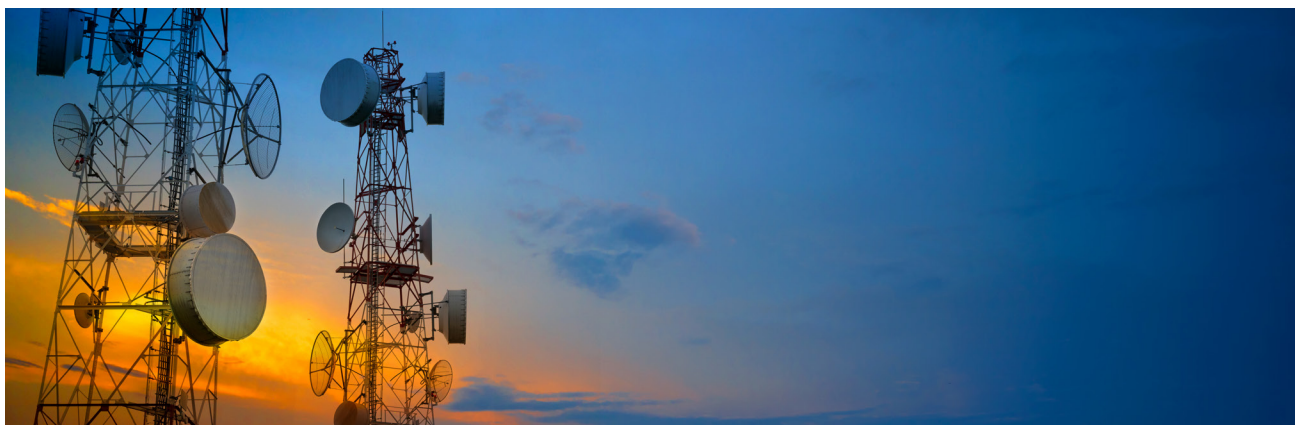# BEING DATA DRIVEN IN THE TELECOMMUNICATIONS INDUSTRY—IT DECISION MAKERS' VIEW IN APAC

Introduction

The telecommunications (telco) industry has influence over much of our lives—especially since the start of the pandemic. The accelerated digital transformation and changed consumer behavior has made reliability and resilience primary considerations when selecting a communications provider. With the rollout of 5G and virtualized network infrastructure, the telco industry is adding robust enterprise networking offerings to the virtual portfolio.

For the average consumer, connectivity too has become so critical that any hiccups in service levels become non-negotiable. Faced with the ever-increasing volumes of data, the future leaders of the telco industry will undoubtedly be organizations which can cohesively pull all of these workloads and data together in a unified data cloud architecture.

This executive summary takes a deeper analysis of the telco industry based on insights from our 2021 "Cloudera Enterprise Data Maturity Report: Identifying the Business Impact of an Enterprise Data Strategy".

The key takeaways from the research are as such:

- **Customer-centricity** is at the top of telco's data agenda.

- The telco industry reported a large variety of **innovative analytical methods** and tools used.

- Organizations are adopting **enterprise data strategies**, and report areas of much needed improvements to optimize their data.

- Organizations that leverage **Enterprise Data Cloud capabilities** create opportunities for new business frontiers in a hybrid world.

Priorities when managing data in the telco industry—customer centricity is key

Smartphones, tablets and laptops have greatly increased the amount of data generated on telecom operators' networks. This massive volume makes the telco industry one of the largest data aggregators in the world. In this post-pandemic landscape, using data is crucial to establishing and maintaining a competitive advantage.

Data analytics can help an organization understand and optimize the customer experience while aiding with service assurance. By employing advanced analytics and machine learning (ML) across the infrastructure, organizations have a clear view of repeating patterns and can effectively apply predictive maintenance. Applying machine learning and artificial intelligence also allows organizations to identify network problems before customers notice them and can detect fraud patterns and real-time threats before the business is affected.

It, therefore, comes as no surprise that customer centricity is key for the telco industry—with customer and prospect data (70%), customer sentiment data (61%), and supply chain data (56%) being the most used data sources. 25% of organizations are currently using all three of these data sources simultaneously.

While the data provided by changing customer behavior is becoming increasingly complex, new opportunities to meet customer needs emerge. This is particularly important across the telco industry, to give organizations a unified view of their customer data across the business and within departments. This is further reiterated by those that use data and analytics to improve the customer experience and satisfaction (63%)—engaging in customer centric data sources will pave the way for organizations to be able to improve the overall experience.

Apart from the customer experience, security and governance is also a priority for telco organizations when it comes to managing the data lifecycle. Surveyed telco organizations demonstrate engaging with several stages across the data lifecycle process. Data collection (75%), security and governance (69%), as well as predictive analytics (63%) are the main areas utilized in this context. Data digestion and monitoring at the Edge is of course essential with the sheer volume of data these organizations will be expected to manage on a frequent basis.

It's also critical to protect such data, with an integrated set of security, management and governance technologies across the entire data lifecycle—especially when considering privacy concerns when moving workloads and data sets beyond the firewall and/or out of the country from which they're hosted. The transfer of Personally Identifiable Information (PII), and data from enterprise end-customers relating to network services can result in detrimental impacts if compromised, and organizations should strive to manage data and its security with confidence. It's positive then, that almost four in ten (38%) IT decision makers (ITDMs) in the telco industry have completely achieved having the necessary enterprise-grade standards in place for security, back-up, and disaster recovery across all environments.

Innovative analytical tools and methods are a priority when it comes to data management

The telco industry reported a large variety of innovative analytical methods and tools used, such as data science (69%), Internet of Things (IoT) and Edge device management (60%), and business intelligence (60%). With the rapid rise of technologies such as smartwatches, fitness trackers and mobile devices, telco companies are flooded with masses of data every day. Telco organizations are leveraging the broad-based integrated data that they have access to, to train highly accurate AI models. These are executing across the business, from predictive maintenance and intelligent anomaly detection on the network, to preemptive customer support and lifetime value optimization.

Telco organizations are adopting these innovative analytical methods and tools for the following reasons:

- **To support cloud migration and strategy.** ITDM respondents across the industry report that, on average, more than two fifths (41%) of their IT departments' time and resource is dedicated to cloud migration and strategy. Innovative analytical methods and tools will aid the process in doing so, with accuracy, and at speed.

- **To enhance delivery of real-time business insights.** The majority (88%) of telco organizations report the valuable nature behind delivering real-time business insights through technologies such as AI – which we're already seeing in terms of analytical tools and methods currently used. When considering the next generation of mobile connectivity for example, the need to process data quickly makes a lot of sense. With the move to new 5G networks and plans to evolve through digital transformation, telco organizations need accurate oversight of their data.

- **To support self-serve reporting analytics such as AI.** Organizations' progression towards the monetization of data is reflected by their current abilities to support self-serve reporting analytics. More than four in ten (41%) ITDMs report that they have completely achieved providing all relevant business groups with access to centralized analytics tools and support suited for their own analysis and reporting needs.

[1] - https://blog.cloudera.com/telecommunications-and-the-hybrid-data-cloud/

The critical nature of effective enterprise data strategies in the telco industry

The majority (87%) of ITDMs across the telco industry report currently having enterprise data strategies in place. Telco businesses want to do more with their data and having enterprise data strategies in place pushes them one step further towards having good quality data at their fingertips.

More than half (56%) of ITDMs recognize their current enterprise data strategies as very effective, with the remaining proportion of surveyed respondents in the telco industry reporting improvements to be made. Telcos are among the largest aggregators of data, and this will only grow as 5G-powered applications will lead to an influx of data from the network and connected devices.

Being able to use this data effectively to generate insights is important as data sources are many and varied, and often spread across multiple environments. Data can come from the network itself to its management systems, through Business Support Systems (BSS) including billing and care, to marketing automation environments that combine multiple cloud services and applications with interfaces, to product catalogue and campaign management solutions. These are in turn distributed across on-premise, private and public clouds, some visible at an infrastructure level to the enterprise architect and some buried in an Original Equipment Manufacturer (OEM).

Most (93%) telco organizations report a realm of challenges when it comes to their current enterprise data strategies, demonstrating a notable need to improve in order to get the most out of such strategies.

Challenges with enterprise data strategies:

- **The high cost of management solutions** is a key challenge, and as such, without having the ability to fund these solutions, businesses will be lagging in terms of optimizing data management. This, paired with growing data volumes many within the industry are experiencing, creates a snowball of further challenges.

- **Lack of effective processes and systems in place.** With growing data volumes (36%), and the inability to invest in solutions to manage this, comes a lack of effective processes and systems (39%), as well as existing infrastructure (38%), and poorer quality of data (25%). It goes without saying that organizations that currently experience these challenges will not be getting the most out of their data to improve the customer experience. These numbers also highlight the importance of data governance, where an established system comprising people, processes and technology ensures the proper and consistent handling of data across the organization.

- **Growing data volumes.** Six in ten (60%) ITDMs within the industry also report that their organizations are not coping extremely well with the volumes of data they're expected to manage – further evidence of where pinch points are currently experienced. This in turn has a knock-on effect on other coping abilities with data.

Similar trends are seen when assessing organizations' ability to cope with the frequency of incoming data (61%), the variety (52%), trustworthiness (48%), and most importantly, the ability to use data to inform business critical decisions (65%). The telco industry is required to make business critical decisions daily and are responsible for rolling out the likes of the next generation of networks and mobile technologies. Without being able to cope with the data they're faced with, it's virtually impossible to make the best, informed decisions moving forward.

Organizations that leverage Enterprise Data Cloud management capabilities create opportunity for new business frontiers in a hybrid world

The way that data, infrastructure and work is to be managed in the future will be hybrid. Organizations are planning to move towards hybrid multi-cloud to better manage data and support its workforce in the near future—with anticipated hybrid multi cloud use being more than six times the amount than it is currently.

This gives organizations the agility that they desire, particularly when thinking about the need to process data quickly and efficiently across a number of different environments. To achieve these outcomes with their data, businesses are increasingly moving their workloads to the cloud. Cloud enables better integration across business operations and supports an agile business intelligence model—something that's important across the industry when thinking about multi-access edge computing for example. This is essential in the interests of improving risk management, gaining quick customer insights and seeking opportunities ahead of competitors

Almost half (49%) of ITDMs surveyed across this industry have reported an increase in spend across supporting changing work environments (e.g., hybrid working). There has also been an increased spend since the start of the pandemic in supporting digital transformation initiatives (48%) such as hybrid multi-cloud architecture, and data and analytics solutions.

The hybrid future outlines the need for a hybrid, multi-cloud data architecture (known as Enterprise Data Cloud). Furthermore, nearly all (92%) ITDMs agree that organizations that implement a hybrid architecture as part of its data strategy will gain a competitive advantage.

Supported by a set of integrated capabilities, an Enterprise Data Cloud is able to help organizations navigate in the heterogeneous landscape. However, there are a number of areas in which telco organizations could be doing more to get the most of this:

- **Leveraging solutions optimized for speed and access.** ITDMs report gaps here across on-premise and public/private cloud infrastructure – a capability which is essential in terms of being able to combine, manage and transfer data for business insights.

- **Refining new business models.** Organizations could also be doing more to routinely and formally evaluate and optimize processes to refine new business models that emerge from data and analytics; an area with room for improvement. Just being able to recognize at least one new revenue stream or business model from data and analytics could see telco organizations boost their position in a highly competitive market.

- **Assurances of heightened security.** Respondents highlight areas to improve in terms of having peace of mind when it comes to security, back-up and disaster recovery if and when it is needed. As previously uncovered, this capability is particularly important in the context of the telco industry and the PII and data. 82% of ITDMs agree that having secure, centralized governance and compliance over the entire data lifecycle is highly valuable when handling and managing data.

Organizations' current capabilities in relation to the Enterprise Data Cloud:

ITDMs in the telco industry (APAC) [104]	Completely achieved	Not completely achieved
Leveraging solutions optimized for speed and access across on-premise and public/private cloud infrastructure.	33%	67%
All relevant business groups have access to centralized analytics tools and support ideally suited for the needs of their own analysis and reporting.	41%	59%
We routinely and formally evaluate and optimize our process to refine new business models that emerge from data and analytics.	36%	64%
Having big data infrastructure that is centralized and tightly integrated across the organization, allowing business divisions/departments to align priorities with the organization's data roadmap.	39%	61%
Having the necessary enterprise-grade standards in place for security, back-up, and disaster recovery across all environments.	38%	63%

Figure one: To what extent has your organization achieved the following capabilities? [Base size in table], "Not completely achieved" is based on the sum of "Mostly achieved", "Somewhat achieved" and "Not in place", showing APAC telco scores for ITDMs, omitting some answer options

Although there's a glimmer of optimism in terms of organizations' current capabilities, there's an evident need to improve in order to get the most out of their data. Organizations that recognize these areas and strive to address them will see notable and positive differences in how their data is managed and utilized to inform business critical decisions.

Methodology

This report specifically focuses on the analysis of the telco (telecommunications) industry in APAC which consisted of 104 ITDMs. Respondents were from organizations with 1,000 or more employees across both public and private sectors in Singapore, Australia, South Korea, Indonesia, India, China, and Japan.

All interviews were conducted using a rigorous multi-level screening process to ensure that only suitable candidates were given the opportunity to participate.

Conclusion

The telco industry engages with data and analytics, putting the customer at the center. In doing so, they're able to progress to product and service development, the monetization of data, adoption of new technologies and networks such as 5G, and aid digital transformation efforts.

With this, comes a realm of challenges and areas where notable improvements can be made to best optimize their data, thus abilities to drive effective business critical decisions. Improving the effectiveness of enterprise data strategies is a good place to start and ensures that organizations aren't limiting potential. Telco organizations that embrace transformation fueled by data will develop agility and competitive advantage to excel in the future.

About Cloudera

At Cloudera, we believe that data can make what is impossible today, possible tomorrow. We empower people to transform complex data into clear and actionable insights. Cloudera delivers an enterprise data cloud for any data, anywhere, from the Edge to AI. Powered by the relentless innovation of the open source community, Cloudera advances digital transformation for the world's largest enterprises.

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