EQUINIX | CSI YOUR PERPETUAL EDGE

REALISE THE OPPORTUNITIES OF DATA AT THE EDGE

Utilising the power of interconnection to release the full potential of your data

An Equinix and CSI Briefing Paper

WHY READ THIS PAPER?

There is no stopping big data. It just keeps on getting bigger and bigger. For enterprises in particular, the ability to capture, process and derive insights in real-time from an ever-increasing range of data sources is critical. It enables competitive edges to be created, maintained and sharpened.

But as ever, along with new opportunities come new challenges. Realising the full potential of your data when operating with a traditional IT infrastructure is now almost impossible. Migrating to a distributed data architecture is the way forward, and inter-connection is key to realising the opportunities that follow.

IN THIS PAPER, WE LOOK AT

- TODAY'S DATA CHALLENGES
- THE FAILINGS OF TRADITIONAL IT ARCHITECTURES
- DISTRIBUTED DATA ARCHITECTURE AND INTERCONNECTION
- RELEASING THE FULL POTENTIAL OF YOUR DATA WITH CSI AND EQUINIX

MORE DATA MORE CHALLENGES MORE CONCERNS

From video content and ecommerce transactions to customer information and research, digital data is now a key source of value and differentiation for all businesses. MicroStrategy reports that 90% of enterprises currently say data and analytics are key to their organisation's digital transformation initiatives.[1]

Sectors as diverse as pharmaceuticals, transport, manufacturing, retail, financial services and agriculture are being transformed by the ability to capture, process and derive insights in real-time from an exploding range of data sources.

Staying competitive means maximising the power of data.

of enterprises currently say data and analytics are key to their organisation's digital transformation initiatives[1]

of firms in 2019 invested more than £390 million annually in big data – a huge leap from 12.7% in 2018[2]

IT'S DATA MANAGEMENT CHALLENGES

New challenges in creating, storing, managing and using data are putting IT architectures under increasing pressure.

The need for speed

Applications such as streaming videos, trading platforms, auctions, gaming and digital advertising require very low latency – sometimes as low as sub-<20ms – to deliver satisfactory user experiences. Delays cost money, customers and competitive edge.

As organisations re-engineer business processes to take advantage of technologies such as the internet of things (IoT) and data analytics, near-instant processing and communication of data becomes increasingly critical. IDC forecasts that more than 150bn devices will be connected across the globe by 2025, most of which will be creating data in real time.[3]

New technologies – such as self-driving vehicles – also rely on very low latency data transmission. Connectivity delays can be catastrophic.

Volume overload

Partly driven by the increasing use of IoT, data analytics, artificial intelligence (AI) and machine learning, the sheer volume of data that needs to be stored, managed and often processed in real-time is becoming overwhelming. Within the enterprise segment, Cisco forecasts that database/analytics and IoT will be the fastest growing applications in terms of workloads, with 21 percent CAGR from 2016 to 2021, or 2.6-fold growth.[4]

As mentioned, new technologies such as self-driving vehicles are adding to the impact. Zion Market Research forecasts that, as connected car functionality increases, data flow will increase to 1TB of data per vehicle per month by 2025. While IDC predicts that the global datasphere will grow from 33 Zettabytes (ZB) in 2018 to 175 ZB by 2025.[5] IDC also predicts that, by 2025, every connected person in the world will have a digital data engagement over 4,900 times per day on average – about 1 digital interaction every 18 seconds.
The figure stood at a mere 298 interactions in 2010.[3]

150bn+ devices
will be connected across the globe by 2025, most of which will be creating data in real time[3]

of the datasphere is predicted to be represented by real-time data by 2025, double the 15% in 2017[3]

21% CAGR
is the forecast growth of database/analytics and IoT application workloads across enterprises from 2016 to 2021 – 2.6-fold growth[4]

33ZB → 175ZB
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4,900+ times per day
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Combining data with third parties

Supporting new services and business models means accessing an increasing variety of external data sources. Enterprises need to exchange data in real-time with a growing array of partners, suppliers and customers.

Many of the transformational business models that have emerged in recent years – in areas such as digital advertising, cyber security and cryptocurrencies – rely on the real-time exchange of very high volumes of data across globally dispersed ecosystems of partners and customers.

Gartner's Magic Quadrant report predicted that, by 2020, organisations offering users access to a curated catalogue of internal and external data will realise twice the business value from analytics investments compared with those that do not.[6] While another survey has found that, to support their decision-making, enterprises were using on average five internal data sources and three external sources. Half of the respondents expected those numbers to increase, with the growth rate of external sources outweighing that for internal data sources.[7]

Increasing use of cloud platforms

Partly in response to growing data volumes and the need for greater flexibility in data usage, enterprises are increasingly turning to cloud platforms to meet their varied compute, storage and analytics requirements.

But this transition to hybrid infrastructures is creating new management challenges, as the volume of data transiting between private and public clouds continues to grow rapidly. Cisco has forecast that, by 2021, 95% of all data centre traffic will be between cloud data centres, compared to 88% in 2016.[9]

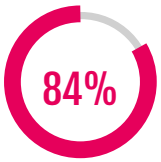
More demanding regulations

The regulations covering data protection and data sovereignty in many geographies are becoming ever more stringent.

The focus on stronger consumer privacy has already resulted in new regulations that include Europe's General Data Protection Regulation (GDPR). Added to which, data sovereignty is now increasingly challenging for international businesses. More than 20 major countries now insist that their citizens' data be stored on physical servers within the country's physical borders, and restrict data transfers across their borders.[9]

2x
the business value
will be realised from analytics investments by organisations offering users access to a curated catalogue of internal and external data by 2020, compared with those that do not[6]

46% vs 33%
enterprises run 46% of workloads in private cloud, compared to 33% workloads in public cloud[8]



of enterprises list cloud cost management as top initiative in 2019, for the third year in a row[8]

Up to 4% of global annual turnover
is the potential cost of failing to meet GDPR compliance

20+
major countries now insist that their citizens' data be stored on physical servers within the country's physical borders, and restrict data transfers across their borders[9]

TRADITIONAL ARCHITECTURES ARE FALLING DOWN

Built on central data centres and hub-and-spoke networks, traditional IT architectures are struggling to meet the demands of today's data-driven businesses.

COMMON ENTERPRISE PROBLEMS

Unacceptable latency

The physical distance between globally dispersed users and centralised data centres introduces unacceptable latency for many applications. Take, for example, a user in South-East Asia accessing an application running on a server in London, which needs to call on a database sitting in a data centre in East Coast US. Given the cumulative delay in transmitting data across such vast distances, that user is unlikely to enjoy a satisfactory experience.

MarketWatch has forecast that enterprise spend on private MPLS networks will continue growing at 6.5% CAGR between 2019 – 2024, with traffic increasing faster than prices fall.[10]

8x

is the reduction in TCP throughput caused by 30ms of latency, pushing up costs[11]

Unsustainable bandwidth costs

The bandwidth costs associated with transmitting high volumes of data across global private networks is becoming unsustainable for many businesses.

MarketWatch has forecast that enterprise spend on private MPLS networks will continue growing at 6.5% CAGR between 2019 – 2024, with traffic increasing faster than prices fall.[10]

Costly and time-consuming data migration

Moving data from private data centres to, and between, public clouds is both expensive and time-consuming.

MarketWatch reports that 42% of IT executives in organisations that have not completely moved to the public cloud, say they are concerned about the large costs involved in on-premises to public cloud data migration.[13]

It has been calculated that transporting 100TB of data out of a public cloud is likely to cost c£78k per year in cloud egress and inter-region costs (excluding network costs).[14]

Security and compliance risks

As new security and compliance challenges arise, organisations risk falling foul of data sovereignty regulations or data breaches. Over-reliance on centralised data centres makes it impossible to comply with local restrictions on processing data 'out-of-region'.

Increasing numbers of remote users needing to access and share data via the public internet also increase the risks of security breaches.

Collaboration and innovation restrictions

Exchanging data in real-time, at scale, with global networks of partners, suppliers and customers is more difficult if all data is stored centrally. The upshot, or rather downside, is a restriction in businesses' ability to collaborate and innovate.

Disaster recovery difficulties

When data is centralised in a few, large data centres, it becomes increasingly difficult and expensive to ensure effective disaster recovery.

23% CAGR

is the forecast growth in business IP traffic between 2017 and 2022[12]

6.5% CAGR

is the forecast for the continuing growth in enterprise spend on private MPLS networks between 2019 and 2024, with traffic growing faster than prices fall[10]

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c £78k per year

is the likely price in cloud egress and inter-region costs (excluding network costs) calculated for transporting 100TB of data out of a public cloud[14]

THE INTERCONNECTION SOLUTION

SUPPORTING DISTRIBUTED DATA ARCHITECTURES

Enterprises can overcome many of the shortfalls of traditional IT architectures by utilising interconnection hubs to support a distributed data architecture.

Deploying data and data services closer to the digital edge in regional interconnection hubs – such as those offered by Equinix – allows secure and scalable data exchange between customers, partners and clouds in controlled environments. The costs and risks inherent in transferring data over large physical distances are significantly reduced.

With interconnection hubs, organisations can store data at the digital edge, with storage located privately "next to" rather than "in" public clouds. The data's proximity to public cloud services – such as compute and analytics – combined with dedicated fibre connections, provide the lowest latency, best performance and highest level of security possible.

Proximate access to scalable cloud-based analytics and AI systems also helps to streamline and optimise data analyses.

By locating data closer to the people, applications, clouds and things that need to use it, enterprises can solve many of the performance, cost and compliance issues associated with highly centralised architectures.

THE BENEFITS FOR GLOBAL ORGANISATIONS

Improved user experiences

By storing and processing data closer to users, latency is reduced and the experience of users is significantly enhanced. When a Forrester Total Economic Impact survey looked at the benefits derived by organisations using Equinix's interconnection services to support a distributed infrastructure, it found that there was a latency reduction of at least 30%.[15]

Reduced costs

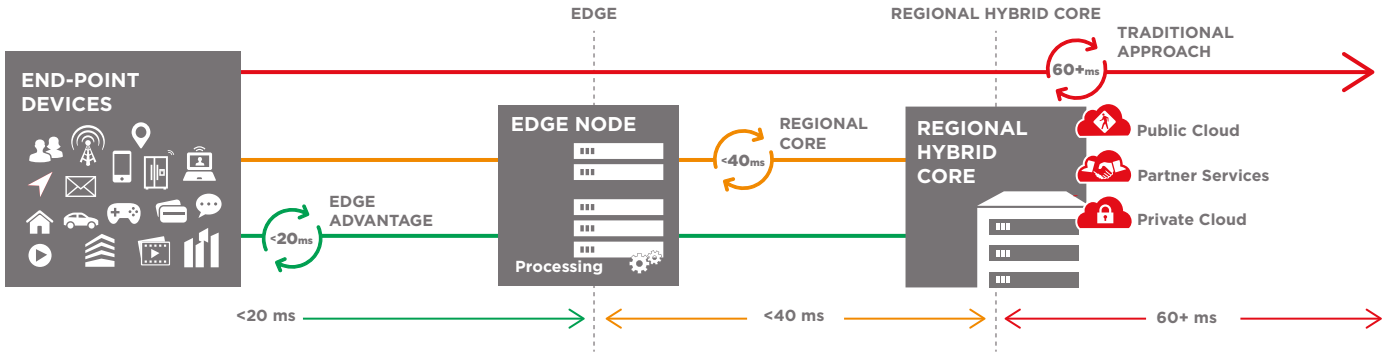
By lessening the volumes of data transiting private networks, transport costs are also cut significantly. According to Forrester, using Equinix's interconnection services typically reduces cloud connectivity costs by 70% and network traffic costs by 60%.[15]

Dramatic performance improvements

PCL Construction, a global construction contracting company, leveraged an interconnection-first strategy on Platform Equinix™ with Microsoft Azure which lowered latency by 29% and improved overall user quality of experience for all of its Azure hosted cloud services.

are the reductions in cloud connectivity and network traffic costs typically achieved by using Equinix's interconnection services, according to Forrester[15]

Latency advantages at the edge



Easier compliance

Each data asset can be stored in a location that is compliant with local data sovereignty regulations, while still being managed as part of an integrated, global architecture.

Less risk

Organisations can more easily manage, monitor and protect their data across a global footprint, with security control points in regional hubs and robust, affordable disaster recovery.

More innovation

Locating data closer to cloud platforms makes it much easier to take advantage of innovative approaches, such as distributed analytics and cloud-based AI systems.

Greater value

With interconnection hubs supporting a distributed data architecture, organisations are better placed to monetise their data assets and use them to drive improved collaboration with partners, customers and suppliers.

Managing exploding data growth

To manage exploding data growth for its thousands of customers, suppliers and partners, Equinix client HAVI – a leading packaging, supply chain and logistics provider for the quick-service restaurant (QSR) industry – scaled its forecasting, data warehousing and disaster recovery (DR) capabilities worldwide with a global solution based on five Equinix data centres. The result was a 30% performance improvement and a five-fold increase in workload.

£20bn

is the expected value of the cloud portion of the global data analytics market by 2023, almost a third of the total market[16]

EQUINIX AND CSI

CSI works closely with Equinix, enabling you to release the full potential of data at the edge.

PLATFORM EQUINIX®: THE WORLD'S LEADING INTERCONNECTION PLATFORM

Used by thousands of enterprises to support their distributed infrastructures, Platform Equinix spans a global network of 200+ International Business Exchange™ (IBX®) data centres across five continents. It enables businesses to store and analyse data closer both to its origin and users. Equinix's global footprint ensures organisations have the flexibility to build a distributed architecture that matches their business profile.

Equinix Cloud Exchange (ECX) Fabric™: the vital enabler of a distributed data architecture

ECX Fabric directly, securely and dynamically connects distributed infrastructure and digital ecosystems globally on Platform Equinix, providing worldwide private data transport between locations that massively simplifies the replication of data across multiple regions. Organisations can establish data centre-to-data centre network connections – on demand – between any two ECX Fabric locations within a metro, or globally via software-defined interconnection.

The world's largest ecosystem

Within Equinix interconnection hubs, organisations can also connect directly to the world's largest ecosystem of cloud and SaaS providers – including many specialist data storage, management and analytics services – via secure, private and high-bandwidth connections.

Equinix is the only data centre provider with private access to all major public cloud platforms, including Microsoft Azure, IBM Cloud, Amazon Web Services and Google Cloud Platform.

Organisations can easily access services from key alliance partners in Equinix data centres, enabling the elasticity of public cloud compute while maintaining complete control of data.

CSI: UNLOCKING THE POWER OF INTERCONNECTION

CSI manages complex workloads, draws value from data and is the first and last line of defence against digital threats. Our goal is to enable our clients to gain a competitive edge, not just for today or tomorrow, but forever. By taking a technology-neutral, outcomes-biased approach, we help organisations to grow, save, innovate and protect.

As an Equinix trusted partner, CSI enables you to unlock the potential of interconnection to power your distributed architecture strategy. We provide the expertise, guidance and value-added services you need to successfully plan, transition to and manage your distributed data architecture - and fully extract the maximum value from your data, through optimised compliance, resilience and recovery.

Managing the complex and constantly shifting landscape of regulation and risk can be a distraction from your core business. Therefore, we leverage the latest automated and virtualised technology to make data protection, cyber security, backup and disaster recovery services intelligent and simple.

To see how we can help your business harness the power of interconnection, please contact us by phone **+44(0)800 1088 301** or email **info@yourperpetualedge.com** today.

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