Telcos need to prioritize 5G value operations to take back control of the telecoms industry

In the 4G era, telcos expended major resources and time in building networks. However, they soon discovered that the true beneficiaries, both in revenue and reputation, were OTT Internet companies. In the fast-approaching 5G era, will the communications industry be able to regain control of industry development?

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Transforming business models

As telecommunications involve national security, operators require a government-issued operating license. In the early days, governments strictly controlled access to the communications market, and licenses were a scarce resource.

It wasn't necessary for operators to carry out numerous innovations in terms of network capabilities monetization – voice, SMS, traffic, and private lines could be provided simply by encapsulating communications and networks. Along with the corresponding tariffs, these comprised operators' range of services and products for customers.

Later, the communications market gradually opened up and competition between different operators in the same country or region began to occur. Regardless of the number of permutations of products, packages, or marketing, the basic product provided by operators for customers was simple communication capabilities. But these were built on standards and supported by the same suppliers, so over time network quality and service types became homogenized.

Technology continued to advance, communication channels increased in diversity, and network speeds became faster. But despite this, operators carried out homogeneous competition, with price ultimately becoming the main focus of competition. Industry insiders believe that if the traditional development model continued, operators would find it difficult to increase revenues as service volumes grew.

Today, the world's operators are "reducing costs and increasing efficiency". Leveraging vast customer bases and networks, they're streamlining package tariffs and reducing internal operating costs. Even if revenue growth is small, they're able to maintain high profitability. But if operators keep to this kind of development strategy, what benefits will they be able to extract from 5G packages that include more content and faster user speeds?

Operators must harness the opportunity 5G will provide to transform their position in the industry. The most important task will be to seek a different communication industry business model and a path that supports growth and monetization. Then it will be possible to increase the business value of 5G and encourage the industry to unite and collaborate to develop it.

5G offers conditions for value operations

5G doesn't simply refer to upgrading wireless communication networks.

It's also a general term for a large number of technological innovations. "Value operations", for example, utilizes 5G technologies to package communication resources and capabilities into new products with a better customer experience to achieve higher business value.

In the 5G era, the evolution of the core network to NFV will encourage the further "IT-ization" of CT resources, meaning the further opening of underlying infrastructure and thus free combination and orchestration. The goal of evolving the communication network is orchestratable resources, invokable capabilities, network automation, and O&M smartification. This will accelerate industry innovation and stimulate vast social resources, accelerating digital transformation.

The aim of combining basic technological improvements, such as independently orchestratable resources and freely invokable capabilities is to implement network resources as a capability; that is, combining different network elements and communication units to provide personalized, open services for upper-layer applications. Upper-layer application developers will no longer be constrained by communication network specializations and borders. They will be able to flexibly invoke and combine underlying resources conveniently and freely based on their own needs.

In the 4G era, the mobile Internet has developed rapidly and solved the problem of digitalization for individuals. The basis of this success has been, first, the major development of communication infrastructure, and, second, the openness of communication networks to upper-layer applications. In regard to moving from digitalization for individuals to digitalization of industries, 5G's openness question is an important factor: if 5G is driven only by communication equipment manufacturers and operators, it will be difficult to meet different industries' needs for communication infrastructure.

It will be necessary to support flexible invocation, combine underlying resources, and lower technological barriers to entry. Opening 5G networks will have to be based on the platform, to attract more resources to take part in joint innovation. The main role of the platform will be twofold: one, to eliminate communication specialization, so that partners can easily invoke capabilities; and, two, to accumulate shared capabilities and form digital assets within the telco.

Another important factor is cost. If communication resources are combined into communication capabilities with long cycle times, high costs, and complex operations, the large-scale implementation of even a theoretically achievable function will be difficult to carry out. As such, the question of the implementation cost and ease of use of network resources as a capability must also be considered.

Technological evolution, open platforms, and cost reduction are all issues that need to be addressed when carrying out network resources as a capability. It also involves standardized 5G capabilities, which also creates room for device manufacturers and operators to innovate. Therefore, 5G brings opportunities to change business models, and the possibility of differentiated competitive strengths, which defines a new starting point for operators.

Combining communication capabilities into products

Carriers operate based on basic communication capabilities. Even if they propose optimization, requirements are constrained by CT control models. It's difficult to push equipment manufacturers to complete R&D quickly or quickly adjust communication networks. They carry out development based on communication standards. This involves long cycle times and changes come at high cost. There are also stability requirements. This makes it impossible for them to execute R&D in an iterative trial-and-error manner as Internet companies do.

But in front of customers, these excuses look increasingly feeble. To meet customers' needs and experience demands, changes and adjustments must be made faster. In the mobile Internet era, one of the key things operators were accused of was ignoring customer experience, especially compared to Internet companies. In the 5G era, operators will need to improve how they meet the demands and usage scenarios of customers. They will have to provide products and services in a way that customers can perceive, so that they can receive a better experience. Then operators will be better placed to sell products even at premium prices.

Zero-rated data acceleration packages for mobile games that have come onto the market recently are a good example. With the popularity of unlimited data packages, users have gradually stopped complaining about tariffs. Instead they now grumble about communication quality. Wireless resources are limited, and network congestion is likely to occur in areas with large numbers of users, so customers who are sensitive to network quality will want to purchase high-quality traffic packets. And heavy mobile game users are more than willing to dip into their pockets to buy custom game acceleration packages, which can improve their gaming experience and their scores.

This makes the importance of using network resources as a capability abundantly clear: when underlying resources and capabilities are opened up, upper-layer applications can flexibly combine communication products based on customer needs, so that they can be quickly adjusted according to customers' experiences and perception. Building on increasing network resource capacity to implement experience-based communication capabilities, integrating and packaging communication capabilities in a way that better meets customer requirements, and carrying out marketing in specific scenarios and experiences will be an important means of value operations in the future.

Of the three core 5G scenarios, large-capacity mMTC and low-latency uRLLC have been well received by many customers in the industry, as both will bring a qualitative change in communication technology and connectivity and open the door to digitalization in the industry.

In terms of low-latency application scenarios and in addition to the much-hyped self-driving technology, "digital twins" could also offer a vast range of possibilities. Using this technology to digitally map physical models, sensors, and operating history in virtual space using their data, digital models or twins can be recreated in different locations. This integrated multidisciplinary, multiscale, multi-probabilistic simulation process, combined with low-latency communication, makes remote disassembly and the repair of components possible. Digital twins technology has a high level of commercial value.

In the view of many industry insiders, 5G will enable the Industrial Internet to succeed, optimally integrating communications technology with industry applications to form a "1 + 1 > 2" effect. Technology is only part of the means of turning dreams into reality – business operations and industry cooperation are also key. In this kind of scenario, the winners will be the ones that can integrate communications, operators, industry customers, and industry applications, and maximize value.

The arrival of 5G is inevitable and the decoupling and transformation of underlying communications technology is accelerating. Value operations based on 5G are drawing nearer and nearer. But what we're not sure of is who the main players in 5G-based value operations will be. Will it be the operators blazing the trail, or a new leader standing on their shoulders?

Compared to industry customers and industry solution providers, operators have a first-mover advantage in the 5G field at the moment. And there's no reason why they can't leverage their advantageous position to gain a head start. But if they adopt a wait-and-see attitude or hold on to traditional business models, they may not easily have another opportunity for transformation in the future.