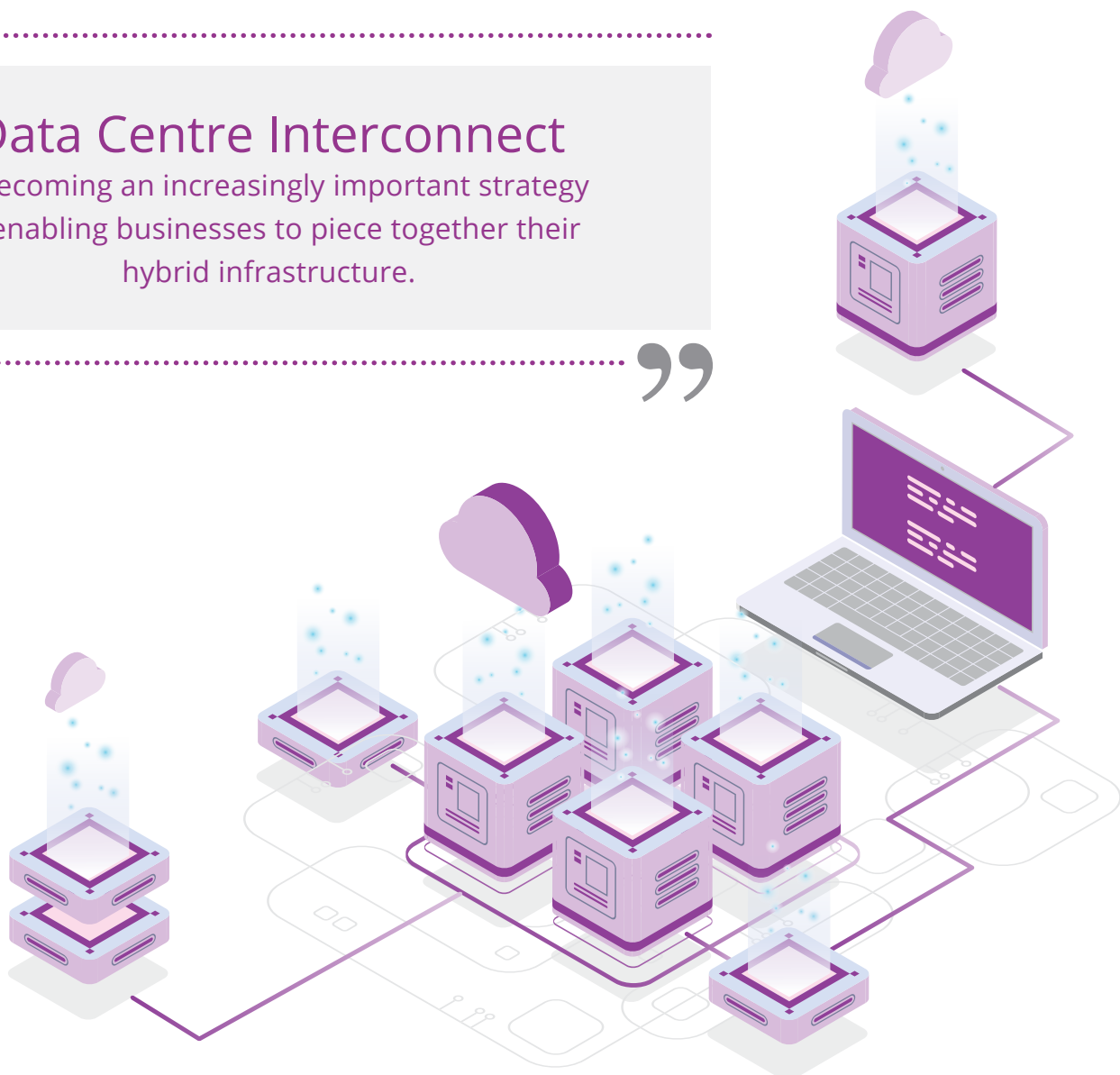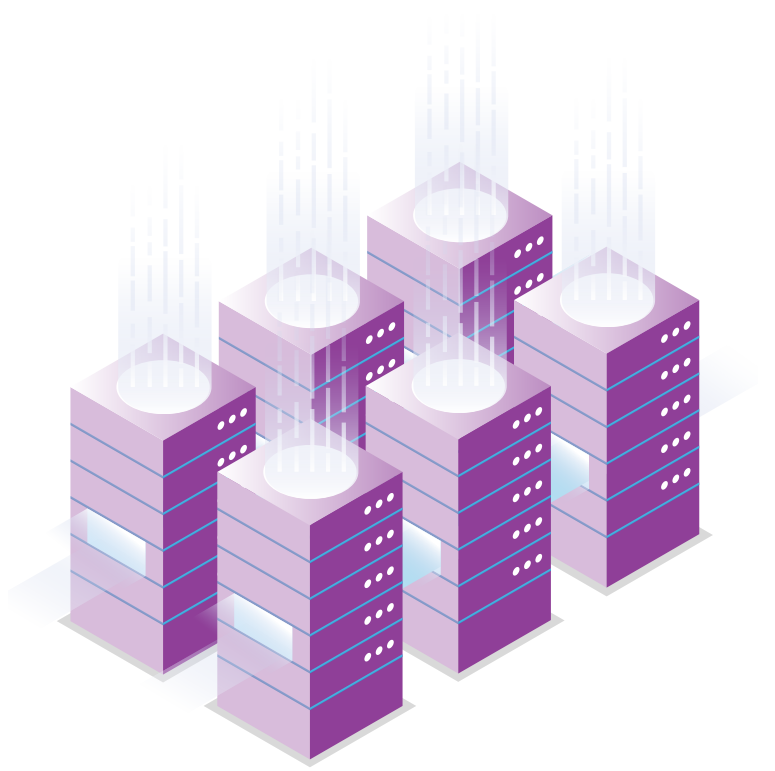
OPEN, PROGRAMMABLE AND INTERCONNECTED

Businesses are increasingly seeing the importance of taking control of how they connect, optimise and expand their operations around the world. They are choosing SDN fabrics to interconnect their data centres on-demand, rather than being locked into one data centre provider's ecosystem. With SDN fabrics, it is not as costly or complex to interconnect data centres and manage network connectivity.

The legacy approach to DCI was built around multiple suppliers, long-lead times, manual processes and offline "on the phone" procurement. With the growth of hybrid cloud, global businesses cannot afford to be placed on unnecessary waits and delays. At the same time, traditional DCI ecosystems limit a company's growth and the customers and partners they can interconnect with. The fact is that a growing number of options now offer a Cloud-centric DCI ecosystem that goes beyond legacy networking.

Customers are no longer restricted to a single data centre environment or having to allocate resources to doing it yourself. They are leveraging new networking models to create flexible, fluid and intelligent DCI ecosystems that support their immediate and future needs.

With greater network programmability, Enterprises, Over-the-Top (OTT) players, Content Providers, Anything as a Service (XaaS) Providers and Managed Service Providers can easily build their Cloud-centric DCI ecosystems and create new competitive advantages. It is a new networking model that removes the limits on DCI to enable these businesses to grow whenever and wherever they see opportunities.

DCI Market
**11%**
CAGR between 2017-2023

REMOVING THE COMPLEXITY FROM CONNECTIVITY

The DCI market is expected to have a compound annual growth rate of 11% between 2017 and 2023. It is projected to be worth $6.5 billion over the same time frame[1]. The widespread adoption of Cloud-based applications and services, distributed IT systems and processes, continual enterprise transformation and the borderless nature of the global economy, are all driving the DCI market.

Whether it is a global enterprise business or a Software as a Service (SaaS) provider looking to roll out in new markets, DCI is a critical strategy for connecting to customers and partners. The challenge for many organisations is how to connect to a diversity of data centre infrastructure efficiently, while ensuring that it will serve both current and future demands.

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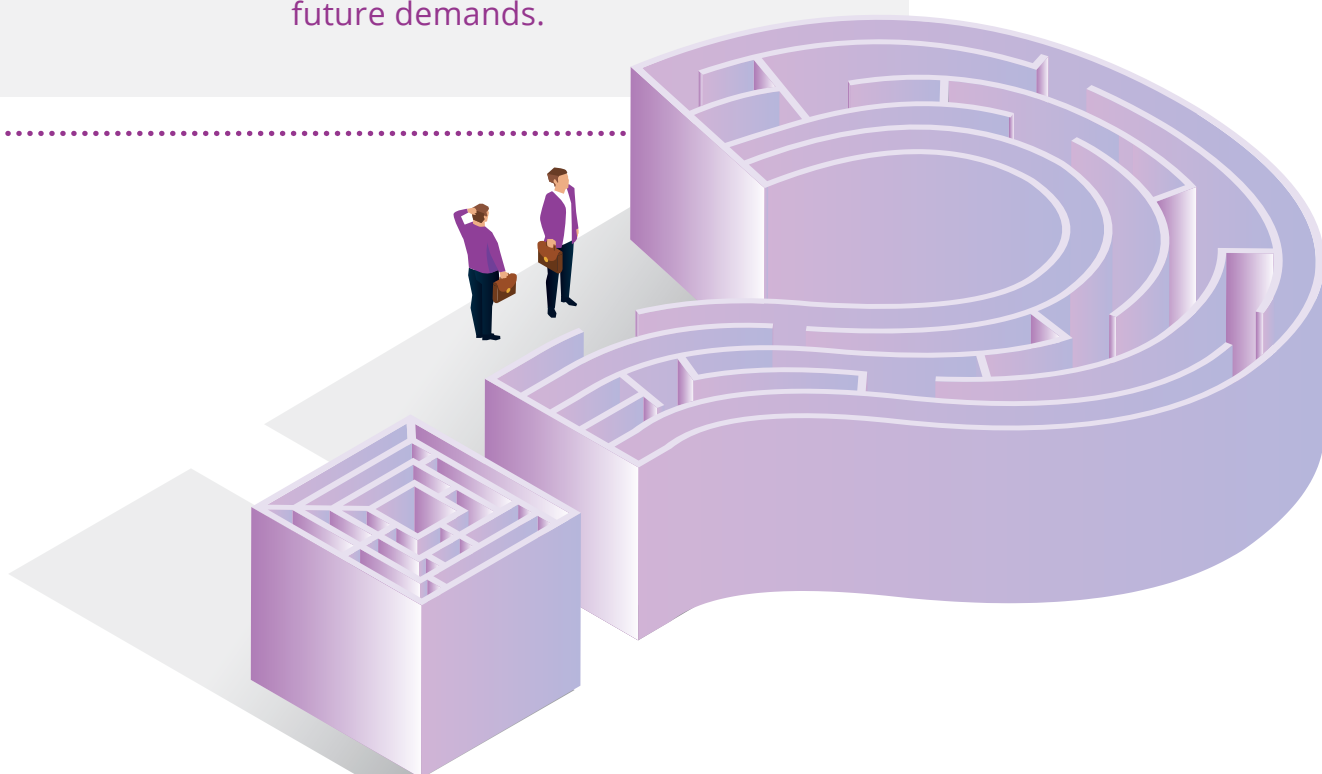
[1] Global Data Center Interconnect Market Research Report- Forecast 2023, Market Research Future: https://www.marketresearchfuture.com/reports/data-center-interconnect-market-4144

Challenges may vary across verticals, and there is a multitude of pain points that organisations face when connecting their data centres globally. Some of the most common are:

⚠ Complexity

Managing multiple service providers across different local and regional markets can be resource-intensive and costly. Pricing, performance and manual processes can all add to an organisation's workload, making it impossible to build a functional DCI ecosystem.

⚠ Flexibility and Scalability

Time to market is critical. Most businesses today need the ability to roll out new services quickly across the globe and optimise their connectivity for their applications. A traditional DCI ecosystem restricts their ability to connect flexibly and scale across interconnected networks of data centres.

⚠ Geographical Limitations

If an organisation is locked into a single DCI ecosystem, they will be challenged as they grow in markets where their provider is not present. Such "lock-in" means that they will not have the freedom to grow seamlessly in new markets or instantly turn up services across a truly global footprint.

⚠ Serving a Comprehensive Set of Needs

Increasingly, organisations are seeing greater need to interconnect data centres with the Cloud Service Providers (CSPs) and global Internet Exchanges (IXs). A traditional DCI ecosystem puts them in a position where they have limited connectivity options. A truly diverse, Cloud-centric ecosystem instead offers comprehensive coverage of data centre operators, CSPs and IXs.

⚠ Finding Expert Partners

Organisations need connectivity partners that are experts in operating, managing and delivering network services, making the network easier to consume through SDN platforms that are on-demand, transparent and intelligent. A global connectivity provider should look after all aspects, from the network performance to the provisioning speed, with focus on delivering an agile and excellent service experience.

85%
of enterprise web traffic used for cloud services

BUILDING A CLOUD-CENTRIC DCI ECOSYSTEM

The root of most of these challenges are around the alignment of commercial needs and networking. An organisation's approach to DCI is largely tied to the business outcomes and their customers' needs. Connectivity must be a long-term IT strategy because of the number of applications and services running on it. Regardless, it should create new business and not lead to more IT challenges in the future.

In competitive markets, end users have a variety of service providers to choose from. An OTT provider locked into a traditional DCI ecosystem will lose out on huge business opportunities if it is unable to reach its consumers in new markets. Similarly, if an enterprise wants to move quickly into an emerging region to capture a first-mover advantage, they cannot afford to have their network infrastructure to hold them back.

So, what are the considerations when selecting a service provider partner to build a Cloud-centric DCI ecosystem?

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① Planning

The starting point is looking at the diversity of the data centre infrastructure in use and determining how the organisation's IT estate is going to evolve in the future. Can the number of network service providers be consolidated? How quickly can it adapt and scale to new requirements? Are the organisation's data centres present in unique markets? Is it a patchwork or a cohesive approach? Is the organisation ready to transform and change over time? These are critical questions when positioning DCI from simply troubleshooting an immediate need, to instead, creating a coherent and connected ecosystem.

② Partnering

Finding the right SDN-based service provider will simplify and accelerate the development of a DCI ecosystem. Not all SDN platforms are created equally in terms of flexibility, bandwidth capacity and connectivity options. A comprehensive SDN platform should be able to deliver on-demand interconnection with data centres across the globe as well as to the CSPs and IXs. The underlying core network is also an important factor – in this instance, partnering with a service provider with a carrier-grade industry-certified (such as MEF CE 2.0 certification) backbone should be a top consideration. Other evaluations include Quality of Service (QoS), delivery lead times and repair times.

③ Building

An SDN fabric allows you to link data centres, clouds, internet exchange points (IXP) and a variety of networks. This enables businesses to string together an ecosystem of Cloud-centric data centres with direct access to the cloud and IXP. They should be able to use a single platform to provision these connections with high levels of automation. This drives efficiency, reduces procurement time and removes the need for resources to manage multiple relationships. The ecosystem can be aligned via one platform for a simple user experience.

CE 2.0 MEF CERTIFIED

Carrier Ethernet 2.0 (CE 2.0) is a ubiquitous, standardised, carrier-class Service and Network defined by five attributes that distinguish it from familiar LAN-based Ethernet. CE 2.0 networks and services enable multiple classes of service (Multi-CoS) and manageability over interconnected provider networks.

For more information on MEF Certification, please visit: www.mef.net/carrier-ethernet-services/ce-2-0-overview

④ Managing

A global SDN platform has to offer real-time visibility into the network performance across the entire DCI ecosystem. Regardless of whether it is metro or long-haul DCI, being able to manage the service supported by network analytics is a huge differentiator. The organisation can continually adapt and optimise the network connectivity with granular bandwidth options to meet changing needs on an intuitive and intelligent interface.

⑤ Expanding

When new partners, customers or sites need to be connected, the organisation has to have the ability to turn-up services on-demand with a Cloud-centric DCI ecosystem that is ready to grow. Each data centre site should offer a growing number of connectivity options via a SDN-enabled model that allows the organisation to control where and how they connect its business. The ecosystem is ready to adapt, change and grow to new global destinations.

EPSILON USE CASES

Kakao is a South Korean Internet company that was established in 2010. The company operates Kakao Talk, a mobile messaging app with 220 million registered users and 47 million active monthly users. It wanted to grow its multi-platform mobile app around the globe and bring the best experience to their users.

CHALLENGE
Kakao needed a flexible yet cost-efficient way to connect their application globally, while having diverse option to scale when needed. User experience is a top priority with little tolerance for any lags, technical faults or delays.

SOLUTION
Epsilon delivered diverse, high-performance DCI between Singapore and Tokyo, as well as interconnection between data centres in Tokyo and Los Angeles over its global private network. This immediately expands Kakao's global reach for optimising its mobile app's user experience and delivering consistent performance across these new markets.

PT Visionet Data Internasional (VisioNet) is the first total IT Managed Services Company in Indonesia. Offering a nation-wide coverage for more than 155 service points throughout Indonesia, it was looking to expand its connectivity to the major CSPs to serve their Indonesian enterprise customers.
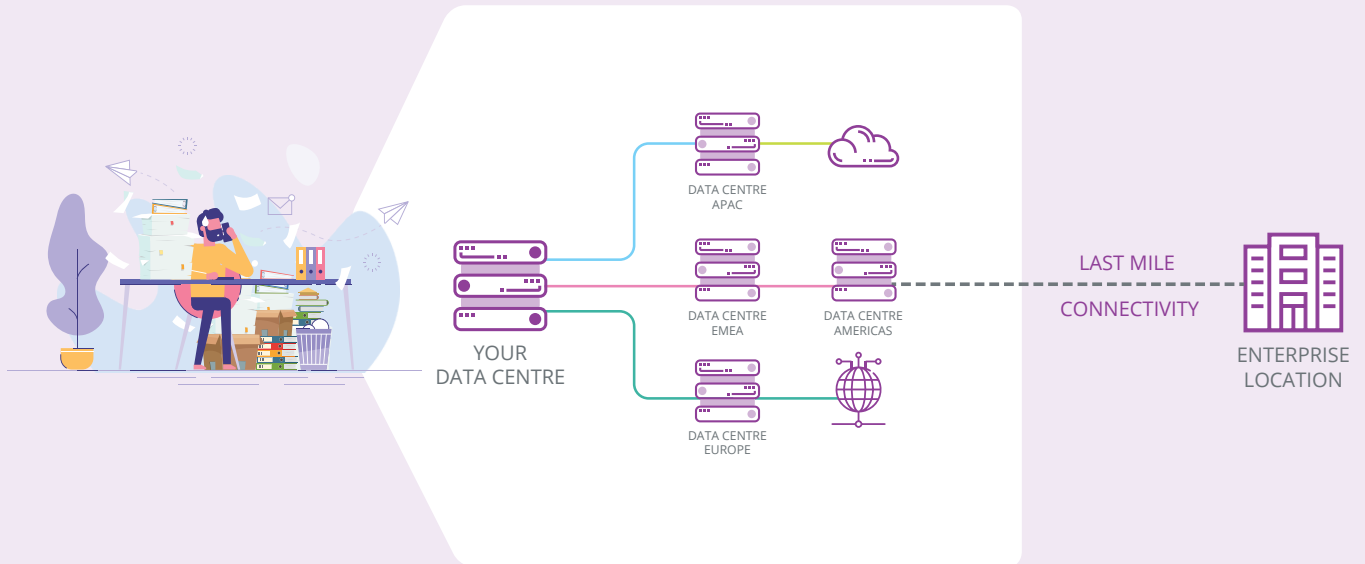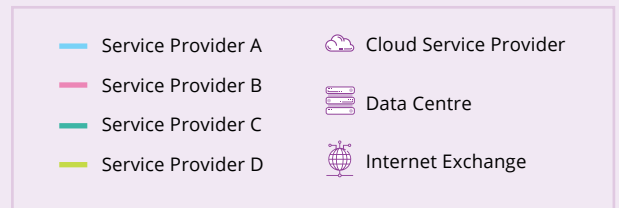
CHALLENGE
VisioNet's data centres do not have direct connection to the CSPs. It needed a solution for interconnecting data centres with Cloud on-ramps to directly access multiple CSPs to expand its cloud offerings.

SOLUTION
Epsilon enabled scalable, private and secure connections between data centres with multiple Cloud on-ramps across the region. With access to Epsilon's SDN fabric, VisioNet gained the capability to connect their customers to global data centres and CSPs to accelerate the delivery of its Cloud-managed services.
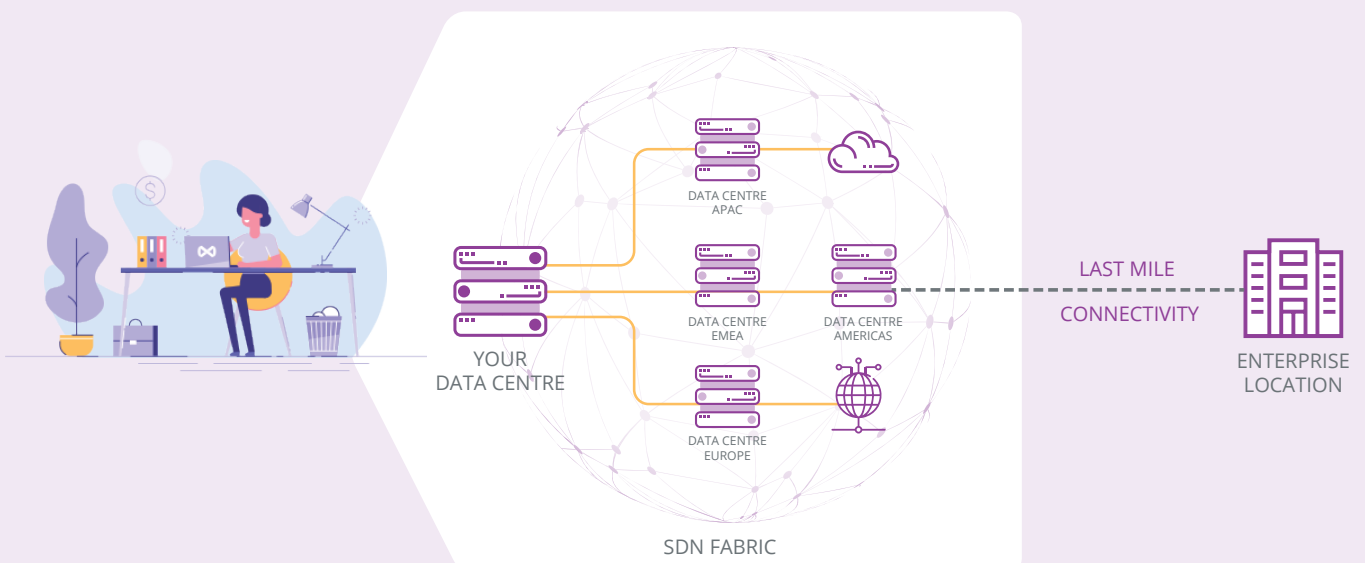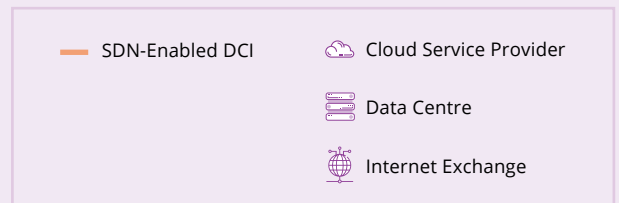
TRADITIONAL DCI ECOSYSTEM

• Multiple Service Providers and Network Operators

• Long lead time to turn up connectivity

• Rigid term of at least 12-24 months

• Limited data centre footprint and cloud on-ramps

DATA CENTRE APAC

DATA CENTRE EMEA

DATA CENTRE AMERICAS

DATA CENTRE EUROPE

YOUR DATA CENTRE

LAST MILE CONNECTIVITY

ENTERPRISE LOCATION

CLOUD-CENTRIC DCI ECOSYSTEM

• SDN platform enabled for self-service ordering and provisioning

• On-demand connectivity to a global interconnect ecosystem

• Flexible term from as short as 1 day

• Full network visibility using real-time analytics

DATA CENTRE APAC

DATA CENTRE EMEA

DATA CENTRE AMERICAS

DATA CENTRE EUROPE

YOUR DATA CENTRE

LAST MILE CONNECTIVITY

ENTERPRISE LOCATION

SDN FABRIC

BETTER BUSINESS OUTCOMES WITH A CLOUD-CENTRIC DCI ECOSYSTEM

INFINY
BY EPSILON

• Freedom to grow anywhere
• Flexibility, scalability and adaptability
• Control and optimisation of your ecosystem
• Greater cost-efficiency in the long run
• On-demand access to data centres, CSPs and IXs
• End-to-end transparency, visibility and monitoring
• Agility to support future growth
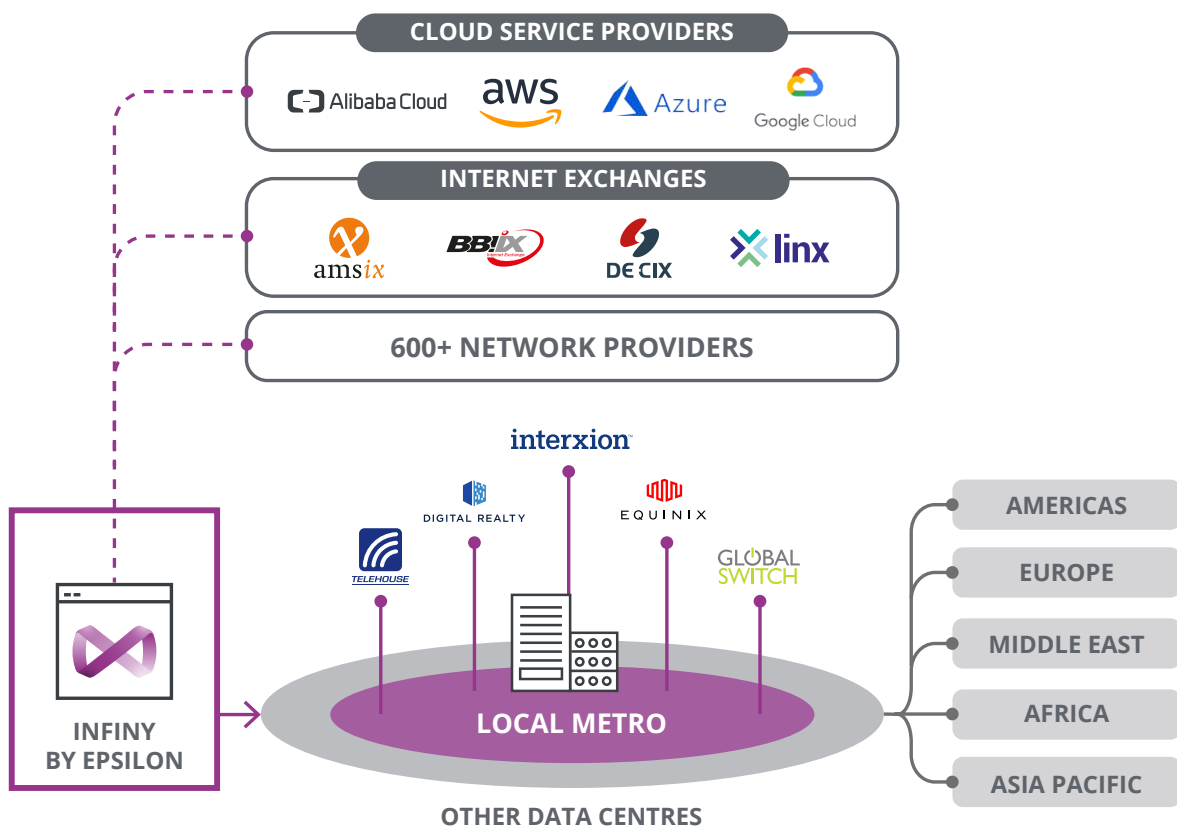
AUTOMATED, SELF-SERVICE PLATFORM FOR INTERCONNECTION

Infiny by Epsilon is an SDN platform for interconnecting data centres, CSPs and IXs. Accessible via web-based portal, mobile apps and APIs, users gain access to Epsilon's network fabric with the ability to order and provision connectivity services on-demand.

Register for an Infiny account on **www.infiny.cloud**

CONTROLLING YOUR FUTURE

Every organisation should be able to seamlessly build, manage and grow a DCI ecosystem that gives them complete control over the way they connect and deploy applications and services. A Cloud-centric DCI ecosystem facilitates diverse interconnects between data centres and connections to the Cloud, enabling businesses to support their hybrid cloud infrastructure and extend their reach in new markets.

With the right global connectivity partner, there is no need to lease a colocation space to connect to other data centres and networks, reducing the overall cost of entry and the need for additional investments or resources. Businesses also do not have to worry about legacy infrastructure as the SDN platform gives them control over the way they interconnect global data centres and connect to the cloud.

Ultimately, a long-term DCI strategy is a combination of a robust core network, SDN fabric and an on-demand platform. It is a new networking model built for modern business services and applications. Each organisation is unique and has to carefully consider the way connectivity impacts their business outcome.

US$28.8bn
Global SDN market size by 2023

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ABOUT EPSILON

Epsilon is a cloud-centric global connectivity and communications network service provider, connecting to 220 data centres in 26 markets. The company's SDN platform, Infiny by Epsilon, combines on-demand connectivity, a web-based portal and APIs to give partners simple and effective solutions. All Epsilon services are powered by a carrier-grade, hyper-scalable global backbone that connects the world's communications and technology hubs. Epsilon is headquartered in Singapore with offices in London, New York, Dubai and Sofia.
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