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How Data Gravity, Digital Transformation and Hybrid IT Will Define 2021

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WE CAN FINALLY SAY IT –
2020 IS OVER.

It was a year defined by a pandemic and how it changed the way we live and conduct business. Yet, you probably feel like it's still hanging around despite what it says on your calendar.

It's because several of the accelerated changes that took place in 2020 are here to stay, including how:

It **altered** the way people work, shop and live.

It **changed** the way customers demand value.

It **forced** companies to adapt quickly or lose business.

We saw the 2019 (or older) way of doing things turn into the 2021 (or later) way in a matter of days. McKinsey actually said by May of 2020 we had, "vaulted five years forward in consumer and business digital adoption in a matter of around eight weeks."[1]

The implications are on a regional and global scale. Here's what it all could mean for your business in 2021.

The Digital Workplace and Digital Transformation Endure in 2021

It's a new year, but the pandemic is still here, and the demands of digital transformation continue to grow. In fact, 80% of organizations indicate digital played an important role in getting through the economic slowdown, and while many hope the pandemic goes away in 2021, the digital workplace isn't going anywhere.[2]

Organizations lacking digital maturity find themselves struggling to keep pace with competitors, and those unable to find their digital footing may be unable to survive.[3]

Organizations planning to address digital transformation over the next few years were forced to take immediate action.

Even before the life-changing pandemic, McKinsey found that the percent of products or services partially or fully digitized went from 35% in December 2019 to 55% in July 2020.

In 2021, Gartner sees the Internet of Behavior consisting of people centricity (people work/interact with a business), location independence (the shift of ecosystems) and resilient delivery (process adaptability).[5]

Over two-thirds of organizations with over 25% organic revenue growth in the last three years say they invested more in digital-related capital expenditures than their peers.[4]

That last component is critical. If the pandemic taught organizations anything – it's the serious risks involved in a lack of agility or adaptability. In their 2021 strategic tech trends, Gartner called "disruption" the hallmark of 2020 and noted that organizations prepared to "pivot and adapt" can weather any kind of disruption. Some of their suggestions include a public/private distributed cloud, anywhere customer support, AI-driven busines automation and flexible cybersecurity controls.

As a global multi-tenant data center platform provider, we bring together connected communities to help customers adapt. As 2020 drew to a close, we announced a partnership with AWS outposts to provide a comprehensive hybrid IT model that addresses challenges associated with IT deployment, data localization, AI development, exchange optimization and Data Gravity on our global platform, PlatformDIGITAL®.[6]

It Will Be Banner Year For Data Gravity

If 2020 was known for disruption, 2021 could very well be known for Data Gravity. Data Gravity describes the process in which data accumulation attracts additional services and applications to the data in the way gravity attracts objects around a planet. Prior to the COVID-19 crisis, data volumes were growing at exponential rates— and the expedited adoption of digital transformation accelerates data growth. Data Gravity was always a component of digital transformation, but 2020 was a game-changer.

Once the pandemic hit, people stayed home and internet use skyrocketed. Business went remote, and meetings went virtual. Starting in 2016, Gartner pointed out that the amount of new corporate and consumer data being generated every day was literally incalculable.[7] Imagine what it is in 2021. Meanwhile, The Data Gravity Index showed Data Gravity intensity growth across 53 global metros by a compound annual growth rate of 139% globally through 2024.[8] IDG indicates data volumes are growing at an average of 63% per month, and by 2025, over 463 exabytes of data will be created each day.[9] That's a rapid amplification in the Data Gravity megatrend. As more applications create more data and more data needs to be exchanged with more applications, the gravitational effect of the data increases in volume, velocity, and scale. Again, think about that on a global scale.

Take the definition of Data Gravity and think about the significant challenges it can create. We're talking everything from inhibited

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enterprise workflow performance and impeded customer experience to expanded security risks and increased costs. Don't forget - these issues are further complicated by regulatory requirements and other artificial constraints.

This is a modern problem with an accelerated paradigm, and current backhaul architectures simply aren't able to solve for Data Gravity. An inverted data-centric architecture deployed at points of presence in neutral, multi-tenant datacenters is needed in 2021.

Edge Computing Fuels the Need for Hybrid IT

Dave McCarthy of IDC expects edge products to power the next wave of digital transformation.[10] Further, he expects the worldwide edge computing market to reach $250.6 billion in 2024 (a CAGR of 12.5% from 2019-2024). So, traditional IT architectures are pushing data beyond cloud services and data centers to the edge—and require dedicated resources closer to end users and devices.

Now let's add Data Gravity to this trend. Gartner predicts that more than 50% of enterprise-generated data will be created and processed outside the core datacenter and cloud.[11] As applications and services move closer to the data, centralized backhaul architectures incur higher costs, complexities and risks.

Hybrid IT is another trend that extends beyond North America. For example, Ireland and the majority of European countries are expecting hybrid IT infrastructure to play a critical economic role in their transforming digital economy.[12]

You can address this through a connected community approach that allows for integration between core, cloud and edge at centers of data exchange. This can only be implemented with a secure, data-centric hybrid IT architecture deployed in multi-tenant data centers.

Enterprise Data Stewardship Forces Re-Evaluation of Architectures

There is a growing consolidation of data with 80% of data worldwide residing in enterprises by 2025.[14] For the first quarter of 2020, Gartner saw a 90.2% increase in year-over-year enterprise petabytes delivered—which is predicted to grow at a greater than 35% rate per year over the next two years.[15] That's a data creation rate of 1.1 million gigabytes per second, or 15,635 exabytes of additional storage annually.[16]

Connected devices at the edge are predicted to generate more than 79 zettabytes of data by 2025—5x higher than the amount generated last year.[13]

According to the *McKinsey Global Institute,* four integration strategies for M&A activities are critical:
1) improving talent-management strategies,
2) accelerating time to impact for revenue and cost synergies,
3) developing predictive capabilities, and
4) increasing asset effectiveness.[21]

As enterprises assume more data stewardship in 2021, this requires them to rethink their legacy backhaul architectures. The costs of storing the same data across multiple points of presence grows dramatically as Data Gravity increases.

It also becomes increasingly difficult to demonstrate compliance with various regulations such as the EU's General Data Protection Regulation (GDPR), Payment Card Industry (PCI) standards, and other requirements. If you're already combatting other challenges of accelerated digital transformation, you can't afford compliance failures. It could cost millions of dollars in fines and penalties.[17]

You must also ensure data is protected from cyberattacks across networks, clouds, devices, users, and internet of things. Cybercrime is definitely not slowing down during or after the pandemic. McKinsey suggests taking steps to develop digital technology and regulation based data program.[18] They say to build that with a focus on risk mitigation, company vision, company culture, and cross functional teams. Costs and security are two of the core reasons enterprises are evolving into Hybrid IT strategies. Before the pandemic, the time to move from legacy to cloud had passed. So, if you're making the leap from Legacy to Hybrid IT, you're making a gigantic leap forward in your ability to address the modern challenges of digital transformation.

The Mergers and Acquisitions Rebound
Globalization is driving corporate mergers and acquisitions (M&A) to achieve scale, and they slowed during the heart of the pandemic. However, they are predicted to return to a pre-COVID-19 normal in 2021.[19] M&A activities increase the number of data sources in enterprise data exchanges and increase data volumes. This level of growth magnifies Data Gravity—making it difficult to fully access, process and analyze data intelligence.

This is why organizations struggle to capitalize on M&A activities. Research shows that only 8% of enterprises use advanced analytics to unlock the value of data they gain from M&A activities.[20] Without advanced analytics, it takes enterprises longer to achieve time-to-value for customers and increase sales.

Digitally-Enabled Interactions Become the Industry Standard
Customer, partner and employee interactions were quickly moving into digital channels before the pandemic. This trend dramatically accelerated in 2020, and there will be no turning back in 2021. A

2020 survey conducted by McKinsey found that B2B companies saw digital interactions with customers as two to three times more important than face-to-face interactions.[22] With a high demand in digitally-enabled interactions, we will also see an increase in enterprise data exchange volumes globally. The same is true for B2C interactions. Forrester predicts digital customer service interactions will increase by 40% in 2021.[23] IDC research says enterprises with intelligent and collaborative work environments will see 30% lower staff turnover, 30% higher productivity and 30% higher revenue per employee than peers that struggle to facilitate digitally enabled interactions.[24]

Add digitally-generated data from Internet of Things (IoT), artificial intelligence and social media to the mix, and the resulting data explosion is dramatic. As these digital data generators scatter across the datacenter, cloud deployments, network, and users, Data Gravity is an immense and growing challenge for enterprises.[25]

It is more than the cost of storing data. You need real-time intelligence to power innovation and response to market opportunities. However, this is difficult—if not impossible—to achieve with legacy backhaul architectures. You cannot shrink the distance between data sets that need to be analyzed by advanced AI for business decisions.

Studies reveal that enterprises must collect and act on customer insights in real time to capitalize on customer data for revenue opportunities. However, fewer than 30% of companies are able to do so today.[26]

A Shift to Data Localization

Think about how digital trade flows play a critical role in global trade and commerce today. There's GDPR and data localization requirements, but the reality is that data localization extends far beyond the EU. Plus, cybersecurity laws from China and other countries have far-reaching ramifications for enterprises conducting business in their countries. To ensure compliance, nearly 9 out of 10 IT leaders indicate they will have policies that maintain local copies of customer and transaction data by 2022.[27]

However, the reality is that the shift to data localization is already underway. A study conducted in 2020, found that 30% of enterprises responded to GDPR by moving the location of their data storage to inside the EU.[28] Meanwhile, 28% shifted data storage and processes in response to Chinese government regulations within China. This move is still underway with 56% of organizations indicating they have not considered or made final decisions in response to new Chinese laws.

The multiplication of locations and copies compounds the Data Gravity effect. It also increases the cost of storage while intensifying the complexity of managing and analyzing data. Older predictions

about data localization raising the cost of hosting data by 30% to 60% still ring true today.[29]

A Need for Cyber-Physical Security

Did I mention cybersecurity is a 2021 challenge? Better yet – did I mention it's a bigger issue thanks to the pandemic's acceleration of digital transformation? If you know that, so do today's cybercriminals. Whether it's regionally or globally, new cybersecurity threats are everyone's problem.

In the past, cyber and physical security were separate and treated as separate systems by organizations. Now, digital transformation forces physical security to rely more on data than ever before. Further, cyber-physical security underpins connected IT, operational technology (OT) and IoT environments where security involves both cyber-physical elements.

Data Gravity, which includes data storage and exchange between these different systems, significantly increases risk for enterprises. Bad actors recognize the expanded attack surface—which includes OT with subpar security controls.[30] One of the reasons many businesses are turning to a Hybrid IT model is the flexibility it gives them to address change, and that includes the variation in cyberthreats.

Cyber-physical security poses enough risk for Gartner to predict that three-quarters of CEOs will be personally liable for cyber-physical security incidents by 2024.[31] The result? Organizational costs that include compensation, litigation, insurance, regulatory fines and reputation loss.

> Gartner predicts that 70% of security products will integrate IT-OT-IoT systems by 2023.[32]

Measuring Data Gravity and Advancing Hybrid IT

Within the numerous factors inhibiting transformation, they all point to Data Gravity as the biggest challenge, and Hybrid IT as a go-to solution. However, digital transformation presents enterprises not only challenges, but immense opportunities.

To understand the dynamics of Data Gravity across industries and regions, visit the Data Gravity Insights Hub.[33]

You can also learn more about transforming into a hybrid IT infra-structure by building centers of data exchange with AWS Outposts.[34]

We'll continue to update you on regional trend blogs like the one below:

Top 5 predictions which will impact Enterprises in 2021

Resources

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[28] ITIF, *Surveying the Damage: Why We Must Accurately Measure Cross-Border Data Flows and Digital Trade Barriers*, January 2020

[29] American Action Forum, *Impact of Data Localization Requirements on Commerce and Innovation*, June 2020

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