Telecom contactless payment crosses borders

Carriers dial into blockchain for a cleaner exchange of payment worldwide

IBM®

Experts on this topic

Utpal Mangla

VP and Senior Partner, IBM Services Innovation Competency, Telecom, Media, and Entertainment (TM&E)
linkedin.com/in/utpal-mangla-b748541/
utpal.mangla@ca.ibm.com

A thought leader in emerging technologies, Utpal Mangla brings AI, IoT, 5G Edge, hybrid cloud, robotics, and blockchain innovations to clients worldwide. His mission is to fuel growth by building, selling, and implementing differentiated competitive market solutions that match critical business imperatives.

Luca Marchi

Associate Partner, IBM AI and Blockchain Lead, Center of Competence, TM&E
linkedin.com/in/lucamarchi/
lmarchi@us.ibm.com

Luca Marchi helps telecom, media, and entertainment companies improve the way they serve their customers with AI and blockchain. His focus is on transformational projects that help leaders reshape industries and create new value.

Ling Wu

Founder and Chief Executive Officer at TBCASoft
linkedin.com/in/ling-wu-270802/
Ling.Wu@TBCASoft.com

Ling Wu is a mathematician, physicist, engineer, and business development pioneer leading talented multinational teams developing innovative technologies and business globally. He is the founder of TBCASoft, the leading cross-carrier blockchain technology company, and co-chairman of the Carrier Blockchain Study Group (CBSG) Consortium.

Wei Chen

Chief Financial Officer and Head of Global Business Development at TBCASoft
linkedin.com/in/wei-chen-4a25044/
wei.chen@tbcasoft.com

Built over 16 years, Wei Chen has expertise in financial modeling, capital raising, business planning, and investment advisory. Before joining TBCASoft, he was the co-head of the Goldman Sachs Asia Investment Research team in the technology sector. Wei frequently provides consulting sessions for senior management and board members of leading technology companies.

As a result of COVID-19, 39% of consumers say they're more likely to use contactless payment options.[1]

Key takeaways

A healthier way to do business
Payment service providers have attracted the "cashless" consumer, many for mere ease of paying with a mobile payment app. Now more than ever, there's a greater need for a cleaner exchange of payment for goods and services worldwide.

A growing opportunity in telecom
Whatever the size of the mobile payment market, there's more to be had by telecom providers. The industry can position itself to take advantage of this opportunity with cross-border mobile payments.

Blockchain technology answers the call
Enabling cross-border, blockchain pro-tected partnerships between international carriers and payment service providers can chip away at entry barriers to the global contactless payment market.

—

The "cashless" global consumer

Mobile payments worldwide are growing rapidly, especially in Asia. For example, 86 percent of China's population taps mobile payment apps, followed by 67 percent of consumers in Thailand, and in Vietnam, 61 percent of consumers go cashless.[2] Instead of paying with cash or credit cards, payments are made through a machine-readable QR code, barcode, a downloaded app, a web browser, or a text message.

Growth has been driven by platforms on which online and brick-and-mortar stores and merchants are connected. For example, in addition to its 25 million users, PayPay is now supported by 1.94 million merchant partners and local stores in Japan.[3]

Just 3 percent of mobile payments spend is billed by telecom providers.[4] To gain a share of the mobile payments market, telecom needs to proactively add value to the payment process. And the industry is in a unique—and timely—position to do just that.

Keep your hands to yourself

Influenza on banknotes can remain viable for up to 48 hours, and credit cards may be just as contaminated as cash.[5] Any kind of payment that's passed from person to person can carry a virus—just as door handles and hand railings might—and spread it on contact. Contactless payments can help make the world cleaner—and hopefully healthier—by limiting the spread of highly contagious viruses passed on a piece currency, and credit, debit, or gift cards.

Now, prompted by the COVID-19 crisis and social distancing measures, the launch of contactless payments has accelerated (see sidebar on page 2, "Viettel: Connecting telecom accounts to merchant networks globally").

Viettel: Connecting telecom accounts to merchant networks globally

In March 2020, to contribute to preventing the spread of the COVID-19 virus, the Prime Minister asked the State Bank of Vietnam (SBV) to implement measures to promote non-cash payments.[6] Vietnamese multinational telecom Viettel, with more than 110 million customers in 11 countries, has started to implement contactless mobile payment using its telecommunication billing accounts for physical store purchases.[7]

TBCASoft: The largest open payment network enabling cross-border transactions

US-based company TBCASoft co-chairs the Carrier Blockchain Study Group (CBSG) Consortium, and is designing a high-performance, secured consortium-based blockchain platform specifically for the telecommunication industry.[8] Its cross-carrier payment system will go live in Q3 2020; both the consortium and upcoming network are open to participation of all global telecom carriers.

A cross-border payment system

While the travel industry is facing devastating challenges, international travel for business and tourism will return. When it does, consumers will look for a more convenient and less expensive way to conduct payment transactions started on one side of a border and completed on another.

But there exists no singular effective, secure method for people buying goods and services from merchants abroad, particularly smaller ones. Such shops may not accept credit cards. Paying cash is cumbersome to travelers forced to exchange currency and dole out commission twice: first, at the time of exchange, and again should they find yen, rupees, or other global currencies in their pockets at the end of their visits.

Cross-border payments are a segment within contactless payment that shows great potential for telecom and one that adds user value. In a cross-border payment system (CBPS), carriers allow their mobile customers to pay local merchants anywhere in the world using their mobile accounts. The result is new revenue for carriers and more value for users (see Figure 1).

—

Figure 1
Revenue and value collide

Revenue for the carrier	Value for the user
Tap into the mobile payment market	When traveling abroad, no need for currency exchange
New product line and revenue stream	Pay using own mobile payment app
An extension of existing payments to international merchants	Immediate access to a local merchant network

A cross-border mobile payment system could restrict the reach of viruses.

Roles in the CBPS network include the issuer, acquirer, and gateway (see Figure 2).

The role of an issuer

Carriers can be easily positioned as an issuer on a CBPS. An issuer provides the mobile payment application to its mobile subscribers. Issuers can monetize service value-add per transaction volume. Besides monetary gains, other intangible value includes lowering the carrier's churn rate and increasing user loyalty by offering expanded services.

The role of an acquirer

Payment service providers can serve as an acquirer on a CBPS. Issuers can make purchases at the acquirer's global merchants, conveniently billed to their monthly phone bills. As an acquirer, after connecting to a CBPS, its merchants can accept payments from all issuers on the CBPS. The acquirer benefits from helping merchants capture foreign spending, and enhanced merchant acquisition capability by offering more revenue opportunity.

The role of a gateway

Carriers can also act as a gateway. The gateway provides payment processing and settlement services to issuers or acquirers and is responsible for blockchain node management. Issuers and acquirers are connected to the gateway via an application programming interface (API). The gateway can aggregate multiple payment service providers in the local market, and connect them to the CBPS network, capturing both inbound and outbound transactions (see sidebar on page 2, "TBCASoft: The largest open payment network enabling cross-border transactions").

—

Figure 2
Roles within a cross-border payment system
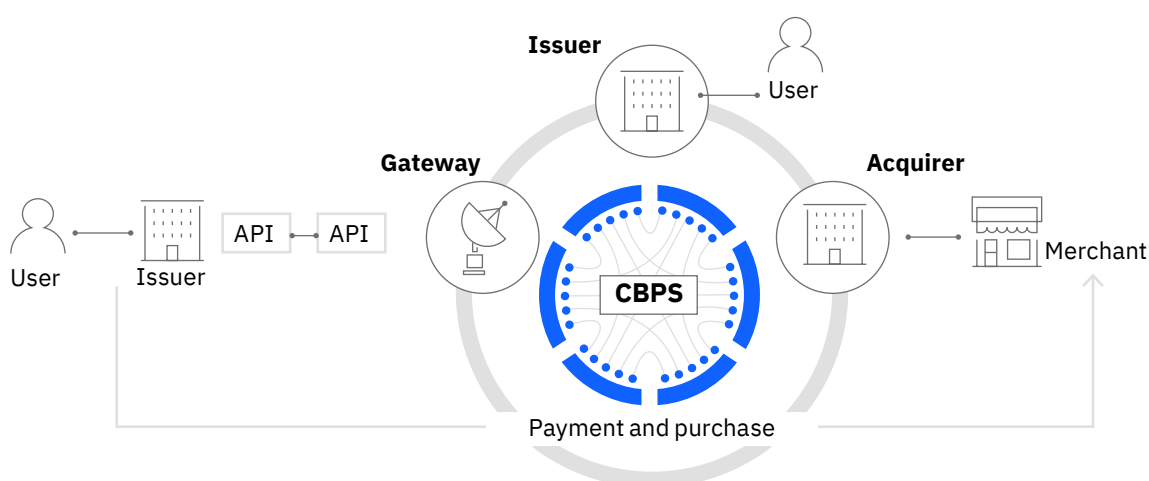
Source: IBM Instiute for Business Value.

CBPS blockchain benefits

Immutable records

No need for reconciliations

Highly secure from attacks

Cash me outside

Market research conducted by TechNavio shows that the payment service provider market has the potential to grow by USD 88.85 billion between 2020 and 2024, and 33 percent of that will originate from North America.[9] Payment service providers are well-positioned in their national markets, but they've yet to tackle international expansion due to entry barriers.

First, acquiring merchants and users internationally is expensive. Customer acquisition costs in the US for the financial industry, for example, can run as high as USD 175 per user.[10] Companies like PayPay in Japan, Alipay in China, and Paytm in India build their entire models around enabling merchants to accept mobile payments through a QR code display.

And while payment service providers can leverage a solid technology network at home—either through direct ownership or strategic partnership—they can't rely on the same infrastructure internationally. This makes it difficult to build trusted relationships with users, merchants, and financial institutions. Also, local regulations change based on geographic region or country: complying with multiple regulatory frameworks is not only costly, but it also leads to the added risk of additional compliance.

Telecom carriers, on the other hand, let subscribers access other services while traveling outside their geographical coverage area or home network by using the network of another operator. Blockchain technology can bring together carriers, payment service providers, mobile subscribers, and merchants. Customers using smartphones and data plans abroad can pay for products purchased or services needed wherever they travel outside of their home countries. This leaves carriers and payment service providers to clear and settle transactions on the back end.

It's simple really: Telecom has the infrastructure and user base; payment service providers have the merchants.

But telecom carriers face barriers similar to payment service providers. It's not their core business to build merchant networks, at home or internationally. This constraint, though, is offset by large bases of potential users both nationally and internationally, given the regional or global presence of many carriers. In terms of network, carriers offer the best infrastructure in their home markets: When they don't own a network internationally, they will rely on agreements with other carriers. The same regulatory constraints faced by payment service providers also apply to telecom.

Enabling mobile money

Blockchain can act as the enabling technology between telecom and payment service providers internationally. Carriers can generate revenues from traveling subscribers by allowing them to use a telecom-provided digital wallet with merchants on the platform networks in the countries they visit.

To be clear, a blockchain doesn't require the use of cryptocurrency to function. Hyperledger, an open-source collaborative effort, lets businesses use blockchain to create immutable ledgers of record to avoid hacks, fraud, or corruption.[11]

Blockchain can track, manage, and reconcile subscriber transactions. The immutability and shared ledger capability of blockchain strengthen the trust among different players on the network, making it easier to recognize payments, verify bills, and comply with financial regulations.

In this ecosystem, blockchain generates a favorable network effect, matching carrier subscribers with merchants. And by safely providing access to carrier infrastructure, it provides subscribers and merchants with reliable infrastructure in a given market. Plus, blockchain traceability can make it easier to work with financial institutions and regulators.

Action guide
Telecom contactless payment crosses borders

Facing disruptors like how to effectively monetize 5G and catering to digital natives remolding the industry, unique transformation is key to telecom success. One place to start is cross-border mobile payments.

1. Join the movement

Carriers possess the unique advantages of robust infrastructure, established "know your customer" profiles, and billing relationships with existing subscribers. If leveraged effectively, these attributes represent a massive opportunity to provide mobile payment service. Carriers can offer a simple QR code payment application to their users that's funded by their post-paid phone bill account for in-store payments.

2. Embrace blockchain

Via the blockchain network, carriers can help transform the telecom industry. They can create new revenue streams and extend to other fintech, identity, and Internet of Things (IoT) services. By connecting to a global blockchain platform, carriers can provide cross-border payments and identify verification services for their mobile subscribers and/or carrier provisioned IoT devices.

3. Connect globally

Carriers can join the CBSG Consortium which provides value to its members by offering business use case discovery, technology consultation and implementation, and regulatory framework support. Carriers that are already offering payment services domestically can connect to a cross-carrier payment system to enable cross-border payment capabilities.

Notes and sources

1   IBM Institute for Business Value Market Research Insights Survey of 5,054 U.S. adults, fielded 21-26 April 2020.

2   Yu, Eileen. "Asia driving global mobile payments, with eight in top 10 markets." ZDNet. April 2019. https://www.zdnet.com/article/asia-driving-global-mobile-payments-with-eight-in-top-10-markets/

3   Bhalla, Tarush. "Paytm's Japanese foray PayPay reaches 25M users, close to 2M merchant partners." YourStory. February 2020. https://yourstory.com/2020/02/paytm-japan-paypay-softbank-yahoo

4   Hegde, Zenobia. "The IoT is transforming the telecommunications industry, creating exciting new revenue opportunities for telcos that innovate." Vanilla Plus. February 2018. https://www.vanillaplus.com/2018/02/23/36146-iot-transforming-telecommunications-industry-creating-exciting-new-revenue-opportunities-telcos-innovate/

5   Thomas, Yves, Guido Vogel, Werner Wunderl, Patricia Suter, Mark Witschi, Daniel Koch, Caroline Tapparel, and Laurent Kaiser. "Survival of Influenza Virus on Banknotes." PubMed Central® (PMC). May 2008. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2394922/

6   "Premier directs removal of difficulties for enterprises amid COVID-19 outbreak." Vietnam Law Magazine. April 2020. http://vietnamlawmagazine.vn/premier-directs-removal-of-difficulties-for-enterprises-amid-covid-19-outbreak-27114.html

7   "About us." Viettel. http://viettel.com.vn/en

8   Zmudzinski, Adrian. "TBCASoft, IBM and SoftBank Announce a Mobile Payment Blockchain." Cointelegraph. October 2019. https://cointelegraph.com/news/tbcasoft-ibm-and-softbank-announced-a-mobile-payment-blockchain

9   "Over The Top Market by Content Type, Screen Type, and Geography - Forecast and Analysis 2020-2024." Technavio. March 2020. https://www.technavio.com/report/over-the-top-market-industry-analysis

10   Bauer, Emily. "All About Customer Acquisition Cost (CAC)." Propeller. March 2017. https://www.propellercrm.com/blog/customer-acquisition-cost

11   "What is Hyperledger?" Hyperledger. https://www.hyperledger.org

About Expert Insights

Expert Insights represent the opinions of thought leaders on newsworthy business and related technology topics. They are based upon conversations with leading subject matter experts from around the globe. For more information, contact the IBM Institute for Business Value at iibv@us.ibm.com.