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Telco: A Value Machine for Modern Times

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We live in a world transformed. Digital commerce is forever altering modern business. Innovations abound as services proliferate, marketplaces arise, and cryptocurrencies emerge as new mediums of exchange. Alone amid this frenetic pace of change, business support systems (BSS) have not kept up. In nearly every sector, in industries from telecommunications to banking to retail exchanges, these IT solutions are rooted in the past, with little prospects for change. A new paradigm is required to align these solutions with current needs, optimizing profits and minimizing costs in the era of cloud.

During the 20th century, many software solutions were developed to handle the reconciliation of large-scale transactions. This started with fixed-price goods and services. ERP systems and homegrown billing solutions were developed to automate commerce at scale. While automation was key, these systems were extremely expensive and time-consuming to build, update and maintain. Furthermore, these systems only provided the functions needed for simple transaction management.

In the 1990s, the Internet proliferated, and globalization began. This created a second wave of market evolution around subscription billing and microtransactions. Commercial off-the-shelf and SaaS billing systems evolved to support these new models. Despite new capabilities, however, these systems remained extremely costly to develop and maintain. As a result, the return on investment—the value recouped from the automation of transactions—declined sharply.

With the digital age, there is a third wave of market evolution for business support software. The focus of the first two generations of software was primarily on the mechanics of mass transfers of goods and services. To support the third wave, the ability to *dynamically assign a fair value* to these exchanges is required. As a result, the effectiveness and return on investment of the next generation of supporting systems must be measured not only by the sunk cost in building,

maintaining, and supporting them, but also in the revenue lost from unoptimized value creation. The digital age demands something new to facilitate automation for increasingly more dynamic exchanges of goods and services.

Telecommunications as a case study

No industry has relied upon automation of large-scale transaction management for commercial exchanges more than telecommunications. This industry, first offering communications and later connectivity as its primary service, grew from a regulated environment and has largely sustained a utility-based, cost-plus pricing model even after deregulation. The sector has, in theory, striven to change its approach. But with little product differentiation available across network performance and value-added services, low-cost providers in almost every market have created a race to the bottom.

As industries mature outside of regulatory frameworks, so do the commerce models that support them based on market, consumer, and supplier dynamics. This is happening in telco as well, as disruptive innovators and new challengers recognize new capabilities to target specific market segments with differentiated products and services.

The convergence of 5G networks, edge capabilities, and emerging partner ecosystems centered on cloud-based technologies and open APIs is creating an entirely new set of market dynamics. For the first time telcos—and other new entrants—are creating a more sophisticated supply chain, with the ability to harness network resources and relevant data sources more seamlessly to create new products and services.

This leads to the emergence of *differentiated* product and service offerings, and the ability to *target specific customer segment*s. This is something telcos could not do with previous network generations, and as a result they were rarely able to move away from utility pricing. New capabilities like network slicing are designed explicitly to enable resources to be applied toward target customer segments with differentiated product offerings. Differentiation and customer segmentation are the key elements required to evolve and sustain more dynamic, value-based business models.

Assigning value for high-volume transactions

Telco is not alone in requiring a modern ability to assign value for highly variable dynamic transactions. And telco is not alone in addressing current challenges where excessive costs are required with the mechanics of reconciling these exchanges.

Connectivity has begun to underpin almost every product and service across all industries, expanding these ecosystems and having major implications on how they exchange value across a new supply chain.

Connected devices enable new data regarding retail behavior, device performance, product lifecycle and purchase renewal, and so much more. This data, much of which can be used to tailor experiences or to monetize offerings, is expected to reach 79.4 ZB (zettabytes) by 2025.

Services that rely on connectivity and data (as in, nearly everything) are primed for a massive shift in commerce models. There will be first-mover advantages. It only takes one disruptor in a category to have a domino effect. We are seeing the beginnings of this shift in the telecom domain with operators implementing dynamic pricing for the first time, based on multiple factors such as customer segment, service mix, and which competitor they are currently targeting. DISH is a great example of this, looking at dynamic pricing as part of its 5G network build as a way of capitalizing on revenues from network slicing for enterprise customers.

Additionally, regulatory changes and product innovation are transforming the landscape, enabling non-telco industries to address these needs independently. Private networks are emerging to enable new forms of access. Chipset innovations are providing the means for almost every machine to connect and share data, with analysts forecasting explosive growth as 5G innovation increasingly requires high-performance computing capabilities. Whereas once telecommunications services had little in common with other goods and services, the lines are now considerably blurred.

A value machine for modern times

In the face of these changes, all companies in every industry must reconsider how they differentiate and deliver market-segmented pricing models that are meaningful to their targeted customers. In most cases, companies have software and processes in place that are not fit for purpose.

Models for value assignment are converging, and commonalities across industries benefit all. Innovative companies are optimizing value based on a combination of the purchase price, inherent value from insights over time, and ability to adapt quickly to rapidly changing market conditions.

Business support systems must address these new advances in radically new ways than in the past. Whereas custom solutions were once the norm, synergies in value assignment and facilitating exchanges regardless of industry will drive down costs, essential to providing a return on investment.

Commonalities for the modern value machine include:

1. Harnessing cloud, open-source innovation, and the worldwide development community;
2. Supporting real-time dynamic pricing conditions for all transactions at the time of purchase; and
3. Serving these functions with the most efficiency, predictability, and the lowest possible cost.

Let's look at each of these points here:

Harnessing cloud

While sunk costs were defensible for first- and second-generation business support systems, the variable nature of emerging business models demands cloud-centric business support systems to manage modern exchanges of value. Solutions suited to the cloud serve to provide elastic cost

models, just as modern BSS must deliver elastic pricing to the business. An essential underlying factor in these decisions is that solutions must be cloud agnostic; locking into any one cloud or cloud vendor is as fraught with danger as turning over one's business to any one sole supplier. Truly cloud-native solutions run well on any cloud, and businesses won't be held hostage to their pace of change. Likewise, an open cloud-based solution offers the promise of open-source innovation, with developers worldwide contributing new advances across industry boundaries.

Dynamic pricing

Though pricing models in earlier times didn't change frequently in most industries—and were sometimes even based on tariffs or schemes that required extensive and time-consuming approval processes—modern commerce increasingly must account for rapidly changing conditions to apply responsive price changes. To achieve real-time dynamic pricing, the BSS must be able to ingest rapidly changing attributes from multiple sources and apply them instantly. Small changes in pricing can have a ripple effect on product catalogs, offer systems, care systems, and billing. A coordinated and thoughtful approach is needed to introduce modern dynamic commerce solutions designed to manage this pace of change.

Just as cloud-based infrastructure enables elastic *cost structures* for modern commerce, dynamic pricing solutions address elastic *value creation* through optimization of prices best suited to changing market conditions.

Extensible and efficient

First-generation systems for automating value exchanges were largely custom built, tailored to each individual business's needs. This stilted growth and impeded progress as each "change request" introduced new costs and time-to-market delays. The value machine of the future is highly adaptable with configuration rules, not programmable instructions. As data is emerging as a key differentiator, it is also the primary driver of assigning value. The value machine must ingest data, assess data for decision-making, and turn it into value. To do this, it must have well-defined open application programming interfaces (APIs) to enable the introduction of new systems and data streams from different vendors. When architected correctly, costs are kept low and predictable, despite an ever-changing environment. And the business remains agile to ensure that, as with the choice of cloud providers, no vendor holds the business hostage with its support systems.

The simple truth is that the billing system as we know it has evolved very little in the past 25 years. Where and how it is implemented has changed, but its fundamental set of capabilities has remained static, built for industries that have yet to develop differentiated products and segmented markets. As noted earlier, today's billing applications were built with an emphasis on the mechanics of mass transfers of goods and services, rather than aiding with the difficult challenge of *assigning a fair value* to these exchanges based on customers' perceived value and changing market conditions.

In short, the billing system is well overdue for a replacement that is optimized to automate the exchange of value in a more sophisticated supply chain.

Conclusion

The focus of business support systems in place today remains largely on handling processes that are antiquated and inadequate to assigning value rapidly and accurately as business conditions change. In Darwinian fashion, these businesses will fail to keep up with those that incorporate change into the DNA of the company.

What this generation requires is a value machine. The value machine assigns value in a fair, equitable, secure, and auditable manner. It enables predictable revenue streams, with adaptable models that rapidly accommodate change. The value machine is entirely cloud-based and does not lock anyone into a particular cloud or set of tools. It is also inherently low cost, as its own cost detracts from the value exchanged, and yet it provides inherent value itself by facilitating the optimization of value exchanges.

These innovations empower companies to innovate and thrive in our connected world. And with them, business will never be the same.