Business Service Insights

Digital operations
perspective

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everaging data and making sense of it is nothing new to telcos. But as telcos focus on harnessing technology towards providing better customer experience, more bandwidth and faster connectivity, digital operations will have to be contend with and harness the multi-fold expansion in data volume as more customers embrace smartphones, consume streaming data and as overall data consumption from apps and devices continues to grow steadily on a Y-o-Y basis. The abundant availability of data is already enabling organizations to improve network utilization, accelerate the efficiency of operations and enhance customer experience through real-time alerts and notifications & autonomic trouble ticket handling.

However, there are many challenges in effectively leveraging the massive volume of data, finding the optimal data analytics capabilities to turn data into actionable and/or monetizable insights while also coping with the rapidly changing and evolving landscape of big data technologies.
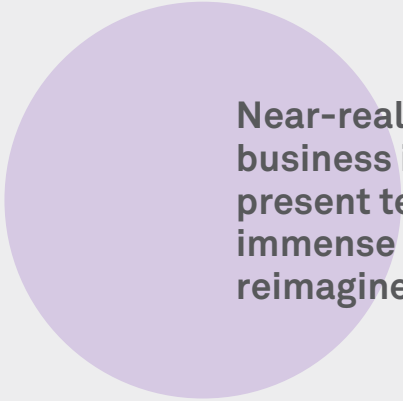
Digitalization in Telecom

Digitalization is the most powerful driver of change in recent times and will continue to set the pace of the industries for the next decade. As digitalization brings change across all aspects of business and across all industries, it is imperative that we think differently, so that we can leapfrog into the next generation of innovation while still exploring those incremental improvements.

The Telecom industry is witnessing the same dimensions of changes like any other industry; however, it is more accentuated by the run up to 5G, even though we are in early stages of the same. Most operators are focusing on improving the way they engage their customers as well as their partners. Omni-channel, self-service and personalization are evolving and maturing hand-in-hand with the digital marketplace. Operators are increasingly realizing that the next wave of value from automation can only be achieved by building capabilities in near

real-time analytics that can derive actionable insights for rapid feedback and intervention across customer engagement, application, network and infrastructure operations.

Digital operations are expected to be more autonomic, dynamic, and near real-time thereby ushering in efficiencies far beyond what the traditional processes have achieved today. By 2020, Gartner predicts that information will be used to reinvent, digitalize or eliminate 80% of business processes and products from the last decade*. We will witness more and more of the human-defined processes being reshaped for machine-to-machine transactions, delivering radically more valuable outcomes with greatly improved productivity.

Near-real time availability of business insights would present telcos with an immense opportunity to reimagine their operations

Digital Operations

There is an increasing realization that enhancing operations with AI is essential for the Telecom industry to become capable of tapping into various new revenue streams that are bound to be discovered as the global economy embraces 5G. AI would play a foundational role in ensuring that the industry is capable of taking up this mandate with fundamental interventions such as the classification of traffic, anomaly detection and network optimization and utilization. Apart from this, the industry will need AI to address aspects such as:

• Complex decisions based on detecting a large number of hidden or hierarchical influencers

• Self-learning

• Self-healing

• Self-configuring

• Autonomous decision-making

• Real-time scaling

However, one of the critical blind spots that telcos tend to overlook is how to leverage their current investments in MIS and data warehouses to usher in and/or accelerate their maturity in digital operations.

Telcos tend to view MIS as a capability that is required only for the CFO and CMO stakeholders and that is yet to actively connect to digital operations, such that the huge amount of data can be tapped.

The investments needed to enable near-real time availability of business insights to proactively address operations can be a dampener in the near term. However, they present telcos with immense opportunities to drastically reimagine their operations as an automation-centric organization.

The roadmap to maturing digital operations capabilities of the enterprise lies in the convergence of traditional automation related to remediation, near real-time analytics and cognitive insights from AI-ops solutions.

To address the challenges and uncertainties in the digital era, telcos should focus on this convergence and their digital strategy should be an optimal interplay between business processes and operations digitalization to achieve superior efficiency.

As we embrace 5G, intelligent automation (which is the convergence of traditional automation related to remediation, near real-time analytics and cognitive insights from AI-ops solutions) will be one of the key drivers of digital transformation, which will fundamentally bring convergence of automation and Artificial Intelligence to improve customer experience.

Digital Operations Use-case Pattern

Digital operations use cases can be categorized broadly into the patterns as stated below. The use case patterns are gaining more importance when it comes to exploring and maturing ideas and business needs and expectations to bridge the gap between business and system models. The fundamental challenge is to describe system interactions with users without introducing architectural bias.
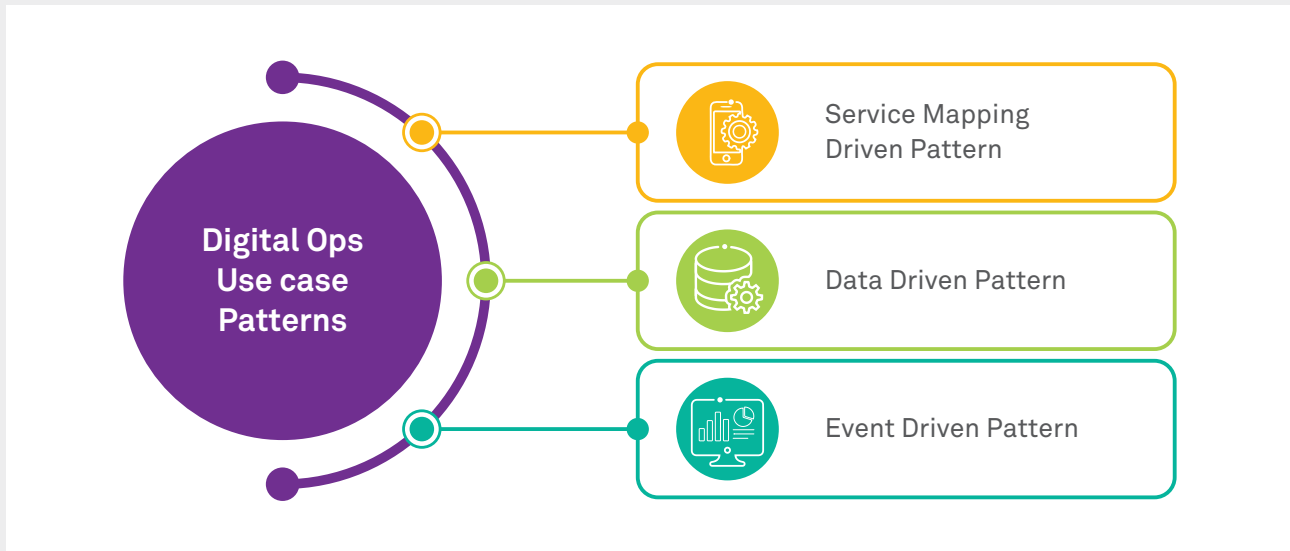

Figure 1: Use case Patterns

Service Mapping-driven Pattern

Service mapping uses patterns to discover and map CIs (Configuration Items). A pattern is a sequence of operations whose purpose is to establish attributes of a CI and its outbound connections. Service mapping pattern consists of two types of algorithms for:

i)   Identifying CIs

ii)   Finding CI connections

The discovery and mapping process begins from discovery performing the horizontal discovery to identifying the host. Once the host discovery is complete, service mapping starts the top-down discovery to find and map applications running on the hosts.

Mapping of IT and business components will help in providing the business and operations support team with potential impacts to businesses and services due to any event/anomaly, for example, during an anomaly in any element, it is easy to identify the impact on the corresponding business process based on the CI mapping and the revenue impact due to business process failure based on the previous data.

Data-driven Pattern

For data-driven operations to be effective, we need a broad range of key performance indicators for services, networks and customers specifically. Active probing solutions are the best way to derive end-to-end service KPIs while passive methods such as SNMP polling are good for getting equipment and network KPIs. Derived KPI metrics provide good insight into the customer's experience.

It is possible to combine and mine the data that measures the performance, throughput, contention, utilization and error rate across the landscape and get the insights.

There are two important points. First, providers need to move beyond the descriptive, just analyzing what happened in the past - to

predictive and prescriptive insights, helping their customers anticipate what will or might happen in the future, and helping them decide what actions they should take to keep themselves on the high-performance path. Second, the use of both internal and external data provides richer context and content for the analytics service.

Event-driven Pattern

Events are anomalies. Events can come from a variety of sources. Every element of the stack is capable of sending events. Event management system correlates the events to get the insights and visualize service health, prevent outages and create actionable alerts to reduce outages and improve time taken for analysis. For example, if any element is down, there is the possibility of having multiple events generated in a period, due to which there would be the possibility of more noise generation due to a single anomaly, correlation of the events, and creating a master event will reduce the noise and the master event can be used for further analysis.

Summary

Digital operations management brings together machine learning, automation and DevOps-centric workflows. It collects signals from the available sources, applies advanced analytics, machine learning and end-to end incident lifecycle automation to resolve and prevent disruptions faster. Similar disruptions

can be seen in other sectors like banking, retail etc. It has the capability to transform any signal into real-time insight and precise action. Most importantly, digitalization gives rise to new business models where the new digital assets such as data from relations and operations forms a new base of innovation and partnerships.

The key capability of digital operations is analytics as use of advanced analytics techniques helps to move the business from a reactive state to a proactive state. Hence, the service providers need to focus on predictive and prescriptive insights helping their customers anticipate what might happen in the future and help them decide in planning their actions. Use of both internal/external data and the use case patterns will provide a richer context for the analytic services.

References:

*https://www.forbes.com/sites/gartnergroup/2015/02/12/gartner-predicts-three-big-data-trends-for-business-intelligence/#d8ca3176de4f

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