

6 Million Nepalis work overseas

Eight out of the ten highest mountain peaks in the world are in Nepal. Mount Everest in the Himalayas is the highest. These eight mountains are over eight thousand meters high. There are another 33 mountains over seven thousand meters high. The spectacular views of these mountains attract many tourists. In 2018, the number of overseas visitors to Nepal exceeded one million for the first time.

On the other hand, Nepal struggles to feed its population of 29 million people. Apart from tourism, the main industries are limited to agriculture and textiles, where about 70% of people work.

Since the job opportunities in Nepal are limited, people go abroad. About 5 to 6 million Nepalis are currently working abroad, with an average of additional one thousand to fifteen hundred people leaving the country every day. Therefore, it is of paramount importance to expand export industries, which can employ Nepalis, and also to bring foreign reserves into Nepal. "In order to achieve this, we need a secure, and safe way to transfer money," commented Mr. Dev Man Hirachan, the representative of Nepal's FMCCI.

Overseas Nepalis repatriate to Nepal between seven hundred billion Yen (US\$6.4bn) and one trillion Yen (US\$9bn) every year. A minimum of 5,000 yen (US\$45) or more is charged on each transfer of between 200,000 yen (US\$1,800) and 300,000 yen (US\$2,700) into Nepal. This is costly. Moreover, a large number of Nepalis do not know how to make international payments. Thus, they are targets of fraudulent underground banks, which has created big problems.

Nepal needs a new financial infrastructure in order to develop its economy. 60% of the population does not have access to a bank account. "A lot of people are unable to start businesses because they cannot access a payment system." Says Mr. Hirachan.

Agriculture has huge potential in Nepal. There is abundant arable land at altitudes from as low as 100 meters to 4000 meters above sea level, with temperatures ranging from zero to 40 degrees Celsius. This means that a whole variety of crops can be grown in Nepal. However, as the financial infrastructure, including even a basic payment system remains primitive, 40% of the arable land is not used. As a result, 70% of food is imported from China and India.

Although two of the world's largest markets, China and India, are on Nepal's doorstep, Nepal exports very little. Nepal exports 97 billion yen's (\$US880 million) worth of goods each year, and imports 1,480 billion (\$US13.45 billion). The value of imports is 15 times exports. Until now, there has not been a way to correct this imbalance.

Nepal's FMCCI representative, Mr Hirachan has been pressing the government of Nepal to modernize the country's financial infrastructure. The most attractive solution is to adopt a "smart phone" mobile payment system, as in China. Although only 40% of the population of Nepal has a bank account, the mobile penetration is 100%. Moreover, 60% of the entire population uses the Internet. The 3G mobile network covers the entire country. Thus, the basic infrastructure for the introduction of a new smart phone payment system already exists. For the poorest segment, the merit of downloading a payment application on to their smart phones would be huge.

The government has been persuaded by industry and business to move forward in order to find a way to balance the fiscal budget and to promote the export sector.

GVE, a Fintech venture established in Japan in 2017, was hired by the Japanese government in order to evaluate, and to implement a new financial infrastructure for Nepalese government and Central Bank.

Koji Fusa, the Co-founder of GVE, is a thirty-five year financial sector veteran who previously served as the CEO of UBS's Japanese subsidiary. In 2015, he served as an independent adviser to an Oxford University team, which was advising Aung San Suu Kyi government on future economic policy for Myanmar.

One of Myanmar's top projects is to issue a central bank digital currency, or CBDC. Of Myanmar's population of 50 million people, only 10% have bank accounts. In rural areas, farmers work to repay debt with high interest. On the other hand, the smart phone penetration is 70%. Aung Sun Suu Kyi's idea was to utilize the smart phone network as a payment system by giving digital accounts, or "digital wallets" to those who have smart phones. Aung San Suu Kyi key motivation is to promote "financial inclusion," to eliminate the division between the rich and the poor. All people should have access to a basic payment system. Mr. Fusa was selected to help because of his deep understanding of finance, and his successful track record in implementing a number of IT projects in the past. Mr. Fusa thought that, "the ideal platform should be able to transfer money by smart phone, in any currency, US dollars, Japanese Yen, or Chinese Yuan, to anywhere in the world." He knew that the most important function for a CBDC (Central Bank Digital Currency) platform is security. The existing cashless payment systems have too many problems. In order to be able to truly call it a "CBDC," the design has to ensure "100% security and safety." Accordingly, Mr. Fusa requested the help of Mr. Susumu Kusakabe, who developed FeliCa, the Operating System for Suica and Edy, which is widely used for contactless payment systems in Japan. Mr. Kusakabe and Mr. Fusa both attended the same secondary school and university some forty years ago. Mr. Fusa chose Mr. Kusakabe because the FeliCa Operating System is the only major payment system, which has not been hacked during its 20 years of use. Mr. Kusabe became the Senior Security Advisor for GVE. The design for the CBDC smart phone platform was completed, and named EXC. The developer, GVE, was established soon after with a view to apply for patents. In April

2018, the first patent under the PCT (Patent Cooperation Treaty) was established in Japan. Currently, this patent is pending in the US, Europe, China and India.

Although the Myanmar project has not progressed for reasons other than technology, GVE has been working with the Central Banks of several developing countries. One of these is Nepal. Mr. Fusa met with the Finance Minister of Nepal and the Governor of the Central Bank in early September 2019. There was widespread agreement of the merit of introducing the EXC platform into Nepal.

The Nepal government officials also asked Mr. Fusa to find a donor who could fund part of the project. Mr. Fusa contacted JICA. JICA decided to support GVE's proposal for a Public Private Partnership (PPP) between the government of Nepal and GVE. Dr. Junichi Yamada, the Director responsible for South Asia at JICA, whom Mr. Fusa contacted, explains the reason for his support as follows: "The expected impact of the introduction of a CBDC platform into a developing country is enormous since it can serve as the platform for the digital transformation (DX) of the entire country."

DX is the concept of transforming both public and private services by digitalizing them. DX changes the way people live and think, producing a "leap-frog" effect, through which a developing country can "leap" to new services without going through the established path of developed countries. A good example is how developing countries have adopted mobile and smart phones without installing fixed line telephone infrastructure. Thus, Nepal may be able to obtain an advanced financial infrastructure, which surpasses those of developed countries, in one leap. The way this instant payment platform should be operated, upgraded, and maintained, will be examined in detail during a research project, which is about to start in March.

The next Estonia

Mr. Fusa explains that Nepal could be the next Estonia in terms of digital advancement. Estonia has developed its own X-Road and has implemented extensive "e-Government" services. For example, 95% of the population uses digital tax filing with their own ID. Estonia is the most advanced DX country in the world. Mr. Hirachan echoes this view. "Nepal could become an example for Asia, especially South Asia, in terms of DX. A number of digital services could be exported from Nepal." Assuming legal permission is granted, the joint project between the Nepal government and GVE, "the instant payment platform," will enable the establishment of the Nepal Rupee CBDC. This would be the world's first comprehensive CBDC project.

Advantage over Libra

As mentioned in the following section (pages 82 to page 84), CBDC has been researched, and is being developed all around the world. Over 1 billion people in China, employing smart phones, use AliPay. Facebook plans its own private digital currency system, Libra.

What is the difference between these private systems and a CBDC? Obviously, currency issued by the private sector has severe limitations compared to those issued by Central Banks. For example, the central bank system allows licensed commercial banks to create credits. By allowing a licensed bank to access and create credit, the economy as a whole grows smoothly. Adoption of a CBDC will maintain the current central bank system. Since Libra is a private sector initiative, it is very unlikely that a commercial bank would be able to leverage Libra to create credit. In fact, Facebook has clearly stated that Libra will not be able to be used in order to create credit. Many people believe that CBDC will emerge as the ultimate “financial tool,” embedding multiple service functions.

Footnotes;

Future finance of Nepal; EXC’s potential

The EXC instant payment system developed by GVE is a digital currency platform using NFC (Near Field Contact) technology. One of its principal attractions is security. It contains a number of high-level features. One of these is “the 3-way database,” which is patented. As the name implies, the system consists of three main features” (1) Account base database – this keeps a record similar to bank record transactions. (2) Transaction database, which records all the transactions chronologically, according to a time stamp. (3) Coin database. This database keeps a record according to the digital money IDs. Just like paper money, the digital money is ascribed a unique reference number. Through the coin database, the movement of the digitalized money can be followed through its unique reference ID. Even if a hacker were able to change the record of one of the databases, it would be all but impossible to hack two or more databases at the same time.

Like sophisticated securities broking systems, the EXC achieves Straight Through Processing, STP. This means no human intervention is required, and human errors are minimized.

The EXC platform developed by GVE satisfies all the criteria specified by the IMF for “the ideal CBDC,” including (1) speed of transaction, (2) convenience, (3) inter-operability, (4) high security, and (5) low cost operation.

For example, the EXC’s ultimate platform can handle 200,000 transactions per second, or more than 11 times what BNP Paribas estimates for the payments required by the entire population on the globe.

The system’s operation is extremely low cost. It is therefore suitable for micropayment businesses too.