



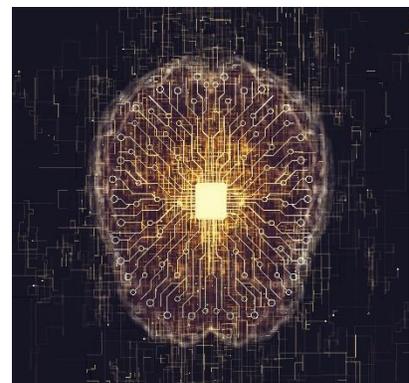
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AI-Driven Personalization: the Key for 5G Revenue

By: [Martin Laesch](#)

In 2017, the Economist [stated](#) that the world's most valuable resource is no longer oil, but data. Four years later, this concept is only increasing in truth. Thanks to the revolutionary promises of 5G, artificial intelligence (AI) and machine learning (ML) possibilities are transforming the value of the data collected on consumers and our habits every single day. With 5G usage predicted to explode in coming years with over [1 billion 5G connections](#) by 2023, the possibilities of AI and ML solutions are seemingly becoming limitless.



An unprecedented amount of data

Gone are the days when your mobile phone or laptop are the only devices collecting your data. Thanks to an explosion of connected markets and IoT applications, everything from smart watches to smart fridges can collect valuable data based on our habits, preferences and routines. We are also choosing to do more online, from shopping to socializing, meaning that we are willingly digitalizing more aspects of our personalities and tastes than ever before. Browsing in a store is no longer picking up a product off a shelf, but clicking and scrolling, which can be recorded, stored, and analyzed.

On top of the existing shift to digitalization, the COVID-19 pandemic has ramped up the change to new speeds. Despite the fact that consumer spending fell over the course of the pandemic, [surveys](#) show that online purchases have increased by six to ten percentage points across most product categories. Respondents said they would continue shopping online and focusing on essential products in the future.

But the digitalization of commercial services doesn't end with online shopping. Physical, in-store experiences are using digital transformation methods, enabled by 5G, to entice customers, increase sales and reduce losses. Virtual and augmented reality has been made viable for commercial use by the high speed and low latency of 5G Internet. From seeing furniture placed in your own home, to trying out new hair colors and makeup styles before you part with your money, virtual reality is not only going to add a novelty element for shoppers but will also help them make informed decisions about their purchases—providing valuable data as they do so. When online shoppers currently return up to 40 percent of purchases, these tactics not only collect stacks of data from in-person shopping, but also reduce the number of costly returns made by customers, increasing profit for the business.

AI and ML possibilities

Of course, this abundance of data is only useful if properly collected and analyzed. When you consider that 90 percent of the world's data has been collected in the last two years alone, and 2.5 quintillion (2.5 followed by 18 zeros) bytes of data are produced by humans every day, serious infrastructure needs to be implemented to handle it. There is no way that such high volumes of data can be looked at manually. This is where AI and ML come in.

AI and ML are not new concepts. In fact, the first academic conference on the topic was held way back in [1956](#). But now with the possibilities of 5G, these concepts are revolutionizing the way companies can collect and draw conclusions based on consumer data. This kind of infrastructure can collect your data, run it through algorithms and draw conclusions, then make recommendations to you and increase the chance of you making a purchase—without the need for another human's involvement.

Machine learning models are able to automatically identify clusters representing groups of similar data, describe structures found within these groups and identify mapping of new data to clusters with value. They can separate data records into multiple target and non-target clusters, classifying new data against target outcomes, as well as detect previously unknown events and identify them as anomalies. Enabling concise results allows for automatic analysis of huge volumes of data.

The power of personalization

No longer is the same service rolled out to every customer, but services can now be tailored to each of our specific needs. An existing use-case is [Target](#). The company has acquired 5G-powered analytics and AI and ML methods to process your data and combine it with the data of the store you are in to deliver recommendations as you browse the aisles. As a result, customers receive a highly personalized experience in real time, while the store increases its chances of profitability through targeted sales.

AI and ML methods can also be applied to customer billing at the point of use to monetize complex customer demands. As consumers continue to use personalized services, old, rigid billing

methods are no longer viable. To try to manually charge for the huge number of services that exist, however, would lead to payment chaos. Instead, automated approaches to charging for services will be the best way to charge accurately and in a way that allows for the complexity of the 5G era.

As well as handling existing charging complexities, AI and ML methods can identify potential new revenue streams, further increasing the ROI of this type of infrastructure. By analyzing the habits of those using a particular service, potential new charging opportunities can be identified, and an accurate, leak-proof revenue stream is created. For example, charging deployments such as geo-zoning, peak hours recognition and discounts to boost the performance of underachieving services are ways in which ML- and AI-enabled methods will plug gaps in revenue loss.

There is an advantage for the consumer too, which in turn builds loyalty and is advantageous for the business. The cost of retaining existing, happy customers is generally lower than recruiting new customers, so personalization methods to meet the needs of your customers is a valuable strategy. Multi-leveled tariff systems, which are already being implemented by leading telecoms operators, automatically charge for the services customers are using and prevent a customer being overcharged for a service that they don't want.

Looking forward

Data creation is [due to grow](#) to 175 zettabytes by 2025. To put it in concrete terms, this increase is the same as a stack of DVDs large enough to circle the Earth 222 times, or a video that would take 1.8 billion years to download. The implementation of AI and ML methods to effectively analyze, draw conclusions and make recommendations based on this data is not just preferable, but a necessity.

By investing in AI- and ML-enabled digital transformation solutions, organizations can implement the ability to intelligently collect and use data for a leak-proof revenue stream and in-built security. Not only does the organization see these benefits as well as improved ROI, but it enhances the customer experience. This means customers may be willing to pay more, and a company is more likely to retain existing customers while also attracting new ones.