Augmented Analytics: Extending AI Across the Telecom Enterprise

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Telecommunications has long been an industry that powers many others by providing continuous communication, connectivity, and data flows that are vital to sustain all kinds of operations.

But in a landscape flourishing with digital innovation, communications itself has taken on new flavors. Hyperscalers are driving alternative communication options like WhatsApp and Facebook Messenger that piggyback on networks, eating into marketshare. Operators may soon find themselves nudged out of the game if they do not differentiate.

The promise of artificial intelligence (AI) lies in exactly this: rapid differentiation through cost optimization, service agility, and new business models, which are table stakes for any telecom enterprise aiming to succeed in today's digital, competitive, and disruptive marketplace.

The promise of AI

One cannot argue the significance of AI.

According to Gartner, by 2024 75 percent of enterprises will shift from piloting to operationalizing AI, driving a fivefold increase in streaming data and analytics infrastructures.

Those that have tested the waters are aware of how AI helps make better decisions, improve profitability, and increase operational efficiency. Think proactive customer service, timely fraud

management, holistic business assurance, optimized network quality, better asset management, and 360-degree partner management, to name a few use cases for AI.

Nonetheless, operators are cautious and wary—possibly due to high initial costs. Yet, cost is the underlying marker because the entire telecom industry continues to play on managing margins. To boost profitability, organizations must make decisions faster and respond effectively to market changes. Like a virtuous circle, though, better decision-making requires accurate insights, which in turn require ready access to the right data.

In earlier years, business intelligence tools provided some edge. In a post-pandemic world, though, responsiveness and resilience are what differentiate those who survive from those who don't. To become agile and responsive, organizations must first democratize access to data and leverage AI in a cross-functional manner.

Going beyond building to scaling AI

According to a study by the [McKinsey Global Institute](#), the high-tech and telecom industry is more likely to report AI adoption. The study also states that more respondents are reporting revenue increases thanks to AI.

AI drives a fundamental internal shift, enabling telcos to stave off CAPEX-heavy investments while delivering ongoing value that translates to direct, tangible benefits.

By nature, AI is pervasive. It extends its capabilities across telecom enterprises delivering supreme efficiency, smarter insights, continuous improvements, and new business opportunities. The underlying success levers are CAPEX minimization, revenue maximization, and network optimization.

From a revenue perspective, AI can drive customer experience analytics, provide personalized recommendations, and improve campaign management. From a network perspective, it can spot anomalies based on usage patterns, allowing communication service providers to remedy disruption through timely maintenance or asset reharvesting. From a CAPEX point of view, AI models can help operators tap into lucrative business opportunities that leverage existing investments.

Why more operators aren't using enterprise AI

While many are eager to reap the promises of AI, implementation remains a hurdle. AI is inherently complex. Holistic deployment, while certainly an enterprise goal, is hamstrung by restrictions, including operational, internal, and ingrained manual processes.

Looking at some of the barriers to adoption, a few pertinent ones emerge. AI encompasses numerous machine learning, deep learning, and computer vision models. How would business

users know which model to choose for their specific business problem? Being esoteric, AI models call for niche skillsets. For instance, data preparation itself mandates knowledge of activities like exploratory data analysis, data transformation, missing value treatment, normalization, encoding, and more. Yet a dearth of talent persists. Availability of data scientists and data engineers is sparse, influenced heavily by cost and expertise. Further, manual data science processes impact productivity. According to a 2020 report from [Anaconda](#), nearly 45 percent of a data scientist's time is spent simply on getting the data ready for models and visualizations.

Building user trust is another primary concern. Internal users are often blind to the inner workings of black box models. Due to inherent model complexity, business teams do not understand the underlying logic or how the algorithm arrives at the final result. For many teams, this knowledge is important particularly when the result is a recommended decision. Increasingly, companies want their AI models to be transparent, explainable, and accountable. According to *Forbes*, explainable AI is about understanding how models come up with certain results. It is also about understanding how decisions are made by models and how models correct their own errors. Without some manner of "explainability," the propensity for change is rigid and adoption idles.

Models should be accurate if they are to gain user trust. A subsequent issue to watch out for is model bias. Say a telecom operator has built an AI model for credit lending, which predicts that men should have a higher credit line than women. This represents a model bias that must be identified and addressed quickly. Fixing these issues involves a lot of experimentation, each round of which takes time. Moreover, nearly 50 percent of initial experiments fail, calling for readjustments to the model.

The key here is to fail fast and move iteratively—and rapidly—to the next prototype. Ironically, to experiment and fail fast, organizations should also be able to accelerate how they choose, build, deploy, and test models.

Without a single, comprehensive, proven platform to perform the above activities, telecom enterprises end up banking on disparate systems even when implementing AI, which poses integration challenges and compromises the user experience.

The power of self-serve augmented analytics models

Telecom enterprises need AI platforms that help them do all the above in a simple, user-friendly, and automated manner. This is where self-serve augmented analytics platforms emerge as clear winners. Augmented analytics platforms help operators experiment fast using a no-code set-up that offers self-service capabilities in a single, one-stop solution.

Accuracy through iterative experimentation

Data scientists spend significant time engaging in what is known as "last mile optimization," a term borrowed from the logistics industry. Much like its namesake, it helps ensure that the model delivers the expected results. Augmented analytics support Auto-ML based on actual findings so

models can be corrected to deliver accurate results. Here too, the process is iterative and automated. The Auto-CASH (Combined Algorithm Selection and Hyperparameter Optimization) module helps select the best model and the best set of hyperparameters to optimize the chosen evaluation metrics (including accuracy, precision, F1 score, lift, and so on).

End-to-end automation

Everything from cleansing data to deploying the model is automated. This includes data preparation, tuning the hyperparameters, selecting the best-fit model, deploying it into production, and monitoring its performance. Augmented analytics provides a governing framework to execute these steps and to ensure transparency across the entire lifecycle. The efficiency gains here are significant.

Explainable and ethical AI

Augmented analytics helps users interpret black box models, so they can understand the logic behind predictions. It does this across three levels: global, regional, and local explainability. It also provides mechanisms for machine learning de-biasing, so that business users can trust the model's outcomes. This is imperative when the model's results govern actions or recommendations related to fraud, customer service, business assurance, revenue leakage, and so on. A robust augmented analytics platform also helps monitor key evaluation and performance metrics like precision, recall, feature drift, model drift, and more.

The business advantages

Intelligent automation of all data management tasks greatly improves efficiency and productivity of existing data scientists. But the greatest value driver is that augmented analytics platforms empower business users to become citizen data scientists. They can easily leverage AI to solve business problems without having to depend on exhaustive training and domain knowledge.

The benefits are clearly quantifiable.

[Companies that adopt augmented analytics report](#) a 50 percent increase in analytics efficiency and decision-making confidence. Automated feature synthesis helps data scientists roll out more accurate models, iteratively, quickly, and without user bias. Data processes run up to 100 times faster, accelerating time to insights. A bonus with augmented analytics is crisp visualization of insights and patterns. Conversational analytics makes it even easier for business users to consume these insights.

Efficiency gains are great, but because ROI is one of the key drivers of adoption, how does augmented analytics help with revenue? For one, telecom operators can expect operational profitability to increase by 23 percent. Employees become more productive, and retention increases by 31 percent as does the newfound scope for value-adding tasks. This includes nurturing citizen data scientists who can then build AI models for other functions, amplifying

value and ROI across the enterprise. Some companies report increasing their citizen data scientist pool by nearly five times thanks to augmented analytics platforms. On the front end, customers enjoying increased personalization, faster issue resolution, and network quality (among other benefits) report greater satisfaction. Some adopters report 35 percent year-on-year increase in customer acquisition.

Final thoughts

Telecom is evolving, reorienting business models to match the pace of change. Augmented analytics platforms can help players accelerate the data-to-decision lifecycle, giving them a sharper edge. They also minimize costs and maximize revenue by optimizing existing processes and unearthing new business opportunities.

Expectations from AI are soaring; augmented analytics is the crucial differentiator that will separate those who win big through AI investments and those who lag.