

Digital Financial Services *in* Nepal



May 2025

IN PARTNERSHIP WITH



KOREA
Development Cooperation



DIGITAL FINANCIAL SERVICES IN NEPAL

IN PARTNERSHIP WITH



KOREA
Development Cooperation



WORLD BANK GROUP

THE WORLD BANK
IBRD • IDA

IFC International
Finance Corporation

COPYRIGHT & DISCLAIMER NOTICE

The material in this work is copyrighted. Copying and/or transmitting portions or all this work without permission may be a violation of applicable law. IFC does not guarantee the accuracy, reliability, or completeness of the content included in this work, or the conclusions or judgments described herein, and accepts no responsibility or liability for any omissions or errors (including, without limitation, typographical errors and technical errors) in the content whatsoever or for reliance thereon. IFC encourages dissemination of its work and will normally grant permission to reproduce portions of the work promptly, and when the reproduction is for educational and noncommercial purposes, without a fee, subject to such attributions and notices as we may reasonably require.

The boundaries, colors, denominations, and other information shown on any map in this work do not imply any judgment on the part of the World Bank concerning the legal status of any territory or the endorsement or acceptance of such boundaries. The findings, interpretations, and conclusions expressed in this volume do not necessarily reflect the views of the executive directors of the World Bank or the governments they represent.

The contents of this work are intended for general informational purposes only and are not intended to constitute legal, securities, or investment advice, an opinion regarding the appropriateness of any investment, or a solicitation of any type. IFC or its affiliates may have an investment in, provide other advice or services to, or otherwise have a financial interest in some of the companies and parties named herein.

All other queries on rights and licenses, including subsidiary rights, should be addressed to IFC Communications, 2121 Pennsylvania Avenue, N.W., Washington, D.C. 20433.

The International Finance Corporation is an international organization established by Articles of Agreement among its member countries, and a member of the World Bank Group. All names, logos, and trademarks are the property of IFC and any such materials may not be used for any purpose without the express written consent of IFC. "International Finance Corporation" and "IFC" are registered trademarks of IFC and are protected under international law.

About IFC

IFC—a member of the World Bank Group—is the largest global development institution focused on the private sector in emerging markets. We work in more than 100 countries, using our capital, mobilization capacity, expertise, and influence to create markets and opportunities in developing countries. In fiscal year 2024, IFC committed a record \$56 billion to private companies and financial institutions, leveraging private sector solutions and mobilizing private capital to create a world free of poverty on a livable planet. For more information, visit www.ifc.org.

Governor's message

Digital financial services (DFS) are critical for improving access to finance. Over the past decade, Nepal has witnessed transformative advancements in financial technology, driven by the rapid rise of internet penetration, technological innovation, and increasing adaptation of digital payments. These developments are reshaping the financial landscape, creating new opportunities for businesses and individuals alike, while also presenting challenges that we must collectively address.

At the Nepal Rastra Bank (NRB), we recognize that the future of financial services lies in digitization. Digital financial services offer tremendous potential for enhancing financial inclusion, reducing costs, and improving efficiency across all sectors of our economy. Over the last decade, NRB has catalyzed innovations to foster digital financial services which we further promoted during COVID-19 and onwards. The successful implementation of the National Payment System Development Strategy and the rollout of the Retail Payment Strategy by NRB with the support from IFC has played a critical role in promoting low-cost, fast, and secure digital payment methods for individuals and micro, small and medium enterprises (MSMEs). These initiatives have supported streamlining domestic payments, and the formulation of enabling regulatory frameworks for digital payment service providers, ensuring security and consumer protection. The NRB has also encouraged the use of mobile wallets, e-banking, and QR-based payments to boost financial inclusion and move towards less cash society. These measures aim to modernize Nepal's financial system and facilitate integration with the global digital economy. One of the most significant achievements has been the integration of domestic and international payment systems. The adoption of global payment platforms marks a key milestone in ensuring that citizens and businesses can engage more seamlessly in the global economy. These advancements have also facilitated Nepal's remittance inflows, benefiting millions of migrant workers and their families. Looking ahead, NRB is exploring the future of digital finance through the development of a Central Bank Digital Currency (CBDC) and is preparing to launch a regulatory sandbox to foster innovation.

While we celebrate these successes, we are extremely aware of the need for proactive efforts to address existing gaps. We must also intensify our focus on financial capability and financial consumer protection ensuring that every citizen, regardless of location or socioeconomic background, can confidently engage with digital financial tools.

This report highlights the progress made through collaborative effort for promoting digital payments, enhancing usage of digital channels and instruments, expanding access to cross-border financial services, and fostering innovation within the financial ecosystem. NRB remains committed to working alongside the government, financial institutions, technology providers, and international partners to build a robust and inclusive digital financial ecosystem. Together, we can harness the full potential of digital finance to drive economic growth, empower individuals, and create a more equitable financial future for all Nepalis.

I would like to thank IFC for the Access to Financial Services Nepal Project, supported by the governments of Japan & the United Kingdom, and for the Digital Financial Services Nepal Project, funded by the Government of the Republic of Korea, which was carried out jointly with NRB for the improvement of financial inclusion and strengthening digital financial services ecosystem.

Maha Prasad Adhikari

Governor,
Nepal Rastra Bank

Acknowledgements

This Progress of Digital Financial Services in Nepal Report 2024 was prepared by the World Bank Group with support from MSC (MicroSave Consulting) under the Access to Financial Services Nepal Project and Digital Financial Services Nepal Project, jointly implemented by Nepal Rastra Bank (NRB) and the World Bank Group. The team from the World Bank Group included Ashim Nepal, Nilima Chhabilal Ramteke, Sheirin Iravantchi, Rathnija Arandara, Suvekshya Bhandari Subedi, Ojashwi Sharma, Seetashma Thapa, Diiwash Dhakal and Suprima Ghatani. The team gratefully acknowledges the guidance of Martin Holtmann, Gregory Smith, Harish Natarajan, Babacar Sedikh Faye and Nirmal Dahal, also of the World Bank Group, in preparing the report.

The team would also like to express its gratitude to the teams of the Payment Systems Department, the Office of Governor and the Provincial Offices of Nepal Rastra Bank for their contribution in the report and to the NRB for their cooperation and collaboration during the preparation and completion of this report. The team is grateful to all the stakeholders who were interviewed during the preparation of the report, as well as Nepal Bankers' Association and Nepal Clearing House Limited for their support. The team gratefully acknowledges the generous financial support of the Government of Japan and the United Kingdom for the Access to Financial Services Nepal Project, and the Government of the Republic of Korea for the Digital Financial Services Nepal Project.

Table of contents

About IFC	iii
Governor's message	iv
Acknowledgements	vi
Table of contents	vii
List of tables	viii
List of figures	ix
Abbreviations and acronyms	x
Executive summary	xiii
1. Introduction	19
1.1 Background	19
1.2 Objectives of the study	19
1.3 Methodology	20
2. DFS growth trends in Nepal	23
2.1 Background	23
2.2 Key players in DFS	23
3. Overview of regulatory progress of the NRB	43
3.1 Key regulatory milestones of the NRB	43
3.2 Key regulatory interventions needed	50
3.3 Support from the development partner community	53
3.4 DFS Regulatory Progress Nepal and Neighboring Countries	55
4. Sectoral impact of DFS	57
4.1 The NRB's sectoral impact	57
5. Strategic recommendations	65
6. Annexes	71
Annex A: Overview of Nepal's financial sector	71
1. Banking sector	72
2. Non-banking financial institutions	73
Annex B: DFS products	74
Annex C: Major policies of the NRB related to DFS	76
Annex E: Best practice cases from Asia	87

List of tables

TABLE 1.1: PROVINCIAL DISTRIBUTION OF KEY INFORMANT INTERVIEW AND FOCUS GROUP PARTICIPANTS	21
TABLE 2.1: VARIOUS DFS PROVIDERS IN NEPAL	24
TABLE 2.2. IBFT LIMITS AND MAXIMUM CHARGES IN NEPAL	31
TABLE 3.1: CATEGORIES OF LICENSE FOR PSOS AND PSPS AND MINIMUM-CAPITAL REQUIREMENTS	44
TABLE 3.2 FEATURES OF THE DFS ECOSYSTEM IN BANGLADESH, INDIA, NEPAL AND VIET NAM	55
TABLE A.1: POPULATION PER BRANCH SERVED BY FINANCIAL INSTITUTIONS AS OF MID-APRIL 2024 (THE NRB, 2024)	72
TABLE A.2: POPULATION PER BRANCH SERVED BY A, B, AND C CLASS FINANCIAL INSTITUTIONS	73

List of figures

FIGURE 1.1: ANALYTICAL FRAMEWORK OF THE STUDY	20
FIGURE 2.1: COMPARISON OF THE PERCENTAGE OF TRANSACTION ACCOUNTS ACROSS SELECT ASIAN COUNTRIES AND REGIONS	28
FIGURE 2.2: NUMBER OF USERS OF MOBILE BANKING, INTERNET BANKING, DEBIT CARDS, AND CREDIT CARDS IN NEPAL, 2015-2023.	31
FIGURE 2.3: MADE OR RECEIVED DIGITAL PAYMENTS (PERCENT)	33
FIGURE 2.4: NUMBER OF WALLET USERS IN NEPAL (IN MILLIONS) SOURCE: THE NRB (COMPILATION OF ANNUAL PAYMENT SYSTEMS OVERSIGHT REPORT)	34
FIGURE 2.5: QR CODE VOLUME AND VALUE FIGURES IN NEPAL	35
FIGURE 2.6: RPS (CONNECTIPS) VOLUME AND VALUE FIGURES	37
FIGURE 2.7: TRANSACTION VOLUME BY GENDER	37
FIGURE 2.8: TRANSACTION VALUE AND VOLUME IN NEPAL BY AGE, FY 2022-23	38
FIGURE 2.9: TRANSACTION VOLUME BY PAYMENT SYSTEM, NEPAL, FY 2020-23	39

Abbreviations and acronyms

ADB	Asian Development Bank
AML	Anti-Money Laundering
API	Application Programming Interface
APR	Annualized percent rate
ASEAN	Association of Southeast Asian Nations
ATM	Automated teller machine
BFI	Bank and financial institution
BFP-B	Business Finance for the Poor- Bangladesh
CAGR	Compounded annual growth rate
CBDC	Central Bank Digital Currency
CFT	Combating the financing of terrorism
CSD	Central Securities Depository
DFS	Digital financial services
DNAP	Digital Nepal Acceleration Project
DNF	Digital Nepal Framework
DPDPA	Digital Personal Data Protection Act
DPI	Digital Public Infrastructure
EAC	East African Community
ECC	Electronic Cheque Clearing
ECOWAS	Economic Community of West African States
EMV	Europay, MasterCard, and Visa
EPF	Employee Provident Fund
EU	European Union
FAN	FinTech Alliance Nepal
FAO	Food and Agriculture Organization
FGD	Focus group discussions
FI	Financial Institution
FLDG	First loss default guarantee
FPO	Follow-on public offer
FSDC-SC	Financial Stability and Development Council - Sub Committee
FSP	Financial service provider
FY	Financial year

GB	Gigabyte
GDP	Gross Domestic Product
GDPR	General Data Protection Regulation
GON	Government of Nepal
IBA	Indian Banks Association
IBFT	Interbank Fund Transfer
IDTP	Interoperable Digital Transaction Platform
IFC	International Finance Corporation
ILF	Intraday Liquidity Facility
INR	Indian Rupee
IPO	Initial public offering
IPS	Interbank Payment System
IT	Information technology
IVR	Interactive voice response
KFS	Key fact statement
KII	Key informant interview
KYC	Know your customer
LDC	Least developed country
LMI	Low- and moderate-income
LSP	Loan service provider
MAP	Making Access to Financial Services Possible
MFI	Microfinance institution
MFS	Mobile financial services
MNO	Mobile network operator
MSME	Micro, small, and medium enterprise
MTO	Money Transfer Operator
NAPAS	National Payment Corporation of Viet Nam
NBFC	Nonbanking financial institution
NBFI	Nonbanking finance company
NCFE	National Centre for Financial Education
NCHL	Nepal Clearing House Limited
NFC	Near field communication
NGO	Nongovernment organization
NID	National ID
NIPL	NPCI International
NOC	No objection certificate
NPC	National Payments Council
NPCI	National Payments Corporation of India
NPI	National Payments Interface
NPR	Nepali Rupees

NPS	National Payment Switch
NPSDS	National Payment Systems Development Strategy
NRB	Nepal Rashtra Bank
NSFE	National Strategy for Financial Education
NTA	Nepal Telecommunication Authority
OLF	Overnight liquidity facility
PAC	Policy Advisory Committee
PAPSS	Pan-African Payment and Settlement System
PIDF	Payments Infrastructure Development Fund
POS	Point of sale
PPP	Purchasing power parity
PSB	Public sector bank
PSD	Payment System Department
PSO	Payment service operator
PSP	Payment service provider
RBI	Reserve Bank of India
RFFO	Regulatory FinTech Facilitation Office
RPS	Retail Payment Switch
RTGS	Real-time Gross Settlement
SADC	Southern African Development Community
SBV	State Bank of Viet Nam
SDG	Sustainable Development Goals
SEACEN	South East Asian Central Banks
SEPA	Single Euro Payments Area
SIDBI	Small Industries Development Bank of India
SIM	Subscriber Identity Module
SME	Small and Medium Enterprise
SML	Sistema de Pagos en Moneda Local
SRO	Self-regulatory organization
SSF	Social Security Fund
UEMOA	West African Economic and Monetary Union
UI	User interface
UNCDF	United Nations Capital Development Fund
UX	User experience
UPI	Unified Payments Interface
USAID	United States Agency for International Development
USD	United States Dollar
VPA	Virtual Payment Address
WFID	Women's Financial Inclusion Data Partnership

Executive summary

The NRB's role in developing digital financial services

There are significant aspirations for improving the well-being of the population in Nepal, driven by the rapid transformation of its financial sector. The fast-growing economy has a population of 31 million, a median age of 24.4 years, an adult per-capita income of USD 8,062 (purchasing power parity), and anticipated GDP growth of 4.3 percent in FY 2023/24. In the past 10 years, Nepal's GDP has experienced growth of almost 200 percent, increasing from NPR 1.96 trillion (USD 14.8 billion) in FY 2013/14 to NPR 5.8 trillion (USD 43.8 billion) in FY 2022/23.

During this period, Nepal's financial sector witnessed positive developments as it moved from conventional, manual transactions to a technology-infused financial landscape. This development opened the space for digital financial services (DFS). The Nepal Rastra Bank (NRB) has been the driving force behind the development of DFS and has consistently led the country's transformation.

The NRB laid the foundation for DFS

The NRB committed to the Maya Declaration on August 2023¹ across four areas: promoting financial literacy, conducting rural credit surveys, formulating financial sector development strategies, and launching mobile money services. In November 2023, the NRB presented

the Financial Sector Development Strategy for Inclusive Growth at the 49th South East Asian Central Banks (SEACEN) Governors' Conference. The strategy focused on providing inclusive growth to all segments of Nepal's population to enable equal economic opportunities and equitable growth. It sought to provide inclusive finance to everyone by offering need-based products with appealing features delivered through suitable channels. Although the document does not explicitly mention digital financial services, the NRB laid the groundwork for the concept in 2013 and started issuing licenses for payment service operators (PSOs) and payment service providers (PSPs) in 2016 as per the Licensing Policy for Payment-related Institutions/Mechanisms of the same year.

The Global Findex Database revealed that 61 percent of adults worldwide had a transaction account in 2014², while the figure in Nepal was 33.8 percent. In 2017, the NRB, with support from the UNCDF MAP, prepared the Nepal Financial Inclusion Action Plan. The Action Plan outlined goals for increasing access to affordable financial services across Nepal.

The Findex numbers reflect the implementation of this roadmap. In 2021, the share of adults with an account worldwide was 76 percent, while Nepal stood at 54 percent, of which 49.9 percent of women had an account.

¹ [Nepal Rastra Bank makes Maya Declaration commitment](#), AFI

² The World Bank defines "account" as "The percentage of respondents who report having an account (by themselves or together with someone else) at a bank or another type of financial institution or report personally using a mobile money service in the past year." Global Findex Database, accessed 7 July, 2024.

The Nepal Financial Inclusion Report 2023 shows that bank account ownership increased further to around 81 percent as of 2022. These encouraging numbers have helped lay the foundation for DFS.

Foundational policies for DFS

NRB developed key policies and frameworks over the years to strengthen the foundation for DFS in Nepal.

- In 2014, the NRB formulated the [National Payment System Development Strategy](#) as a comprehensive roadmap to modernize the country's payment system. This strategy also discussed the development of the National Payment Switch.
- In 2015, the NRB established the Payments System Department to give focused attention to payment systems, groundwork for which was laid down in 2014 through the National Payment Development Strategy.
- In 2018, the NRB published the [Payment System Oversight Framework](#), which emphasizes safety, operational reliability and efficiency for prompt processing of payment transactions.
- With support from the World Bank Group, the NRB released the [Retail Payments Strategy](#) in 2019 to create an enabling framework to develop digital payment services and ensure their widespread use in Nepal.
- Other policy developments include:
 - Payment and Settlement Act, 2019
 - Real-time Gross Settlement System Rules, 2019
 - Payment and Settlement Bylaw, 2020 (amended 2023)
 - Digital Lending Framework, 2021
 - Nepal QR Standardization Framework and Guidelines, 2021

- Payment System Oversight Manual, 2021
- Payment System Inspection and Supervision Bylaws, 2021
- Cyber Resilience Guidelines, 2023
- Procedure for Onsite Inspection of Payment-related Activities of Banks and Financial Institutions, 2024

Deepening DFS use

DFS plays a vital role in deepening financial inclusion, which is among the NRB's vital mandates. The achievement of complete financial inclusion in the traditional mode has proved difficult for a country whose development is challenged by hilly terrain and mountains. The Government of Nepal has recognized financial inclusion as a vital pillar for national economic growth under its Financial Sector Development Strategy 2017-2022.

The NRB has been working to enhance access to quality financial services and their use at the individual level. It focuses explicitly on driving the financial inclusion agenda. To this effect, the Office of the Governor has a dedicated Financial Inclusion and Consumer Protection Division.

Drivers of DFS in Nepal

Alongside the NRB's proactive policies, a few key factors have helped DFS grow in the country:

Smartphone and internet penetration

The increase in smartphones, computers, and access to the internet plays a crucial role in DFS adoption. As per the recent National Population and Housing Census 2021³ conducted by the Government of Nepal, out of 6.66 million households, 73 percent have access to smartphones, 15 percent have access to computers or laptops, and 38 percent have access to broadband internet.

As per a Nepal Telecommunication Authority report⁴, Nepal's population penetration of

³ [National Population and Housing Census 2021](#), National Statistics Office

⁴ [Telecommunication Indicators \(June 15-July 15, 2024\)](#), Issue:186, Volume:236, Nepal Telecommunications Authority

voice service is 124.22 percent, and population penetration of broadband service is 149.23 percent (numbers exceeding 100 percent indicate multiple subscriptions per person, business use, or inactive SIMs still being counted). The Nepal Financial Inclusion Report 2023 reveals that 95 percent of the population accesses the internet using mobile phones. The cost of connectivity has also dropped significantly, from USD 2.25 per gigabyte in 2019 to USD 0.46 per gigabyte in 2023. Though these are encouraging numbers, there remains room for growth.

Changing preferences for digital services

Nepal is a young nation, with a median age of 24.4 years. Though the population is predominantly rural, most respondents of this study showed willingness and capability toward DFS adoption. They adapted swiftly during challenging times like the COVID-19 pandemic, embracing the advantages of DFS.

The case of customers, such as Sujata Thapa (see page 49), a woman entrepreneur from Makwanpur, is inspirational. Thapa embarked on her business journey in 2022 and opened a small shop with financial help from a local microfinance institution. This opportunity emerged after she received comprehensive digital financial literacy training that equipped her with the skills to manage her finances and use digital tools effectively.

The NRB's role is critical in cases like Thapa's, where financial literacy enables the use of DFS. The NRB formulated the Financial Literacy Framework 2020 as a guiding principle of financial education activities. The framework seeks to facilitate financial literacy activities through licensed banks and financial institutions.

In 2022, the NRB launched a campaign under its Financial Literacy Framework to promote financial awareness. The campaign sought to educate communities and small businesses about banking institutions, nonbanking institutions, and digital FinTech platforms to improve financial access. Additionally, the NRB issued the Financial Literacy Guidelines (2022), the Financial Inclusion Policy (2024),

and the Financial Inclusion Roadmap (2030) to standardize financial literacy programs and reporting formats for banking financial institutions. Such policies have benefitted people like Sujata and increased their confidence in using DFS products and channels.

The COVID-19 pandemic

Pandemic challenges tested the NRB and the entire DFS ecosystem. As in other nations, the crisis expedited the uptake of DFS in Nepal. Digital payments nearly doubled from NPR 2.8 trillion (USD 20 billion) in mid-June to mid-July 2020 to NPR 5.3 trillion (USD 39 billion) in the same period in 2021. This growth continued, with payments increasing by 18 percent year-on-year to reach NPR 6.2 trillion (USD 47 billion) from mid-June to mid-July 2022.

The demand for contactless payments and remote banking underscored the need for a strong digital framework. The NRB acknowledges this transition and has taken steps to create an enabling environment for digital advancements and establish regulatory structures that promote expansion, protect consumer interests, and maintain the financial system's stability.

The NRB's preparedness in the DFS space helped millions of small businesses switch to digital acceptance. One example of a small business owner who embraced digital payments to sustain her business during the pandemic is Bijayata Koirala, and entrepreneur in Butwal (see page 41). When Koirala started to accept digital payments, she could serve more customers while protecting herself. Koirala has become an ardent admirer of digital payments. For Koirala and millions of others, the NRB's digital lifelines saved their small business from becoming a casualty of the pandemic.

Retail payment instruments have led to steady growth of DFS in Nepal

Nepal has experienced many innovations in DFS after the COVID-19 pandemic. The NRB has supported the industry in the introduction of new retail payment instruments that have transformed how people transact and manage their banking activities. Quick

Response (QR) codes, connectIPS (Instant Payment System), cardless withdrawal, smart point-of-sale (POS), contactless cards based on near-field communication technology, and virtual cards are all part of this digital transformation.

IPS and connectIPS growth

The NRB's annual Payment Oversight Reports from FY 2020/21 and FY 2022/23 state that the volume of transactions through instant payment platforms, such as connectIPS and Fonepay Direct, risen exponentially, especially in the wake of COVID-19. IPS transactions increased from a mere 0.5 million in FY 2016/17 to 21.5 million in FY 2023/24, a 44-fold increase growth. Similarly, connectIPS transactions have increased from 0.2 million in FY 2018/19 to 16.6 million in FY 2023/24, which is a 97-fold increase.

Simple QR codes hold great appeal

The volume of retail payment initiatives, such as QR code-based payments, has also increased significantly. As per the Payments Oversight report, the QR code transaction value increased from NPR 94.5 billion (USD 0.7 billion) in FY 2021/22 to NPR 245 billion (USD 1.8 billion) in FY 2022/23. The study suggests that QR codes' simplicity and security have made them a preferred choice for consumers.

The story of retail shop owner Pooja Khatri Chudali (see page 41-42) highlights the evolving landscape of DFS in her locality. Chudali adopted digital wallets and QR codes to enhance customer convenience and make her business operations more efficient.

Countries like India and Bangladesh offer interoperable QR codes to facilitate easy acceptance from any wallet or bank account. While the NRB will also move toward full interoperability of QR codes in the near future, for now, QR codes will also help build digital transaction histories for merchants, so they can secure loans from banks and financial institutions.

Digital wallets are game changers

Digital wallets and mobile banking, in particular, have proved to be transformational,

allowing people to access banking services anytime and anywhere. This shift has improved customer convenience and enabled financial institutions to enhance their operational efficiency and reduce costs. The drivers of this largely have been smartphone penetration and internet connectivity. Both changes have DFS adoption.

After the COVID-19 pandemic began, digital wallet adoption skyrocketed in Nepal. Wallet users grew from 6.2 million in mid-August 2020 to 18.9 million in mid-July 2023. The volume of payments made through digital wallets grew from 124.9 million transactions in FY 2020/21 to 213.3 million transactions in FY 2022/23. The versatility of digital wallets for peer-to-peer transfers, utility bill payments, and online purchases has made them integral to the modern financial ecosystem. E-commerce sites integrate digital wallets, which help customers pay with ease. By linking mobile wallets with a bank account, customers can deposit or withdraw funds and pay for services instantly.

Digital wallets have become an instrument of change for nano and micro-women-led businesses, such as that of resort owner Sabita (see page 34). She recognized the growing preference among her guests for digital payments and seamlessly integrated these options into her resort's payment system.

As of mid-June 2024, the NRB has licensed 35 payment institutions, with 26 designated as payment service providers (PSPs) and nine as payment service operators (PSOs), excluding BFIs.

Card payments show a steady growth

The use of both debit and credit cards has also grown. Debit card issuance numbers increased from 5.5 million in July 2018 to 12.2 million in July 2023. The year 2020 saw a drop due to COVID-19 restrictions. Over the same period, credit card issuances went up from 105,000 to 284,000. Issuance numbers remain low, as many customers are now using e-wallets for digital transactions.

Most retail payment instruments have benefited key sectors, such as agriculture, dairy, IT, MSMEs, education, health, migrants,

and FinTech. Across the board, Nepalese customers now enjoy faster payments, increased transparency, increased access to financial services, cheaper transaction costs, and reduced cash dependence.

The advent of retail payment channels has profoundly impacted the MSME sector. With 923,000 establishments, MSMEs contribute to about 22 percent of Nepal's GDP. The NRB's retail payment solutions have revolutionized how MSMEs access capital and manage cash flows. MSMEs have benefitted from simplified access to capital, easier acceptance of payments from customers and payments to suppliers, and maintenance of a transaction history.

The NRB continues to support DFS innovation

The NRB understands the need for continuous innovation. Reasons why continuous innovation is imperative include:

- **Enhanced customer experience:** Innovation can create accessible, convenient banking and financial transactions.
- **Financial inclusion:** Innovation can bring digital technologies to underserved and unbanked populations.
- **Cost efficiency:** Lower costs are a key factor in DFS uptake. Innovation can reduce costs.
- **Security and fraud prevention:** DFS adoption brings new fraud and risk. These can degrade the customer experience if not dealt with effectively.
- **Data confidentiality and consumer protection:** Innovators also look for data confidentiality and consumer protection for continuous and responsive innovation

The NRB has been actively innovating with several initiatives, as outlined below.

Cross-border remittances

Cross-border remittances are pivotal to Nepal's economy and account for 25 percent of Nepal's GDP. Most Nepalese migrant workers

find employment in countries such as India, Malaysia, and Saudi Arabia.

A significant development occurred in this regard on June 2023, when the Nepal Clearing House Limited (NCHL) and the National Payments Corporation of India (NPCI) signed a memorandum of understanding. This agreement is anticipated to revolutionize Nepal's cross-border digital financial services connectivity. The project's initial phase, which includes person-to-person transfers, is expected to begin shortly.

Other service providers are expected to introduce their own cross-border payment solutions. The NRB and the Reserve Bank of India signed a regulatory term of reference in February 2024 to facilitate the integration of Nepal's National Payments Interface with India's Unified Payments Interface. Currently, Indian travelers can use their own payment systems, such as Google Pay or PhonePe, to pay merchants in Nepal who have Fonepay or Khalti QR codes. This service was launched with Fonepay and Khalti in partnership with NPCI International Payments Ltd in late February 2024. As of mid-July 2024, QR-based payments by Indian travelers have reached NPR 321 million (~USD 2.4 million). UPI transactions are presently being processed through Fonepay's network in Nepal, with the implementation of the issuing side expected in the near future.

In collaboration with Xuno, NCHL and IME Pay have started a request to pay solution. This enables beneficiaries in Nepal to send a request to a remitter in the USA and receive real-time remittances in their designated bank account in Nepal.

Retail payments switch

The advancement of digital public infrastructure is a key focus for Nepal's central bank. The initial phase of the NPS, the Retail Payment Switch (RPS), is already operational. The RPS enables non-card-based transaction interoperability for the routing and settlement of transactions and the establishment of NEPALPAY QR. The NPS's second phase is currently underway. It involves the rollout of the national NEPALPAY card.

Central Bank Digital Currency

The NRB took a critical step to introduce the Central Bank Digital Currency (CBDC) in Nepal. In August 2022, a concept report, "[CBDC: Identifying Appropriate Policy Goals and Design for Nepal](#)," was released. The report reviewed digital currencies launched by central banks worldwide, explored the need for a CBDC for Nepal, and discussed design choices suited to the country. A dedicated CBDC division within the Payment Systems Department is already functional, which seeks to accomplish a CBDC pilot by 2026 as per the NRB's Strategic Plan 2022-26.

The CBDC will complement Nepal's existing legal tender. Its phased introduction will consider Nepal's economic conditions, technological capabilities, regulatory framework, and public preferences.

Digital banks

The NRB is exploring regulatory frameworks to enable the establishment of fully digital banks. This initiative seeks to reduce the costs associated with traditional bricks-and-mortar banks, enhance customer convenience, and promote financial inclusion. A study is underway to assess this initiative's feasibility, prerequisites, and suitable modalities. The development of the necessary legal frameworks and institutional arrangements is also in progress.

Digital lending

Digital lending has been gaining traction in most developing markets. It can potentially provide low-income segments and small businesses with greater access to credit. The NRB has introduced the guideline to provide clarity to innovators and financial institutions.

Regulatory sandbox

The NRB plans to establish a regulatory sandbox and innovation center to encourage innovation in the financial sector and provide a controlled environment to test new financial products, services, or business models.

The NRB has been actively collaborating to

revolutionize the country's financial landscape and usher it into the modern age. Most of the NRB's initiatives are built on comprehensive studies, stakeholder consultations, and end-customer interaction with a vision for a cash-lite society.

Digital financial education

The NRB prioritizes digital financial education. It has established relevant frameworks and guidelines and instructed banks and financial institutions to allocate funds for corporate social responsibility to support this cause.

The NRB's efforts include community-based literacy initiatives, "training-of-trainers" programs, and partnerships to integrate financial education into school curricula. Furthermore, the NRB actively regulates the fees for digital services, advocates for cost-effective tools, and enforces stringent market conduct oversight and complaint resolution procedures to protect consumers.

The path forward

The NRB continues to boost Nepal's resilience and flexibility as it transitions into the digital era of financial services. Nepal is poised to use technology to create a more inclusive, effective, and secure financial environment for everyone. However, the way forward is fraught with obstacles. The NRB must continue to nurture innovation to achieve this vision.

The digital transformation of financial services is a challenging, exciting prospect. The NRB is dedicated to steering through this terrain with careful judgement, fostering creativity, enhancing accessibility, and maintaining the robustness of Nepal's financial frameworks. Ultimately, the NRB envisions a future where Nepal emerges as a digitally interconnected and financially participative country within the broader South Asia region.

1. Introduction

1.1 Background

Nepal's financial landscape has undergone a remarkable transformation over the past decade, particularly in the provision of digital financial services. The introduction of the National Payment Systems Development Strategy (NPSDS) by the NRB in 2014 kick-started a decade of transformation in Nepal's digital payments landscape. This strategy, which was formulated to "develop a secure, healthy, and efficient payment system" provides a comprehensive approach to Nepal's digital payments journey. The core pillars of the NPSDS have laid the groundwork for the evolution of digital payments in Nepal. These include legal frameworks, retail payments, international remittances, and interbank transactions.

Subsequent initiatives, such as the Digital Nepal Framework of 2019 and the Retail Payments Strategy of 2019, complemented the NPSDS and contributed to the evolution of Nepal's digital payments space. During the pandemic, the use of alternative payment methods over cash markedly expedited the adoption of digital payments. The need for contactless transactions during the pandemic accelerated the adoption of digital payment solutions, which made financial transactions more accessible, convenient, and secure for the population. A comparison of numbers across the final month of the fiscal years FY 2019/20 and FY 2021/22 shows that digital payments increased 125 percent from NPR 2.8 trillion (USD 21 billion) to NPR 6.2 trillion (USD 47 billion).

As of mid-June 2024, 35 institutions are licensed as payment institutions in Nepal, with 26 of

these institutions designated as payment service providers (PSPs) and nine as payment service operators (PSOs). PSPs facilitate payment processing, manage merchant accounts, offer payment gateway services, and provide subscription billing. PSOs, on the other hand, manage settlement processes, facilitate interbank clearing, oversee payment infrastructure, and manage risks. Additionally, all 20 of Nepal's commercial banks, 17 development banks, 15 finance companies, and 11 microfinance institutions have obtained the license to operate as PSPs from the NRB, which signifies a unified commitment to advance digital financial services in the country.

1.2 Objectives of the study

IFC commissioned a study to track the progress of digital financial services in Nepal under the NRB's aegis. This study highlights how the NRB has played a catalytic role in deepening digital financial services in Nepal. The study also investigates customers' experiences with DFS products and services and highlights use cases that drive DFS adoption. In addition, the study analyzes the progress of DFS data points since 2014, using publicly available data to evaluate its market impact. The study also identifies global best practices in DFS with a particular focus on payment systems from developing markets, such as India, Bangladesh, and Viet Nam. It discusses the innovations supported by the NRB and financial inclusion players to foster a vibrant DFS ecosystem in the country. As a final step, the study provides practical policy recommendations to help the NRB and other stakeholders to

further review the enabling policy environment to address the market demand for DFS. The report showcases various success stories of entrepreneurs who have adopted DFS products and services.

1.3 Methodology

Research design

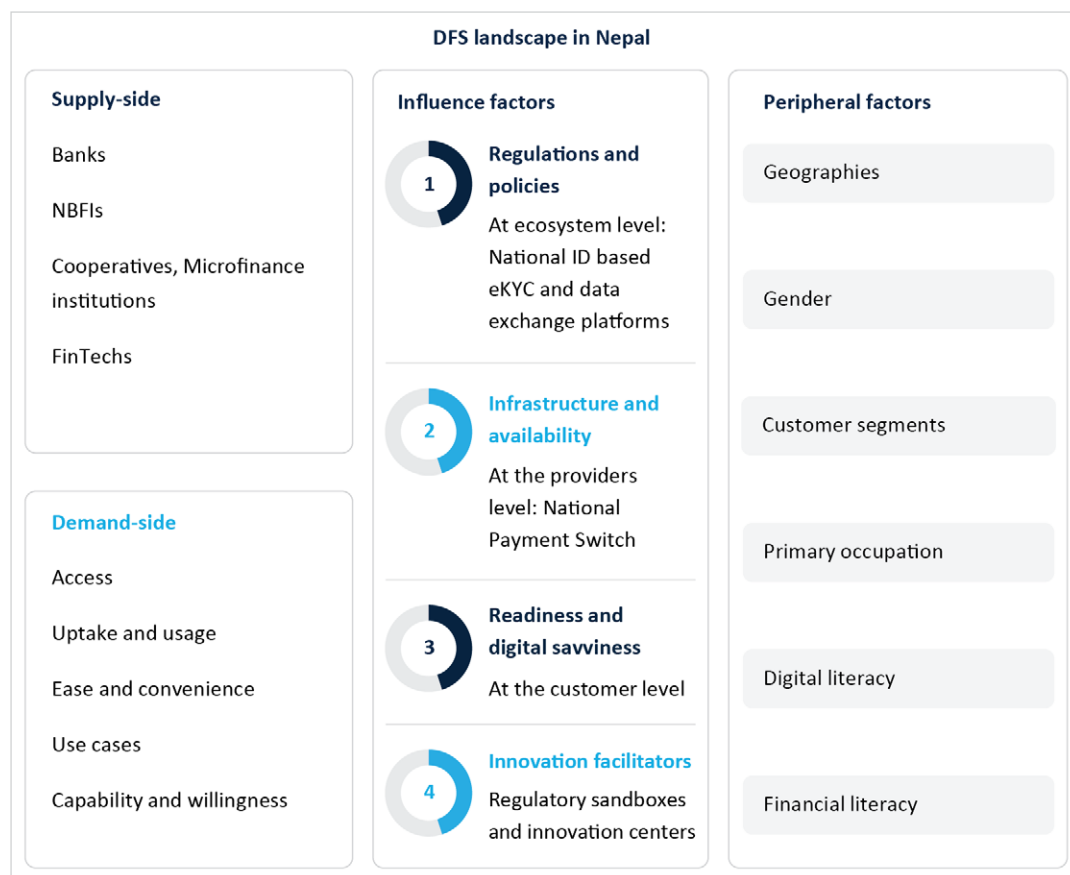
This study examined the progress of Nepal's DFS ecosystem under the guidance of the NRB and its forward-looking policies. It sought to answer key research questions about the supply and demand sides of DFS in Nepal.

a. Supply side: The focus of the supply-side analysis is to understand the DFS supply-side players' views on the NRB's policies. These supply-side players include banks, non-bank financial institutions, cooperatives, microfinance institutions, and FinTechs. The analysis covers the key recommendations from these players to improve the DFS ecosystem in Nepal.

b. Demand side as viewed by providers: The study focused on understanding the demand side of DFS as viewed by supply-side providers. It tried to capture the change in customers' behavior over the past ten years, when the NRB had begun its focus on DFS. Through customer case studies, the study seeks to understand the impact of DFS products and services in customers' lives.

c. Influence factors: This study delves into understanding how the NRB's regulations foster a vibrant DFS ecosystem in Nepal. It analyzes the policies and guidelines built by the NRB over the past 10 years that have led to a steady uptake of DFS across different sections of society. The study also comprehensively analyzes the DFS landscape in Nepal and evaluates pre- and post-COVID-19 scenarios. It examines DFS providers' perspectives and challenges related to the NRB's policies and assesses strategies, such as the NPSDS and the RPS, to enhance the DFS ecosystem.

FIGURE 1.1: ANALYTICAL FRAMEWORK OF THE STUDY



These DFS providers include banks, FinTech firms, and microfinance institutions. The study also comments on the infrastructure readiness that has impacted the growth of DFS in Nepal.

This study investigates the NRB's role and perspectives in promoting DFS, examining its vision for Nepal, management of DFS providers, views on system stability, and the evolution of DFS after 2014, especially after the establishment of the Payment Systems Department. It includes feedback from stakeholders, such as banks and FinTech companies.

Additionally, the study looks at similar initiatives in India, Bangladesh, and Viet Nam to identify best practices and lessons learned.

d. Peripheral factors: The study delves into understanding the various peripheral factors which influenced the uptake of DFS in Nepal. Besides the NRB's forward-looking policies, these factors include demographics, digital literacy, geography, and the occupation of end-customers. These other factors have resulted in the differentiated success of DFS uptake across different sectors, such as agriculture, dairy, education, and MSME, among others.

The data for this study was gathered through a combination of secondary research, key informant interviews with the supply-side players and focus group discussions with key stakeholders conducted in all seven provinces of Nepal.

1. Secondary research:

Secondary research formed the foundation of this study. It involved reviewing existing literature, reports, and relevant publications. This phase sought to gather background information on DFS policies, market trends, regulatory frameworks, and technological advancements in Nepal. Secondary research provided the contextual backdrop against which primary data collection could be analyzed and interpreted.

95 individuals participated in key informant interviews and focus group discussions.

TABLE 1.1: PROVINCIAL DISTRIBUTION OF KEY INFORMANT INTERVIEW AND FOCUS GROUP PARTICIPANTS

Province	Number of participants
Koshi	14
Madhesh	15
Bagmati	11
Gandaki	24
Lumbini	17
Karnali	6
Sudurpaschim	8

2. Key informant interviews:

The study included interviews with key stakeholders, who were identified based on their involvement and roles in the ecosystem. Participants included officials from bank and financial institutions, FinTech companies, industry associations, as well as selected experts in DFS and financial inclusion. The focus of the interviews was to obtain in-depth perspectives on regulatory policies, operational challenges, innovations, and future directions for DFS. The interviews provided valuable insights from authoritative sources, which complemented the findings from focused group discussions and secondary research.

3. Focus group discussions:

Focus group discussions were held across all seven provinces of Nepal. The discussions captured insights from diverse stakeholders, including representatives from commercial banks, development banks, microfinance institutions, and FinTech companies. These discussions were structured to explore opinions on the NRB's policies, challenges faced in the implementation of DFS initiatives, recommendations for improvement, successes, and innovations in the sector, and

DFS's impact on end-users. The focus groups facilitated interactive exchanges that enriched the qualitative data collection process.

In-person discussions were conducted in Gandaki, Lumbini, and Madhesh, while online meetings were used in Karnali, Sudurpaschim, and Koshi provinces.

The study also included interactions with various types of entrepreneurs to gain insights into customer-side issues. They represented enterprises across diverse sectors, such as art galleries, grocery stores, food processing industries, agro-packaging, farms, restaurants, bakery shops, resorts, beauty parlors, training centers, medical shops, salons, and boutiques.



2. DFS growth trends in Nepal

2.1 Background

Nepal's DFS ecosystem has undergone a significant transformation over the past decade, a process that was accelerated by COVID-19. The pandemic-driven need for contactless transactions accelerated the adoption of digital payment solutions. The NRB had already recognized the need for a shift toward digitization before the pandemic but seized the opportunity to push digital transformation further. The central bank was pivotal to this transformation as it implemented flexible policies and regulations and actively engaged in constant consultations with stakeholders.

The integration of technology into financial services has revolutionized banking in Nepal and made it more accessible, convenient, and efficient for the country's population.

This chapter delves into the critical components of the DFS ecosystem, identifies the major providers that drive this transformation, and explores the prevailing market trends that shape the future of digital finance in Nepal. This section also covers the progress made by three neighboring South Asian countries: India, Bangladesh, and Viet Nam. Each of these countries saw increasing digital financial activity in parallel with Nepal. India, Bangladesh and Viet Nam have also witnessed remarkable innovation and growth in their DFS ecosystems. All these economies have populations with low median age who are keen on utilizing DFS products and services.

Comparing key indicators on the use of DFS products and services provides a clearer understanding of Nepal's position relative to its peers and highlights areas requiring targeted interventions. This comparative analysis serves as a critical foundation for regulators to formulate new policies, set priorities to enhance Nepal's DFS sector further, and thus foster greater financial inclusion and economic development.

2.2 Key players in DFS

Nepal's DFS ecosystem includes a diverse array of stakeholders—regulatory bodies, financial institutions, development organizations, FinTech companies, and consumers. These institutions play various roles to shape the ecosystem and drive its evolution.

Of the nine payment service operators (PSOs) in Nepal, only Union Pay, Visa, and Mastercard operate international card switches.

TABLE 2.1: VARIOUS DFS PROVIDERS IN NEPAL

Type of institution	Stakeholder	Roles and responsibilities
PSP/PSO	Payment service providers	Facilitate digital payments, remittances, and fund transfers through various channels, which include digital wallets and payment gateways
	Payment system operators	Facilitate the operation and management of payment systems, networks, and infrastructure and ensure seamless and secure digital transactions
Financial institutions	Commercial banks	Offer a wide range of digital banking services, including mobile banking, internet banking, and digital payment solutions
	Development banks, finance institutions, and microfinance institutions	Cater to the financial needs of underserved populations and use DFS to deliver services efficiently

The largest PSO in terms of paid-up capital is Nepal Clearing House Ltd. (NCHL). It is a public limited company with equity participation from the NRB, commercial banks, development banks, and finance companies. The NCHL was established in 2008 under the NRB's leadership and guidance to establish payments, clearing, and settlement systems in Nepal. It currently operates the Electronic Cheque Clearing (NCHL-ECC), the Interbank Payment System (NCHL-IPS), the Retail Payment Switch, connectIPS, CORPORATEPAY, and the National Payment Interface. It is also mandated to create a National Payment Switch infrastructure through which all domestic and cross-border electronic transactions will be routed. The first phase of the project was launched in November 2021 and includes the formation of the Retail Payment Switch. In the second phase, the company will launch a national card-switching system. In the third and final phase, all domestic electronic transactions will be routed through the National Payment Switch, including cross-border transactions. Banks in Nepal now offer various services through their mobile and internet banking applications. These services include fund transfers, statement views, and debit or credit card requests and blocking. Additionally, customers can access digital loans, open fixed deposit accounts, make utility payments, and request cheque books.

Payment service providers (PSPs) offer different services to customers, such as mobile wallets, QR-based payments, online banking platforms, and instant payments that include bill payments, ticket bookings, remittances, government revenue payments, and capital market payments. These services are also provided by banks and other financial institutions through mobile and internet banking services.

The other category of providers is payment service operators, which provide infrastructure-level services critical for DFS. These include clearing and settlement services, payment gateways, automated clearing house facilities, and card and payment processing.

Box 2.1. Case 1: Rita's path to financial independence through DFS

In the evolving landscape of digital finance in Nepal, Rita Koirala's journey exemplifies the transformative impact of digital financial literacy on women entrepreneurs. Initially challenged by language barriers and manual financial management, Koirala later discovered that mobile banking and digital payments could revolutionize her business operations and financial management practices.

Rita Koirala, a young woman entrepreneur, never imagined that she could manage her finances so easily with just a tap on her phone. Koirala, who is educated up to the primary level, initially struggled with mobile apps because most of the information was in English. However, after she received some training, she could use mobile banking apps with ease. The training enabled her to understand the basics of digital transactions and empowered her to navigate through various mobile banking features easily.

Along with a group of local women, Koirala started a small business making materials for noodles and pickles in Dakshinkali Municipality. Initially, Koirala struggled to handle the business finances as it involved the physical handling of cash, frequent trips to the bank, and manual record-keeping. However, the switch to online cash transactions brought about a significant transformation. Koirala's group adopted mobile banking for their business operations, simplifying transactions and providing a secure and efficient way to manage their finances.

Koirala's new business is thriving while using digital payments. Customers can pay directly through mobile banking apps, and suppliers can receive payments instantly without the hassle of cash exchanges. This digital shift has streamlined their operations and allowed them to focus more on production and less on financial logistics. "I am so relieved I do not have to carry cash anymore," Koirala says, smiling. The conversation highlighted how digital financial services have lightened her load. The convenience of digital payments has reduced the risk of carrying cash and the potential for errors in manual handling. This transition to a digital payment system has improved their financial management and enhanced their confidence in handling business transactions, which has contributed to their venture's overall success and growth.

With the support of digital financial services, Rita Koirala and her business partners have expanded their customer base beyond the local community and reached a broader market. This has led to increased sales and better profitability. The entrepreneurial journey of Rita Koirala and her group is a testament to how digital literacy and financial inclusion can empower women, drive economic growth, and foster sustainable development in local communities.

2.3 Usage of DFS and its enablers

Consumers across Nepal have increasingly started adopting DFS for their daily transactions. The convenience of mobile banking and digital wallets has made them popular choices for various financial transactions, from the payment of utility bills to in-store purchases. QR codes for payments have seen a surge as they enable quick and seamless transactions with minimal physical contact. This is especially true in urban areas with higher smartphone and internet penetration. The increased digital financial literacy among the population through various campaigns of the NRB and commercial banks has also further increased DFS adoption among consumers.

When we compare Nepal's digital payment system data with those of other countries, population size serves as a crucial comparison point. Nepal has a small population of approximately 30 million. It experienced a 37.6 percent increase in digital payment volume from 675 million in FY 2021 to 928 million in FY 2022. However, the value of these payments decreased by 13 percent, declining from USD 447 billion to USD 388 billion over the same period⁵.

In contrast, India, with a large population exceeding 1.4 billion, saw a significant surge in digital payment volumes, rising from 72 billion in FY 2021 to 164 billion in FY 2023, which marked a growth of 128 percent. The value of digital payments in India increased from USD 21,012 billion to USD 29,255 billion, a 39 percent rise. Similarly, Bangladesh, with a population of about 170 million, experienced a 58 percent increase in digital payment volume from 4 billion to 6.3 billion, and the value grew from USD 519 billion to USD 993 billion, a 91 percent increase. With a population of around 100 million, Viet Nam showed robust growth as well, with digital payment volumes expanding from 4 billion to 11.3 billion—a 182 percent increase. The value of these payments in Viet Nam rose from USD 6,546 billion to USD 8,752 billion, an increase of 34 percent.

Despite Nepal's smaller population, its growth in digital payment volume is notable. The reduction in the average transaction value indicates that people have started to use digital payments for small-value transactions. This change suggests that more people are using digital transactions for smaller, everyday transactions, which shows how DFS is becoming more accessible and widely used in Nepal.

Over the years, the adoption of digital payments in Nepal has also improved significantly. Index data shows that the percentage of individuals aged 15 and above who make or receive digital payments increased from 9.9 percent in 2014 to 28.6 percent in 2021, which is a 190 percent increase. This indicates that while Nepal is on a positive trajectory, it still needs to catch up with global and regional leaders in digital payment adoption.

Gender disparities are evident, with women's usage rising from 7.7 percent in 2014 to 22.9 percent in 2021, which is an increase of 198 percent, while men's usage grew from 12.4 percent to 35 percent in the same period, which is a 183 percent increase. Overall, Nepal's progress in digital payments demonstrates a promising shift toward greater financial inclusion and connectivity.

Case study 1, which highlights the story of Rita Koirala's entrepreneurial experience, illustrates the pivotal role of digital financial services in enhancing operational efficiency, reducing financial risks, and expanding market reach for small businesses in Dakshinkali Municipality. Her success story underscores how digital literacy and financial inclusion empower women, foster economic growth, and promote sustainable development within local communities.

Interactions with key stakeholders point out four key enablers that have led to an increase in the uptake of DFS in Nepal. These enablers have facilitated the effective adoption of DFS in Nepal by women entrepreneurs. (See case studies on pages 25, 34, 41, 42 and 49).

Enabler 1: Digital infrastructure growth

The increase in smartphones, computers, and access to the internet has also played a crucial role in the adoption of digital banking services. As per the recent National Population and Housing Census 2021⁶ conducted by the government of Nepal, out of 6.7 million households, 73 percent have access to smartphones, 15 percent have access to computers or laptops, and 38 percent have access to broadband internet. This widespread access has increased the number of people who use mobile and internet banking. Nepal ranks fifth in the mobile connectivity index score⁷ in South Asia, and the

⁵ Compiled data from [Payment Oversight Report, 2022-23](#), Nepal Rastra Bank, Annex 6, page 45.

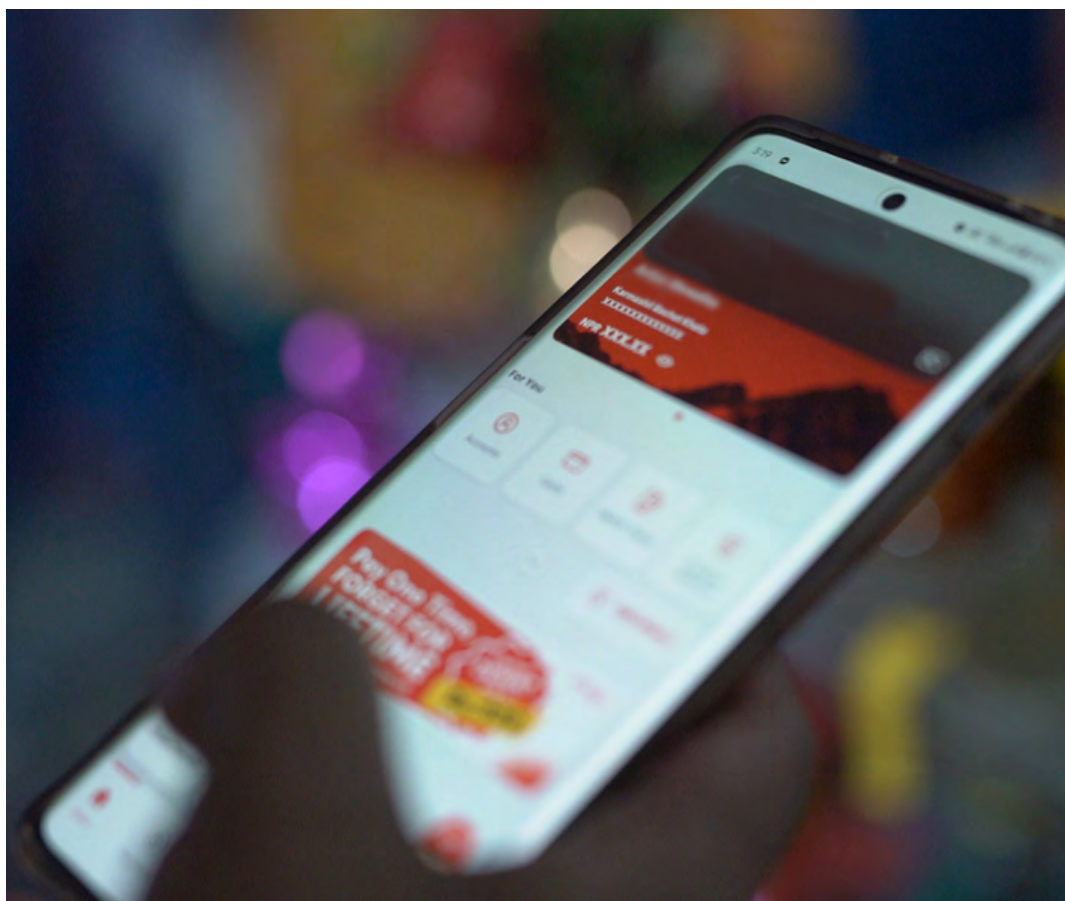
⁶ [National Population and Housing Census 2021](#), National Statistics Office.

⁷ Sourced from "[The State of Mobile Internet Connectivity](#)" report from GSMA.

score has improved in the past five years. India leads the region with a score of 61, while Bangladesh is sixth with a score of 51. Viet Nam is significantly ahead of other South Asian countries, with a score of 71. This index indicates mobile internet adoption in terms of infrastructure, affordability, consumer readiness, and content and services. This index indicates mobile internet adoption in terms of infrastructure, affordability, consumer readiness, and content and services.

Nepal's internet usage has seen a notable 35 percent increase from 2021 to reach 50 percent in 2024. However, it remains behind countries such as Viet Nam, which reached 79.1 percent by 2024. India also shows substantial growth, from 35 percent in 2017 to 52.4 percent in 2024 (a 49.7 percent increase). Globally, internet usage has risen from 50 percent in 2017 to 66.2 percent in 2024, while South Asia has grown from 33 percent to 51.5 percent in the same period. Despite this progress, Nepal's internet penetration needs to improve further to reach the levels seen in other regions, such as Southeastern Asia, where usage is expected to reach 71.5 percent by 2024.

These varying levels of digital access contribute to the differing rates of adoption and use of digital banking services across these countries.



MSC / Ankur Shrestha

Enabler 2: Rising transaction account ownership

Nepal has made significant progress in increasing transaction account ownership. The percentage of respondents who reported having an account either at a financial institution or through a mobile money service increased from 33.8 percent in 2014 to 81 percent⁸ in 2022, as per the IFC A2F 2021/22 survey. This significant achievement can be attributed to the push created by the NRB. When Nepal looks at the active usage of transaction accounts via DFS, transaction account ownership is a key metric. For Nepal, the key challenge will be getting access to transactional accounts for 100 percent of the population.

FIGURE 2.1: COMPARISON OF THE PERCENTAGE OF TRANSACTION ACCOUNTS ACROSS SELECT ASIAN COUNTRIES AND REGIONS



Source: Global Findex Database

⁸ Data for 2022 from IFC A2F 2021/22 Survey.

Despite this improvement, when we look at transactional account ownership, Nepal still lags behind other neighboring countries. India, for example, witnessed an increase from 53.1 percent to 77.5 percent. Other nearby countries in the region, such as Bangladesh and Viet Nam, also experienced growth in transactional account ownership. Overall account ownership in the East Asia and the Pacific region grew from 68.9 percent to 80.8 percent between 2014 and 2021.

Enabler 3: Pandemic-related behavioral shifts

The COVID-19 pandemic brought about a shift in the uptake of digital solutions, services, and platforms worldwide, and Nepal was part of that growth journey. The post-pandemic data of DFS in the NRB's Payments Oversight reports is evidence of the increase in the uptake and usage of digital solutions.

The COVID-19 pandemic significantly accelerated the adoption of digital payments in Nepal. The pandemic heightened concerns about the transmission of the virus through cash transactions. Before the pandemic, digital payment options were not widely used in Nepal. However, the pandemic lockdowns and restrictions on physical interactions forced consumers to explore digital wallets and mobile banking services. Many Nepalis turned to digital payment methods to reduce the perceived risk of infection from handling banknotes and coins. Digital payment platforms witnessed a large number of first-time users during this period. With physical stores closed or operating under restrictions, many consumers began to rely on e-commerce to purchase essentials. Payments Oversight report data indicates that transactions through digital platforms like QR codes and mobile wallets increased significantly during the pandemic.

This shift to digital transactions would not have been possible without the necessary support rails for growth, facilitated by the NRB's policies. The forward-looking National Payment System Development Strategy (NPSDS) of 2014 played a key role in driving digital payments and allied use cases among customers in Nepal. The NPSDS has set out to achieve increased financial inclusion through the creation of an enabling environment for mainstream players. This would allow the players to offer relevant use cases and use their outreach in urban and rural areas equally to channel access to formal financial services.

Interactions with a few banks in this study reveal that they have witnessed an increase in digital transaction volume from less than 50 percent before the pandemic to more than 80 percent after it. The debit card-based transaction volume grew by 61.4 percent between FY 2020/21 and FY 2022/23. Some of the select banks now have as many as 2 million active debit card users, with approximately 60 percent of their customers registered on mobile banking services. The data trends indicate potential growth in person-to-government (P2G) payments, such as traffic tickets and property registration payments, among other categories. Additionally, rural and remote areas present a strong business case for future development.

Enabler 4: Agents facilitate access and trust

In Nepal, agents have been pivotal in enhancing the accessibility and reach of DFS, particularly in rural and underserved regions. These agents, often local shopkeepers or trusted community members, serve as crucial intermediaries between formal financial institutions and the unbanked or underbanked population. Agents provide essential services, such as cash-in and cash-out transactions, account opening, and bill payments. Through their services, they have played a central role in facilitating the adoption of DFS in areas where traditional banking infrastructure is sparse or non-existent. Their intimate understanding of local contexts and personalized customer interactions have been instrumental in fostering trust and overcoming barriers related to literacy, technological familiarity, and cultural resistance to formal banking systems.

The role of agents in bridging the gap between financial institutions and remote populations has been significant. Agents use existing social networks and offer convenient, low-cost financial

services. They have effectively contributed to broader financial inclusion efforts, empowered local economies, and supported poverty alleviation initiatives by enabling access to savings, credit, and insurance products. The NRB's decision to remove the exclusivity clause for agents through [Circular 03/078/79](#) in February 2022 has further empowered agents and allowed them to diversify their partnerships and revenue streams, enhancing their role in the financial ecosystem.

However, the recent expansion of commercial banks into nearly all local levels of Nepal has led to a reduction in the reliance on agents. Commercial banks, with their enhanced security measures and broader array of services, have reduced the operational necessity for traditional agent networks in many regions. Despite this shift, evidence from interactions with microfinance institutions suggests that agents remain a vital component of the financial ecosystem. Microfinance institutions continue to recognize the value of agents, particularly for their role in maintaining a widespread and cost-effective outreach model, as well as supporting financial education and literacy initiatives. Moreover, agents affiliated with microfinance institutions often have longstanding relationships with these institutions, mitigating the risk of fraud and reinforcing their role as trusted facilitators of financial services.

As technological advancements and improvements in digital literacy continue to reshape the financial landscape, agents are likely to transition toward more sophisticated roles, including facilitating digital lending and investment products. Although the growth of commercial banks has changed how financial services are delivered in Nepal, agents are still crucial for enabling DFS. Their continued presence and adaptation are vital to ensuring that the benefits of DFS are distributed equitably across all communities, particularly in the most remote and underserved areas.

Enabler 5: Customer preference for digital payments

The transition to digital payments is driven by convenience and necessity. Consumers appreciate the ease of making payments without carrying cash, as well as their ability to track their spending digitally. The pandemic-induced need for contactless transactions has significantly influenced consumer behavior and pushed even those who were initially hesitant to adopt DFS.

Moreover, consumer demand for DFS has pressured merchants to adapt. When merchants are reluctant to offer digital payment options, persistent requests from consumers often compel them to incorporate QR standees and other digital payment methods into their operations. This dynamic has fostered a competitive environment where businesses must adopt DFS to meet consumer expectations and remain relevant.

Consumers show a strong preference for mobile banking and digital wallets over traditional banking methods. Mobile banking apps, in particular, are favored for their comprehensive service offerings, which include fund transfers, bill payments, account management, and even digital loans. The number of transactions through mobile banking more than doubled from 112 million in FY 2020/21 to 283 million in FY 2022/23. Similarly, the value of transactions increased from NPR 460 billion (USD 3.5 billion) to NPR 2,185 billion (USD 16.4 billion) across the same period. This remarkable growth of 375 percent occurred in only three years.

Nepal has seen growth across different retail payment channels. The NRB's role has been instrumental in fostering innovations and creating supporting policies to allow license institutions to help test, pilot, launch, and promote these payment instruments across Nepal. Mobile banking and internet banking have seen significant growth over the past few years. The increased use cases for digital wallets and the ease of loading them through bank accounts have translated to their active use by customers. The enabling policy by the NRB related to the issuance of QR-codes for retail payments has revolutionized how customers pay. ConnectIPS, IBFT, and QR code are instant payment systems that have also seen greater adoption after the pandemic. These modes bring in a low-cost and safe way of making payments.

1. Mobile banking and internet banking show robust growth

The growth in mobile banking, in particular, has been remarkable. A comparison of data across the years (Figure 3) shows that mobile banking has seen the highest increase in the number of customers among various digital banking services. From 2015 to 2023, the number of mobile banking users has grown by an astonishing 1,900 percent (CAGR of 45 percent). This exponential growth indicates the broader trend toward digital finance in Nepal, supported by the NRB's proactive policies and the population's increasing digital literacy.

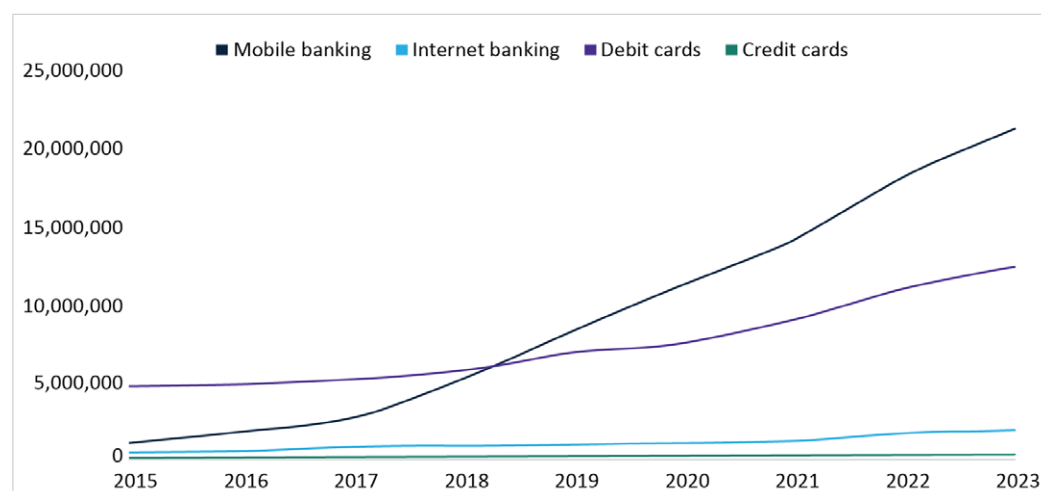
Mobile banking and internet banking have revolutionized Nepal's financial landscape as they enable customers to conduct various financial transactions through their mobile devices. This includes services, such as checking account balances, fund transfers, bill payments, and access to various banking products. Mobile banking can be particularly advantageous in rural and remote areas with limited access to physical bank branches. At present, 20 commercial banks, 17 development banks, 15 finance companies, and 11 microfinance institutions in Nepal offer mobile and internet banking platforms that ensure secure and efficient transactions for their users.

The extensive range of DFS offerings has significantly increased the use of mobile and internet banking among customers. Internet banking also has one significant advantage over mobile banking—it has higher limits set for transactions. As per the [Unified Directive of 2023](#) from the NRB, the daily limit for transactions and the maximum charges for Interbank Fund Transfer (IBFT) is set as follows:

TABLE 2.2. IBFT LIMITS AND MAXIMUM CHARGES IN NEPAL

	Daily limit	Maximum charges for IBFT
Mobile banking	NPR 300,000 (USD 2,250)	NPR 10 (USD 0.075)
QR codes	NPR 300,000 (USD 2,250)	NPR 10 (USD 0.075)
Internet banking	NPR 2,000,000 (USD 15,000)	NPR 10 (USD 0.075)

FIGURE 2.2: NUMBER OF USERS OF MOBILE BANKING, INTERNET BANKING, DEBIT CARDS, AND CREDIT CARDS IN NEPAL, 2015-2023.



Note: data for each year represents mid-July total. Source: The NRB (Compilation of Annual Reports)

2. Payments through digital wallets are the entry point to DFS

Digital wallets, also known as e-wallets, have become popular payment methods for quick and secure payments. These wallets store e-money and allow users to conduct transactions with smartphones and other digital devices. Popular digital wallets in Nepal include eSewa, Khalti, and IME Pay. These platforms enable users to pay for goods and services, transfer money, and even pay utility bills seamlessly. Most merchants, mainly in urban areas, accept payments readily through digital wallets, which facilitate cashless transactions and promote financial inclusion. These merchants include small retail shops, restaurants, and online businesses.

Wallets have played a key role in facilitating cashless transactions and promoting financial inclusion countrywide. Launched in 2009, eSewa, was the country's first digital wallet.

Currently, it has 8 million registered users, 250,000 agents, and 2,200 cash points. The eSewa digital wallet is accepted by 350,000 merchants and is integrated with more than 49 banks and 45 microfinance institutions.⁹ Similarly, the second largest digital wallet in Nepal, Khalti, has more than 4 million users, 76,000 merchants. There are 1.5 million *Khalti Pasals* (POS terminals) in Nepal, and the wallet processes more than 400,000 transactions daily.¹⁰ IME Pay is Nepal's third-largest digital wallet, with 35,000 agents, 3 million users and 1 million payout locations.¹¹ IME Pay is the only wallet in Nepal that offers interest. It focuses heavily on services for Nepal's migrant population. The number of wallet users has been increasing significantly over the years. Between August 2020, and July 2023, the number of digital wallet users in Nepal grew from 6.2 million to 18.9 million users, an increase of 201 percent.



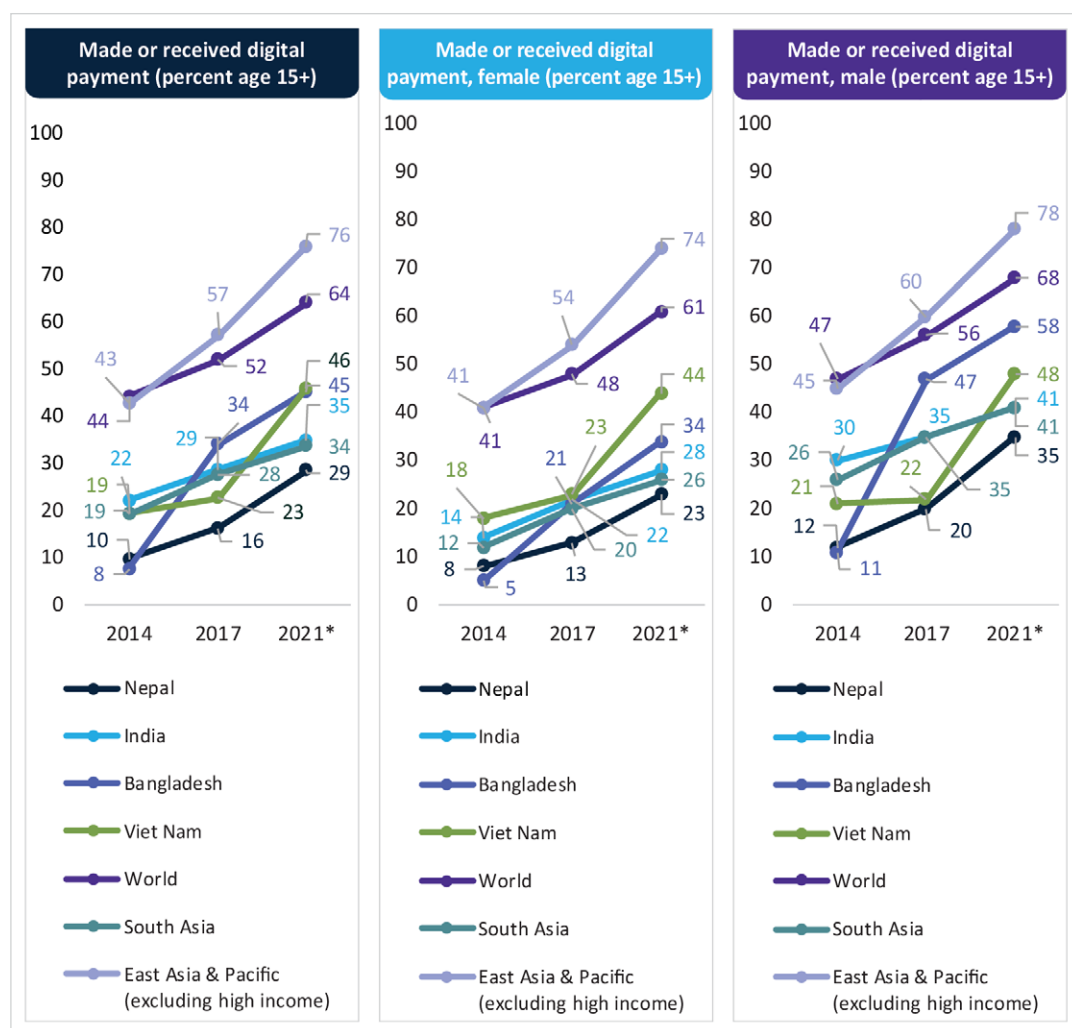
World Bank/Simone D. McCourtie

⁹ Retrieved from [eSewa blog](#)

¹⁰ Retrieved from [Khalti blog](#)

¹¹ Retrieved from the [IME Pay website](#)

FIGURE 2.3: MADE OR RECEIVED DIGITAL PAYMENTS (PERCENT)



Source: Global Findex Database

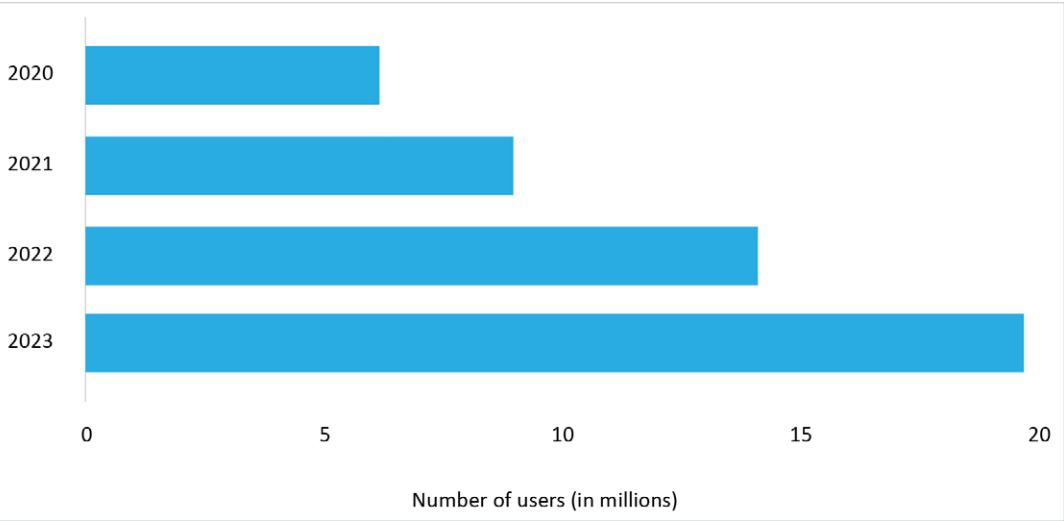
To varying degrees, digital wallets are popular in India, Bangladesh, and Viet Nam. In India, the Unified Payments Interface (UPI), which facilitates linking of various payment instruments including mobile wallets, has accelerated non-cash payments. As per the Findex database, only 10.4 percent of the population had mobile money wallet accounts in 2021.¹² These users like the superior customer experience and cash-back offers provided by wallets digital. Wallets have been useful in driving multiple use cases for customers, such as peer-to-peer (P2P), person-to-merchant (P2M) and person-to-government (P2G) and bill payments, travel bookings, and movie tickets.

In Viet Nam, digital wallets like MOMO, Zalo Pay and others, have been extremely popular with customers due to the UI/UX that they offer. Wallets have also been partnering with different financial institutions to offer financial products, such as digital credit, digital savings, and digital insurance. Due to a large, tech-savvy customer base these offerings are very popular.

Case study 2 (see below) provides an example of how embracing digital payments can streamline business processes, enhance customer experience, and contribute to social change. A resort owner's story illustrates the transformative potential of digital wallets and mobile banking, emphasizing their role in promoting financial inclusion and gender equality.

¹² Global Findex database

FIGURE 2.4: NUMBER OF WALLET USERS IN NEPAL (IN MILLIONS) SOURCE: THE NRB (COMPILATION OF ANNUAL PAYMENT SYSTEMS OVERSIGHT REPORT)



Source: The NRB (Compilation of annual Payment Systems Oversight Report)

Box 2.2 Case 2: Digital wallets: Instruments of change for women

Small and medium-sized enterprises can use digital financial tools to enhance operational efficiency and even contribute to societal change. This case study examines the innovative use of digital financial tools by Sabita, a resort owner, highlighting how digital wallets can drive both business success and women's empowerment.

Sabita runs a successful resort and has fully embraced digital wallets and mobile banking to enhance her business operations. She recognizes the growing preference among her guests for digital payments and has seamlessly integrated these options into her resort's payment system. Customers now enjoy the convenience and security of digital payments, whether they book rooms, dine, or use the resort's services. Sabita extends her use of digital payments beyond customer transactions. She uses her proficiency with digital payment tools to efficiently manage her business expenses through digital payments to her suppliers. She values the ease and cost-effectiveness of digital transactions, which are free of extra charges. Sabita favors simple, user-friendly QR codes over traditional point of sale (POS) machines to streamline her payment processes.

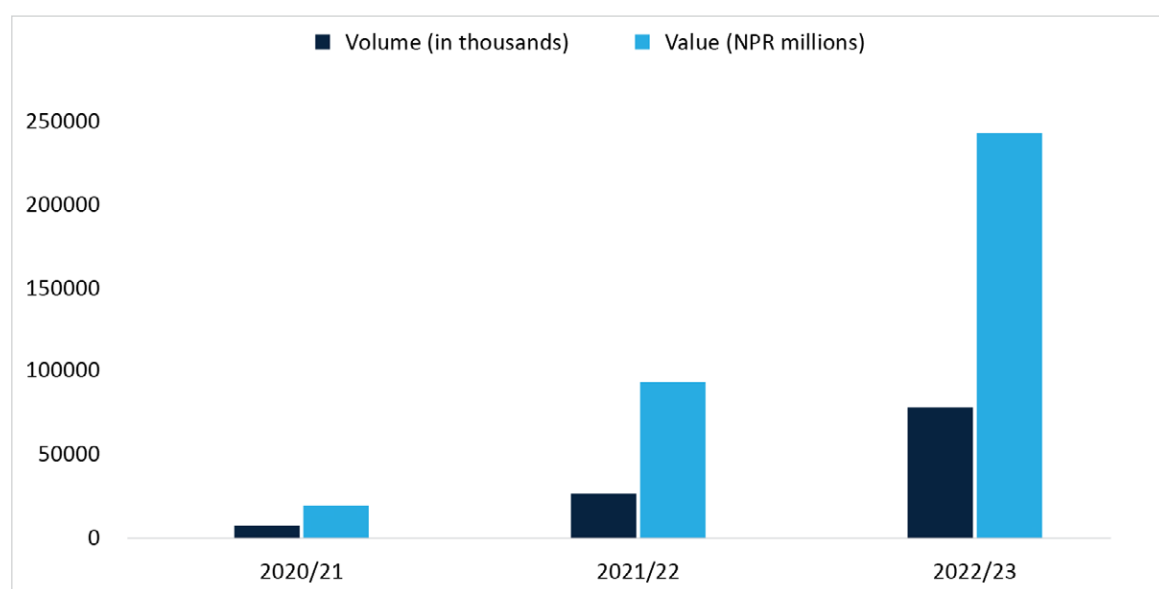
Beyond the operational benefits, Sabita sees digital wallets as a transformative tool for women. In a traditional patriarchal society, where men often dominate property ownership and financial control, digital wallets offer women a means to achieve financial independence. These platforms empower women to save and manage their money and provide them with greater financial autonomy. Sabita believes that digital wallets can significantly enhance women's household income. Women can contribute more effectively to their family's economic stability when they have control over their finances. This improves households' financial health and promotes gender equality, giving women a stronger voice and presence in financial matters.

Through her progressive approach, Sabita has modernized her resort business and continues to champion the broader societal benefits of digital financial services. Her efforts illustrate how technology can be used to empower individuals and drive positive change in traditionally structured communities.

3. QR codes are ubiquitous across different payment categories, specifically person-to-business (P2B) payments

As envisaged in the Retail Payment Strategy of 2019, QR code-based payment is one of the most important innovations from the NRB. Currently, five companies in Nepal offer QR code-based payment services through their respective mobile applications. QR code adoption in Nepal has surged dramatically since the COVID-19 pandemic. From FY 2020/21 to FY 2022/23, QR code transactions grew in value by a remarkable 1,110.1 percent.

FIGURE 2.5: QR CODE VOLUME AND VALUE FIGURES IN NEPAL



Source: The NRB (Compilation of Annual Payment Systems Oversight Report)

In 2023, Fonepay held a 99 percent market share in person-to-merchant (P2M) transactions in Nepal. Between 2019 and 2023, Fonepay processed QR transactions worth a total of NPR 471 billion (USD 3.5 billion). QR codes have emerged as the preferred customer payment instrument in the country. In 2021, the NRB introduced the Nepal QR Standardization Framework and Guidelines in 2021 to enhance interoperability, scalability, and security in QR payments. This framework outlines the eligibility criteria for QR code operation, the responsibilities of the program or network, acquirers, and issuers, as well as fees levied, settlement mechanisms, risk and compliance protocols, grievance resolution procedures, customer awareness initiatives, interoperability compliance, information security testing, and QR logo and branding guidelines.

The absence of charges for both merchants and customers is a key factor in merchants' preference for QR payments. This contrasts with POS machines, which impose a fee on merchants. Additionally, both banks and QR code-based payment providers have been pushing to register merchants for QR payments. Some banks have even kept targets to distribute QR codes.

The popularity of QR codes in India is evident from the numbers. As of March 2024, the country's number of POS terminals stood at 8.9 million, supporting a transaction volume of 296 million. Meanwhile, while the number of QR stickers stood at 346 million, which supported a transaction volume of 8.3 billion. From March 2022 to March 2024, POS deployment in India grew by 48.3 percent, from 6 million to 8.9 million. In the same period, QR sticker deployment grew by 101.2 percent, from 172 million to 346 million stickers.

Between FY 2020/21 and FY 2022/23, POS transactions in India grew by 63 percent. In comparison, QR-code-based transactions grew by a remarkable 1,298 percent. Volume-wise, POS transactions stand at 12.3 million versus QR transactions, which are 78 million as of FY 2022/23.

In India, Bharat QR (or Interoperable QR) is a new innovation in QR codes, which has significantly propelled India's rapid digitization. In partnership with MasterCard and Visa, the National Payments Corporation of India (NPCI) has developed the world's first interoperable QR code acceptance solution. It has been helping the country transition to digital payments, with codes connecting hundreds of millions of users within an instant payment system that is now available countrywide. Interoperable QR payments are the reason why any customer can walk up to a roadside tea stall and pay for their refreshments with their phone. As of April 2024, approximately 6.1 million Bharat QR codes have been deployed in India.

Bangladesh also launched its interoperable QR, known as Bangla QR, in January 2024. Bangla QR is still in its pilot phase, but already shows the importance of interoperable QR codes in digital economies.

While this supply-side push has increased the presence of QR codes across small and large merchant outlets in Nepal, QR payments' simplicity, ease, and convenience have led to an increased customer uptake. The preference for QR codes has increased due to multiple acceptance points, relevant use cases for customers, ease of onboarding and usage, and increased affinity to digital solutions, alongside enabling infrastructure, such as affordable smartphones and economical mobile internet data.

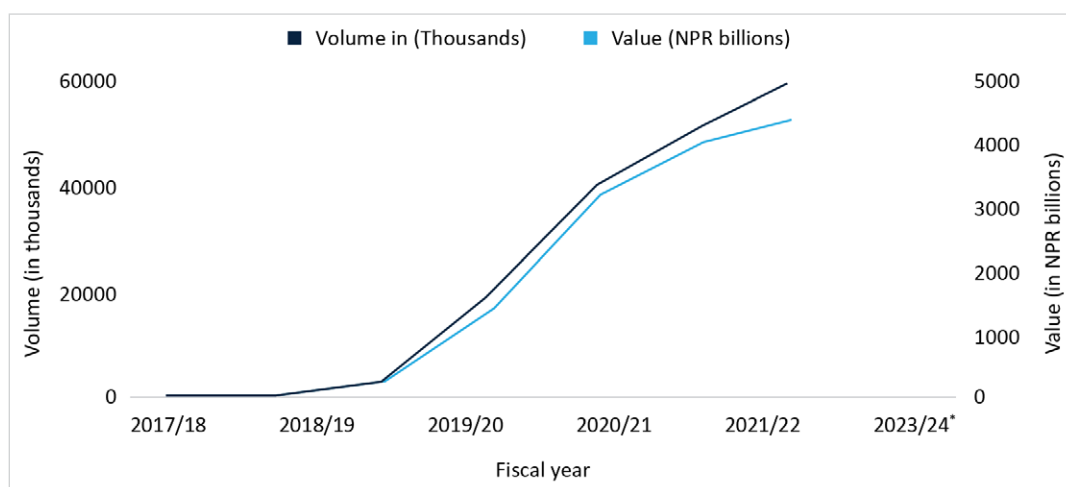
Banks and FinTech companies have been using transaction data from QR codes and other digital channels to offer collateral-free digital loan products to merchants. The Digital Lending Guidelines of 2022 permit banks and financial institutions to provide digital loans of up to NPR 500,000 (~USD 3,750) for salaried and business account holders and loans of up to NPR 200,000 (~USD 1,500) for other customers. The maximum term for these loans is set at three years.

After these guidelines were released, various banks, including Laxmi Sunrise Bank, Nabil Bank, and NMB Bank, have been providing collateral-free digital loans to their QR merchants. IME Pay has also partnered with Global IME Bank to provide small collateral-free digital loans to migrants traveling to foreign employment. This strategic move by the NRB and financial institutions seeks to foster financial inclusion and support small businesses through easy access to credit. This will further solidify the role of QR code payments in Nepal's digital financial services ecosystem.

4. connectIPS

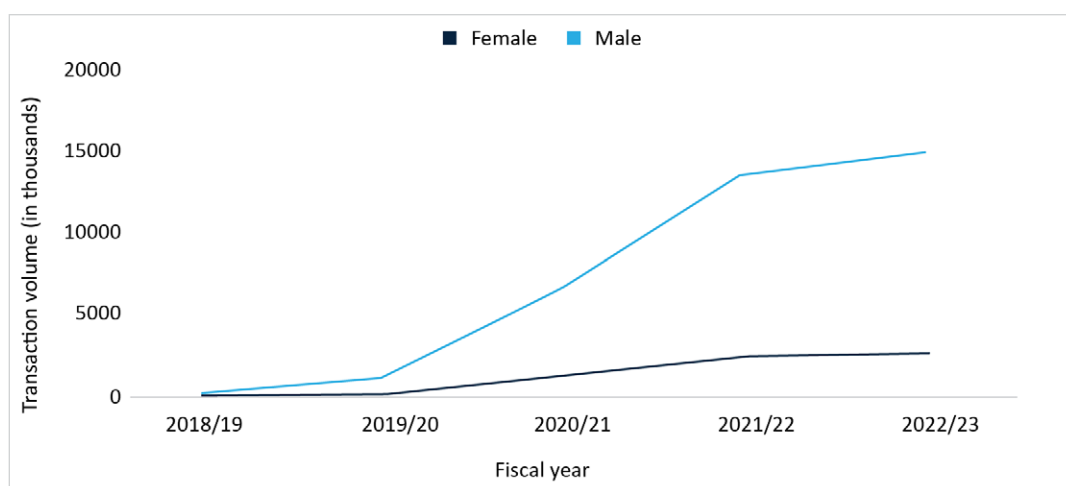
The NRB's focus on instant payments resulted in the launch of connectIPS, another widely used instant payment instrument. The single payment platform allows linkages to multiple bank accounts. The transaction limits of connectIPS vary slightly between wallets. The daily transaction limit per bank is up to NPR 2,000,000 (~USD 15,000) through web channels and NPR 300,000 (~USD 2,250) through the mobile app. Customers and businesses use it, particularly for high-value transactions. Businesses also use it to disburse salaries to their employees.

The volume and value of transactions through this system have been growing continuously. Before the pandemic, digital transactions had increased steadily, with moderate growth observed in both transaction volume and value. The necessity of contactless transactions during the pandemic led to an exponential increase in both transaction volume and value. Transactions through RPS (connectIPS) have grown from 186,000 transactions and NPR 4 billion volume in FY 2018/19 to 59.5 million transactions worth NPR 4,456 billion in FY 2023/24 as per the data up to mid-May 2024. The quick settlement time is a reason for its increased growth in both volume and value.

FIGURE 2.6: RPS (CONNECTIPS) VOLUME AND VALUE FIGURES

Source: NCHL

*The fiscal year 2023-24 data only includes figures up to mid-May 2024

FIGURE 2.7: TRANSACTION VOLUME BY GENDER

Source: NCHL

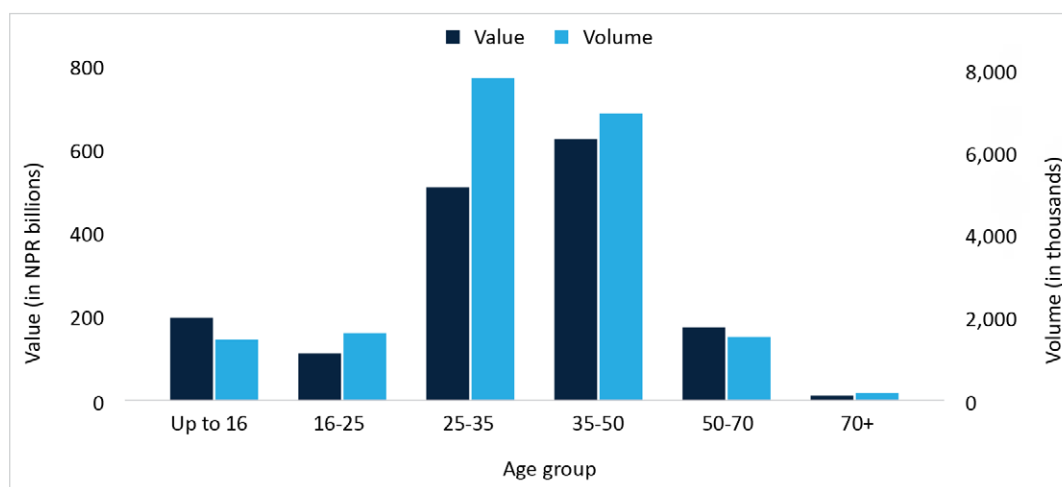
An analysis of the disaggregated data for RPS (connectIPS) reveals several important trends in transaction volumes and values across different demographics. While transactions by both men and women have continued to increase, men's transaction volumes and values consistently surpass those of women. This gender disparity underscores the importance of enhancing digital literacy and access for women to ensure more equitable participation in digital financial services.

As per the data received from NCHL, in FY 2022/23, users aged 25-35 recorded the highest transaction volume, with 7.8 million transactions, or about 40.2 percent of the total connectIPS volume. This age group appears to be connectIPS's most active user group, which likely reflects their comfort and familiarity with making digital transactions, mainly instant payments. On the other hand, the highest transaction value was observed among users aged 35-50, amounting to NPR 632.8 billion (USD 4.8 billion). This suggests that individuals in this age group conduct fewer, but higher-value transactions than the younger cohort.

The lowest transaction volumes and values were observed among individuals above age 70. This finding was not surprising, given the general unease and lack of familiarity with digital mediums among older populations. This highlights a potential area for targeted initiatives to improve digital literacy and confidence among senior citizens, enabling them to benefit from digital financial services.

Moreover, the data indicates that connectIPS is less popular among users above age 50, compared to the 25-50 age group. The lower adoption rates for users above 50 could be attributed to various factors, such as a lack of digital literacy, trust issues with digital financial services, or a preference for traditional banking methods.

FIGURE 2.8: TRANSACTION VALUE AND VOLUME IN NEPAL BY AGE, FY 2022-23



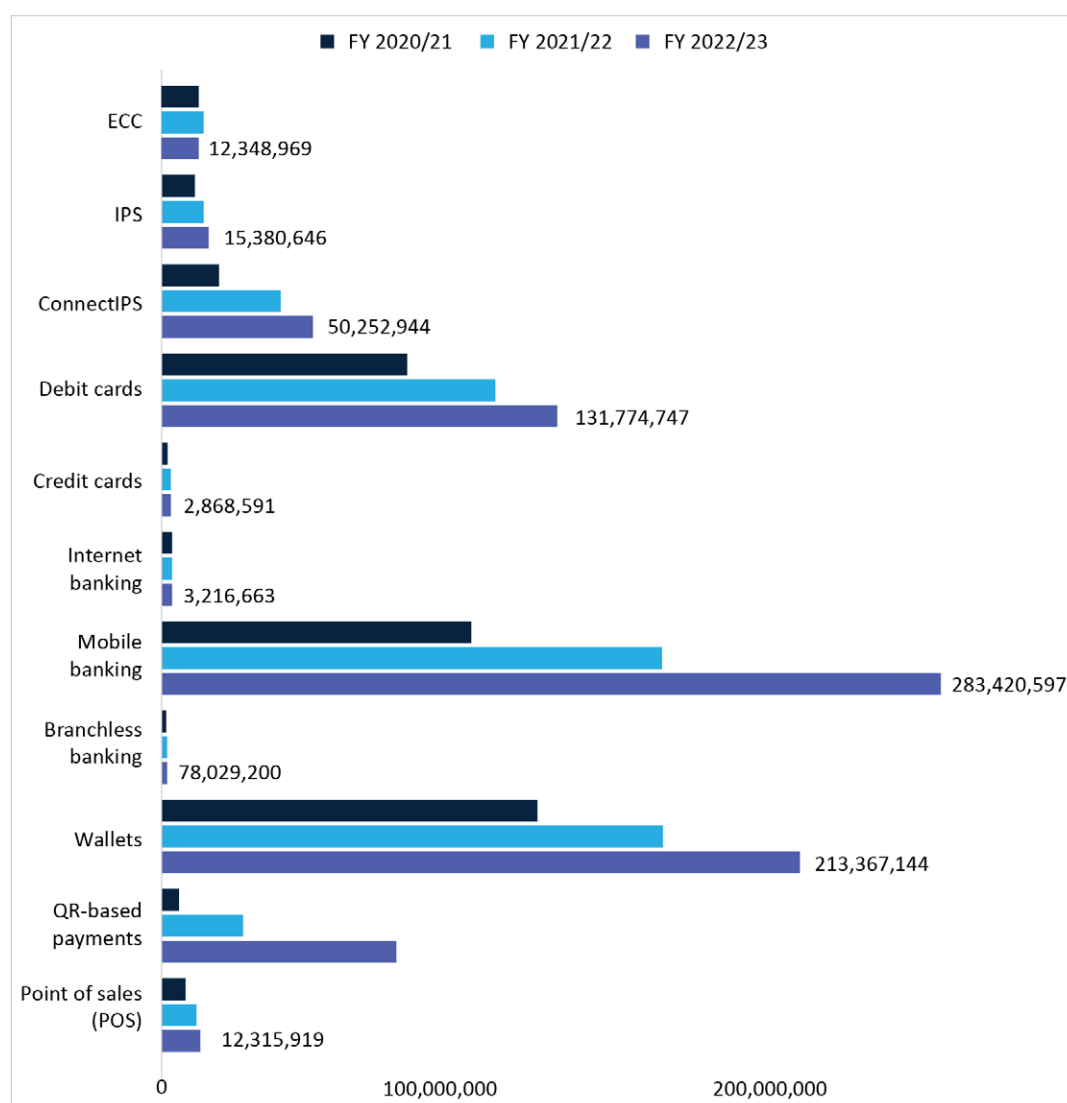
Source: NCHL

Raising awareness of the advantages of DFS in rural and remote areas would help providers increase their outreach to these areas. The use cases across person-to-business (P2B) transactions will increase when DFS payments add value for both the source (customer) and the destination (merchant or business). This value is much more than the mere ease of conducting transactions. Stakeholders also need to communicate the overall benefits of digital payments and how they will help customers access financial products, such as credit and insurance at better prices.

For example, QR code transactions are moving toward becoming ubiquitous in Nepal. However, their complete acceptance in the rural pockets and peri-urban regions is still a work in progress. Remaining barriers to adoption include uneven internet distribution, limited customer education initiatives that reach the challenging geographies, fear of fraud, limited smartphone availability, the focus of supply-side players on the easy-to-serve urban populace, and limited clarity of use cases for merchants.

However, a much better opportunity exists to increase payments through QR codes. It will require two-fold efforts in terms of: (i) relevant use cases: If the merchants and customers see the use of funds in their wallets or accounts at the payment points they frequent, it will lead to an increase in acceptance as well as an increase in pull transactions; (ii) evolving use cases as per customer needs across peer-to-peer (P2P), person-to-business (P2B), and person-to-government (P2G) categories.

Research during this study revealed that banks expect a digital payments boom in Nepal to take place soon. Technology infrastructure should be put in place to avoid transaction failures and encourage the growth of digital solutions.

FIGURE 2.9: TRANSACTION VOLUME BY PAYMENT SYSTEM, NEPAL, FY 2020-23

Source: Compiled from Payment Systems Oversight Reports, the NRB

2.4 Barriers to DFS usage

Barriers to adoption

Despite its growing popularity, several barriers to the adoption of DFS persist, particularly in rural areas. Interactions with both supply and demand-side players in this study reveal that these barriers are more pronounced in rural settings than urban areas.

Limited literacy

Customers in rural areas often have minimal digital literacy, which makes it challenging for them to navigate mobile banking apps and digital wallets. As per the [Baseline Survey on Financial Literacy in Nepal](#) conducted by the NRB in 2022, overall financial literacy stood at 57.9 percent. Only 27.5 percent of the adult population passed the minimum target score in all financial literacy components. Comparing the score across rural municipalities and metropolitan cities further highlights this divide. Rural municipalities score the lowest across this indicator among all the local levels. Only 23.5 percent passed minimum financial literacy scores in rural municipalities, while 43.1 percent passed

in metropolitan cities. Older adults, in particular, find these digital tools difficult to use. While eager to adopt digital payment methods, senior citizens are highly susceptible to scams and fraudulent activities, which can deter them from fully embracing DFS. The survey found that financial literacy and all its components have an inverse relation with age, formal education, and individuals working in the formal sector.

Moreover, field-level interactions with supply-side players have shown that even though apps are available in the Nepali language, the limited literacy levels combined with the lack of regional language options discourage rural customers from using digital payment methods. Many customers have reported difficulties navigating through the complex user interfaces of various apps. While app developers strive to customize their apps to offer unique features, these differentiations often pose challenges for less literate users who struggle when they switch from one app to another.

The cost of DFS usage

A major issue that interactions with demand-side players revealed was the cost associated with the use of DFS. Charges incurred by customers on bank-to-bank transfers and wallet-to-bank withdrawals are also a barrier to usage. These fees can discourage frequent use of digital payment methods, especially for those with lower incomes. Furthermore, trust in DFS decreases when users struggle with transaction failures, which may or may not be related to internet downtime. In rural areas, where word-of-mouth is powerful, the experience of one user's problems with transactions can significantly impact the trust and willingness of the entire community to adopt these services.

Risk of fraud

A major barrier to the adoption of DFS in Nepal is the risk of fraud associated with wallets and mobile banking channels. Interactions with users during the study consistently highlighted concerns over phishing attacks and fraudulent calls or messages. Often, limited digital literacy results in users inadvertently disclosing OTP codes to scammers, either due to false promises of lottery winnings or threats of financial loss, without first verifying the legitimacy of the request. These fraudulent activities compromise users' personal information and lead to unauthorized transactions. Additionally, counterfeit apps and websites that impersonate legitimate services further intensify these risks. Such security concerns not only erode user trust but also impede the broader acceptance of DFS.

Infrastructure challenges

Infrastructure challenges further exacerbate these barriers. The availability of 4G networks and the quality of data connectivity is still an issue in rural and even urban areas. While the latest [Nepal Telecommunication Authority \(NTA\) data](#) for mid-March to mid-April 2024 shows that 4G has reached 71 percent of the population, network connectivity issues continue to remain. As per NTA's latest [annual report of FY 2022/23](#), 40 percent of the complaints received in FY 2022/23 were related to issues with internet not working, decreased internet speed, and network issues. This hinders reliable access to online banking and payment services.

Innovation in solutions that do not require internet connectivity has yet to emerge in Nepal fully. These can include an interactive voice response number, app functionality in feature phones, a missed call-based approach, and proximity sound-based payments. The NDPC has implemented USD payment solutions in Nepal. However, the adoption of such a payment system remains minimal. The most used service through the system is mobile top-up with an average ticket size of NPR 62 (~USD 0.5).

Box 2.3 Case 3: The use of digital payments for business growth in Butwal

In the bustling town of Butwal, businesses are increasingly adopting digital financial services to enhance operational efficiency and customer experience. This case study delves into the entrepreneurial journey of Bijayata Koirala, owner of a thriving cafe and bakery, examining her strategic shift to digital payments during the COVID-19 pandemic.

Bijayata Koirala owns a thriving cafe and bakery in Butwal. Since the inception of her business, she has continually sought innovative ways to enhance her customer experience and streamline operations. One significant leap in her entrepreneurial journey was the adoption of digital payments, a move that dramatically expanded her customer base.

The transition to digital payments started during the COVID-19 pandemic. When widespread concerns mounted around cash transactions as a potential carrier of the virus, Koirala quickly pivoted to digital solutions. She registered herself as a merchant and started to use mobile banking and digital wallets exclusively for all transactions.

This strategic shift addressed immediate health concerns and brought long-term benefits to her business. Koirala discovered that digital payments made transactions quicker and more efficient, reduced customers' waiting time, and improved the overall service speed. Additionally, the transparency and traceability of digital transactions simplified her accounting and financial management.

Customers' preferences further validated her decision. She noticed a significant increase in customers who preferred to use mobile banking or digital wallets and appreciated the convenience and security these methods provided. This trend was particularly strong among the younger tech-savvy individuals who comprised a substantial portion of her clientele.

Embracing digital payments helped Koirala sustain her business during the pandemic, and continues to help position her bakery as a modern, customer-centric establishment. Koirala's experience underscores the critical role of digital payments in sustaining and growing small businesses, especially during challenging times. Her successful adoption of mobile banking and digital wallets highlights the benefits of quick, efficient transactions, improved financial management, and enhanced customer satisfaction. This case study exemplifies how digital financial services can position local businesses as modern and customer-centric establishments and foster economic resilience and innovation.

Box 2.4 Case 4: Shifting payment trends in Pooja Khatri Chudali's local retail shop

The adoption of digital financial services (DFS) is reshaping consumer behavior and business operations across Nepal. This case study explores the experiences of a proactive retail shop owner in adapting to and leveraging digital payment methods amid evolving customer preferences.

Pooja Khatri Chudali, a proactive retail shop owner, has witnessed a remarkable shift in payment methods among her customers thanks to the advent of DFS. Her shop, conveniently situated near a bustling college, attracts many young customers. These tech-savvy students prefer to use digital payments, even for small transactions as low as NPR 10. Pooja finds this shift intriguing, as it reflects the growing acceptance and convenience of digital payments among the younger generation.

The convenience offered by DFS has led to interesting scenarios in her shop. When students run out of cash, they often request cash-out services from Pooja. Although she is not an official agent of any digital wallet, she helps them by providing cash in exchange for digital payments. This informal service has strengthened her relationship with her customers, who appreciate her willingness to adapt to their needs.

Pooja has also noticed a significant change in the payment habits of older generations. Many elderly customers, who traditionally relied on cash, now prefer digital transactions. If they cannot make digital payments themselves, they call their family members to complete the transaction on their behalf. This shift highlights the widespread acceptance of DFS across different age groups.

In response to the growing demand for digital payments, Pooja started displaying a merchant QR code in her shop after the onset of COVID-19. This move facilitated easier payments for her customers and streamlined her business operations. She now prefers digital payments when she buys supplies, which she finds more efficient and secure.

Box 2.5 Case 5: Kamala Tamang extends her market reach

In the evolving landscape of digital commerce in Nepal, the adoption of e-commerce and digital finance is reshaping business strategies, particularly for small entrepreneurs. This case study examines the transformative journey of Kamala Tamang, a Kathmandu-based entrepreneur who enhanced her business significantly by using digital marketing and e-commerce initiatives.

Kamala Tamang used to sell her products only locally because she lacked awareness of digital marketing. However, her business underwent a significant transformation after an NGO trained her in e-commerce and digital finance. Previously, Kamala spent a considerable amount of time going around with visiting cards and phone numbers to market her products. This traditional method was time-consuming and limited her reach.

With the new knowledge gained from the training program, Kamala created a Facebook page for her business, which allowed customers to find her online easily. This shift saved her time and expanded her customer base. Kamala started to take high-quality pictures of her products and share them on Facebook and TikTok, and she used the vast reach of these platforms to attract more customers. She also started to take payments digitally to cater to her online customer base.

Through the training, Kamala learned ways to effectively use digital tools and platforms to market her products, manage orders, and engage with customers. Kamala expanded her market reach and streamlined her operations through digital methods. This made her business more efficient and profitable.

The impact of digital marketing was profound. Kamala started to receive orders from various parts of her district and was no longer confined to her locality. She embraced e-commerce further and started to use the Daraz platform to sell her products. This move significantly boosted her sales and allowed her business to grow beyond her initial expectations.

3. Overview of regulatory progress of the NRB

The NRB draws its legal powers from several laws and acts to expand, promote, monitor, regulate, inspect, and oversee Nepal's payment, settlement, and clearing systems. These laws and acts include the NRB Act of 2002, the Payment and Settlement Act of 2019, the Payment and Settlement Bylaw of 2020 (amended in 2023), the Payment System Oversight Manual of 2021, the Payment Systems Inspection and Supervision Bylaw of 2021, and the Procedure for Onsite Inspection of Payment-related Activities of Banks and Financial Institutions of 2024, among others. The NRB has been operating in accordance with these legislative frameworks.

This section describes the key milestones in the NRB's regulatory route since 2014 which led to the uptake of DFS in Nepal.

3.1 Key regulatory milestones of the NRB

Development of National Payment Systems Development Strategy

The introduction of the National Payment Systems Development Strategy (NPSDS) in 2014 laid the foundation of Nepal's digital financial services journey. This strategy was formulated to develop a secure, healthy, and efficient payment system. It provides a comprehensive approach to Nepal's digital payment journey. The core pillars of the NPSDS include legal frameworks, retail payments, international remittances, and interbank transactions. These pillars laid the groundwork for the evolution of digital payments in Nepal.

Introduction of the Payments System Department within the NRB

The strategic direction of the NPSDS led to the establishment of the Payments System Department (PSD), a significant milestone in the path to modernize Nepal's payment system. The PSD kicked off the process of issuing licenses to PSOs and PSPs, which have turned out to become significant players that have pushed DFS to the next level in Nepal.

In 2016, the NRB issued the Licensing Policy for Payment-related Institutions/Mechanisms, 2016, a licensing policy for payment service providers and operators (PSPs and PSOs). This licensing policy's scope covered all banks and financial institutions, as well as PSPs and PSOs that operate payment-related functions and their related instruments and transactions. The policy specifies the major requirements to obtain the license, functional areas for providing the license, provisions related to service charges and deposits, provisions related to license renewal, and rules and standards to operate as a PSP or PSO, among others.

Licensing of PSPs and PSOs

The licensing of PSPs and PSOs in Nepal has been pivotal in transforming the country's digital payment landscape. The licensing policy for PSPs and PSOs was originally unveiled in 2016. These guidelines established the framework for the licensing and operation of digital payment services in the country. The

Licensing Policy for Payment Related Institutions of 2023 (First Amendment, July 2023) specified the major requirements for companies to obtain the license and set the rules and standards to operate as a PSO or PSP. It also defined the functional areas for providing the license, provisions related to service charges and deposits, provisions related to paid-up capital, and provisions related to license renewal. The new policy increased paid-up capital requirements for the establishment of PSOs and PSPs. It also re-categorized PSOs and PSPs into four different categories. These changes ensured the financial stability of PSOs and PSPs, helped standardize operations, and enhanced the overall quality of service within the ecosystem.

TABLE 3.1: CATEGORIES OF LICENSE FOR PSOS AND PSPS AND MINIMUM-CAPITAL REQUIREMENTS

Nature of license		Minimum capital
PSP	Institution operating instruments other than payment card	50 million (USD 0.37 million) [Increased from 10 million (USD 0.075 million)]
	Institutions operating other instruments with payment card	250 million (USD 1.87 million) [Increased from 50 million (USD 0.37 million)]
PSO	-	400 million (USD 3 million) [Increased from 100 million (USD 0.75 million)]
	Institutions that operate transactions within and outside Nepal through payment instruments issued in Nepal	800 million (USD 6 million) [Combined two different categories and increased from 250 million (USD 1.87 million) and 300 million (USD 2.24 million)]

Source: Licensing Policy for Payment Related Institutions of 2023 (First Amendment, July 2023), the NRB

Drafting the Payments System Oversight Framework

In 2018, the NRB launched the Payment System Oversight Framework, which seeks to develop a secure, healthy, and efficient system of payments in Nepal. The framework assesses systems, participants, and instruments to ensure that they are sufficiently protected against risks. It also promotes the smooth, efficient, and safe flow of funds between individuals, businesses, and financial markets.

The years 2019-20 were pivotal for the NRB, as it made significant advancements in the DFS space and drove numerous developments forward. These developments included the launch of the Digital Nepal Framework, the Payment and Settlement Act, the Retail Payments Strategy, and the RTGS System Rules. 2019 also saw the launch of Fonepay, which has become a popular medium for digital payments.

In 2021, the NRB provided approval to the NCHL to operate the first phase of the RPS under the National Payment Switch. The first phase involved working on routing non-card transactions through the national payment switch. In the second phase, the company will work on the national card system, while in the third phase, all domestic electronic transactions will be routed through the national payment switch.

With these initiatives, physical banking has transformed into digital banking, and Nepal has gradually been marching toward a fully digital banking landscape.

QR-code standardization framework

The entry of QR-based payment systems enabled MSMEs to receive digital payments from their customers, alleviating some of the financial difficulties brought on by the pandemic. In 2021, the NRB developed the QR Standardization Framework and Guidelines and Payment Systems Oversight Manual to promote digital financial services further.

The NRB's Nepal QR Standardization and Framework Guidelines is also an important compliance mechanism that seeks to bring uniformity to the QR design issued by different institutions. The interoperability compliance that the NRB has set through this guideline will help democratize QR payments and make it easy for customers to pay through QR without the hassle of switching applications. The guidelines also cover fees and charges, settlement mechanisms, risk and compliance, and grievance handling and dispute resolution mechanisms associated with the use of QR. This is a crucial step to ensure consumer protection principles are followed. Additionally, it would help build trust among the customers who use the QR method of payment.

Box 3.1 Key developments in the first year of RTGS

Developments in 2019-20

- RTGS was officially launched in September 2019, initially for commercial banks and later for other participants.
- The NRB formulated the Retail Payment Strategy to develop a healthy, capable, and secure payment system. This strategy received support from IFC and focused on strengthening the legal and regulatory framework and deepening digital retail payment systems, government and remittance payments to transaction accounts, settlement in central bank money, and financial awareness.
- The NRB released the Payments and Settlement Bylaw of 2020 per the Payments and Settlement Act of 2019.
- The NRB considered the idea of creating a National Payment Switch through the NCHL. This switch was proposed as a way to provide a low-cost switching infrastructure within Nepal to route and settle retail transactions, which would ensure interoperability of card-based and non-card-based payments within the country. This would become an important milestone for pushing DFS in the country since the switch seeks to make transactions faster, more convenient, and cost-effective by reducing charges and providing real-time services and open banking APIs.

Sujata Thapa (see page 49) from Makwanpur has embraced QR codes, which have helped her streamline her transactions, improve operational efficiency, and expand her business reach. Millions of women entrepreneurs like Sujata Thapa have surged ahead in their entrepreneurial journeys thanks to the NRB's QR innovation.

In developing countries like India, Indonesia, Bangladesh, and Viet Nam, QR codes have emerged as the best mode to transact in a safe, secure, and fast manner. Countries like India have also moved toward interoperable QR codes, namely Bharat QR, while Bangladesh has also been working on a Bangla QR. During COVID-19, QR permitted seamless transfer of payments for different use cases in peer-to-peer (P2P) and person-to-merchant (P2M) transactions.

Digital Lending guidelines

Digital lending has emerged rapidly in many developing nations. Technology stacks at the back

end help customers receive credit on a real-time or near-real-time basis. Digital lending provides a necessary departure from balance sheet-based lending to cash flow-based lending, which is most urgent for the low-income, underserved, and unserved segments. Considering that the financing gap for MSME in Nepal is estimated at USD 3.6 billion, expanding digital lending has the potential to provide the much-needed push to reduce the lending gap.

The NRB issued the Digital Lending Guidelines in 2022. A few leading banks have built digital lending products for salaried segments and offer lending products for merchants based on QR transactions. Digital lending holds great potential for Nepal and is likely to give a great push to the country's DFS ecosystem. Additionally, the consultative document on peer-to-peer lending and crowdfunding released in 2024 shows that the NRB has also been looking at innovative solutions to diversify financial services.

Moreover, the Payment System Inspection and Supervision Bylaw of 2021 has been implemented to make the inspection and supervision of institutions that conduct payment-related activities regular, systematic, and effective.

Financial Literacy Framework

In 2022, the NRB launched a campaign under its Financial Literacy Framework to promote financial awareness. The campaign sought to improve financial access by educating communities and small businesses about banking institutions, nonbanking institutions, and digital FinTech platforms. Concurrently, the NRB introduced the Financial Literacy Framework (2022) to streamline and enhance existing financial literacy efforts and enable better monitoring, evaluation, and ongoing assessment. Additionally, the NRB issued the Financial Literacy Guidelines (2022) and the Financial Inclusion Policy (2024) to standardize financial literacy programs and reporting formats for banks and financial institutions.

These initiatives are particularly crucial in rural areas with low literacy rates. Banks have collaborated with local governments to implement digital literacy programs that target schools, migrant populations, and rural communities in alignment with the NRB's policies. Given the expanding use of DFS, these programs play a crucial role in safeguarding customers from associated risks.

As Nepal embraces digital financial services, small businesses like Kamala Tamang's (see page 42) are using digital platforms to overcome traditional market limitations. This case study illustrates how training in e-commerce and digital marketing empowered Kamala Tamang to expand her customer base beyond local boundaries, enhance operational efficiency, and achieve unexpected business growth. Her experience highlights the broader impact of digital tools in fostering economic inclusivity and entrepreneurial success in Nepal.

The NRB has also been conducting various activities during the Global Money Week to promote digital financial literacy. Various visits by the NRB Governor and Directors to faraway provinces, such as Karnali in northwest Nepal, have garnered significant appreciation and encouraged provincial banks to advance digital financial literacy.

NPSDS Implementation Progress

The NRB's National Payment Systems Development Strategy of 2014 in Nepal has seen significant progress across various pillars and proposed measures. Under the legal framework, payment systems operate within a robust legal environment, supported by policies and acts, such as the Licensing Policy for Payment Related Institutions of 2023, the Payment and Settlement Act of 2019, and others, though a comprehensive law on the National Payment System has not yet been proposed. The settlement mechanisms for large value and time-critical payments are safe, efficient, and compliant with the Principles for Financial Market Infrastructures, with the Real Time Gross Settlement (RTGS) system operational since September 2019 and incorporating multiple currencies and numerous direct participants.

Retail payment systems in Nepal are efficient, sound, and interoperable, featuring instruments such as cheque-clearing, electronic fund transfer, card payments, QR code-based payments, e-money, and remittances. The Retail Payment Strategy of 2019 has been key in modernizing these systems, alongside improvements in interoperability and settlement links to the RTGS. Government transactions are efficiently integrated with the national payment system, with significant electronic mobilization of government expenditure and revenue and full implementation of electronic collections at customs.

Securities depository, clearing, and settlement mechanisms are in place through CDS and Clearing Limited, although progress on a separate automated Central Securities Depository and a regulatory framework for the government of Nepal securities remains pending. The interbank money market system is modern and integrated with settlement systems, which facilitates timely transaction settlements via the RTGS.

International remittances are being handled efficiently. During FY 2023-24, remittance inflows increased annually by 16.5 percent to NPR 1,445 billion (~USD 10.9 billion), as against an increase of 23.2 percent growth observed in FY 2022-23. Nonetheless, a Beed Management report estimates that informal remittance inflows could have been as high as USD 7.5 billion during the same period. The NRB encourages remittance through formal banking channels and, to this effect, permits banks and financial institutions to offer an additional 1 percent interest on remittance savings accounts. The adoption of digital channels has also reduced remittance costs. Furthermore, the NRB's initiative to enhance digital financial literacy among migrant workers has contributed to the increased formalization of remittances. The NRB has clear oversight authority for the national payments system, has established the Payment Systems Department, and publishes regular statistics and reports on payment systems.

The National Payment Board has also been established as per the Payment and Settlement Act of 2019 with representation from the Ministry of Finance, the Nepal Telecommunication Authority, and the Financial Comptroller General Office (FCGO). The board meeting is held every two months, and other representatives from any licensed institutions or related departments of the Government of Nepal may be invited. The board has been assigned to:

- a. Ensure the payment system is secured, managed, and effective, and to arrange for policies for financial stability, risk mitigation, promotion of the payment system's reliability, and modernization of the payment system
- b. Coordinate among companies related to the payment system
- c. Regularly monitor, surveil, and oversee work related to the payment system
- d. Give direction to the companies and communication service providers to secure and manage the activities related to the payment system
- e. Take action against the institutions that act contrary to this Act or to direct the concerned department of the bank to write to the concerned agency to take action
- f. Form different technical committees and subcommittees to monitor, regulate, and oversee that the payment system is operated in a secured manner.

RPS Implementation

The NRB's Retail Payment Strategy of 2019 in Nepal has made considerable strides in several areas. To strengthen the legal and regulatory framework, bylaws and regulations have been framed for the functioning of the board, licensing, and oversight responsibilities, including revised licensing policies

for PSOs and PSPs alongside regulations for agent network growth. Now, agents can represent multiple banks instead of just one.

In terms of deepening digital retail payment systems, progress includes the promotion of interoperability, though it has not yet been implemented for wallet-to-wallet transfers or all QR codes. The NRB has incentivized banks to open branches, which has led to the presence of commercial bank branches in 752 out of 753 local levels. Integration with Visa and MasterCard for domestic debit card e-commerce payments has been facilitated, but integration with global e-money providers is pending. Payment of travel and transit for domestic flights and bus tickets through licensed PSOs and PSPs has begun to facilitate faster payments. Yet, more work is needed to implement unstructured supplementary service data (USSD) payments and tiered know-your-customer (KYC) for transaction accounts.

Significant progress has been made on government payments to transaction accounts. Now, nearly 90 percent of government expense transactions are digital, including government-to-person (G2P) payments and social benefits. About 30 percent of government revenue is collected digitally. The [Terms of Reference signed](#) between the RBI and the NRB has facilitated cross-border payments and enabled Indian wallet users to pay in Nepal through QR codes.

NRB has been promoting financial awareness, literacy, and access together with the stakeholders. It has also consulted on fair pricing of payment products and services and published educational materials. Banks, PSOs, and PSPs are required to communicate transaction details to customers and have set up customer grievance redressal centers, although timely resolution remains a challenge.

Oversight measures include the ongoing development of guidelines to foster innovation through a “sandbox” approach, which is expected to be implemented by the end of 2024. The Payment Systems Oversight Manual of 2021 guides oversight functions, while the Cyber Resilience Guidelines of 2023 manage cyber risks. The NRB also publishes monthly data on the various payment system instruments.

Cooperation between authorities has seen the mandatory use of the National ID by people to access government services, such as passport issuance and renewals. However, application programming interface (API) integration with payment systems or services is still in progress.

Annex D provides the detailed progress against the pillars and proposed measures of both the NPSDS and the RPS.

Other initiatives to foster DFS

The NRB has continued its focus on promoting digital financial services. It has been developing several concept papers that will be transformed into guidelines in the coming years. These initiatives seek to foster innovation, bring digital financial services closer to individuals, and support entrepreneurs in turning these concept papers into reality.

- A concept paper has been drafted to establish a full-scale digital bank.
- Another concept paper has been prepared to study the feasibility of the regulatory sandbox and innovation office.
- The Central Bank Digital Currency Division has been established under the Payment System Department to study and issue Central Bank Digital Currency in Nepal. The division has been studying international practices of central bank digital currencies.

Alongside these developments on the payments side, the NRB's financial inclusion initiatives continue to support the country's DFS ecosystem. Over the past few years, the NRB has been actively focusing on financial inclusion and has developed many initiatives and guidelines to benefit stakeholders, including end customers. Policies, such as the NPSDS 2014, the RPS 2021, the Nepal QR

Standardization Framework 2021, and the Financial Literacy Framework 2022, all play an active role in pushing financial inclusion. Annex A contains a comprehensive list of the NRB's major policies.

The NRB has, therefore, formulated the Nepal Financial Inclusion Action Plan as part of its steadfast commitment to advancing digital financial services. This strategic plan seeks to broaden the reach of formal financial services and ensure cost-effective financing is available to everyone, with the ambitious goal of achieving this by the year 2030.

Box 3.2 Case 6: Sujata Thapa business growth through digital financial literacy

In the rural landscape of Makwanpur, Nepal, DFS integration is transforming the business practices of local entrepreneurs. This case study delves into the entrepreneurial journey of Sujata Thapa, who, with the aid of digital financial literacy training and support from a local microfinance institution, has successfully adopted digital tools to enhance her business operations.

Sujata Thapa embarked on her business journey in 2022. She opened a small shop with financial help from a local microfinance institution. This opportunity came after she received comprehensive digital financial literacy training, which equipped her with the skills to manage her finances and use digital tools effectively.

With her newfound knowledge, Sujata Thapa uses digital wallets and QR codes to handle various payments. She pays for utilities, such as electricity and water bills, school fees, and other household expenses seamlessly through digital platforms. This shift to digital payments has significantly simplified her financial management. It saves time and reduces the hassle of cash transactions.

Thapa has also integrated digital payments into her business operations. She buys groceries and other essentials for her shop using digital wallets and mobile banking. The ease and efficiency of cashless transactions make purchases more convenient. Her customers also appreciate the convenience of cashless payments, as she accepts payments via wallets and QR codes for the products she sells in her grocery and general stores.

Thapa shared, "The adoption of digital financial services has truly transformed my business. It has made transactions quicker and more secure while also enhancing my ability to maintain accurate financial records, which has thus reduced the risks associated with cash handling. The digital literacy training and the microfinance institution's support have empowered me to expand my business and improve my financial stability."

Thapa's story is a testament to the impact of digital financial literacy and inclusion. She has streamlined her business operations through the use of digital tools and set an example for other entrepreneurs in her community. Her success highlights the potential for digital financial services to drive economic growth and empower individuals, particularly women, in rural areas like Makwanpur.

Sujata Thapa's experience underscores the pivotal role of digital financial literacy in empowering women entrepreneurs in rural Nepal. By embracing digital wallets, QR codes, and mobile banking, Sujata has streamlined financial transactions, improved operational efficiency, and expanded her business reach. Her story exemplifies how digital financial inclusion can drive economic growth, strengthen financial stability, and foster entrepreneurial success in underserved communities.

3.2 Key regulatory interventions needed

Interoperability

Interoperability is a crucial and necessary step toward achieving a democratized payment system and expand DFS in Nepal. The NRB has been instrumental in facilitating guidelines for small-value transactions through QR code-based payments. With interoperability, such mass-market-based transactions can be scaled multiple times. Considering this, the NRB issued a [circular](#) on Interoperability and Access in 2022.

The circular was intended to guide the licensed institutions that carry out payment-related activities to interoperate in the system. It compared the mechanism and instrument of one licensed institution with another to expand payment service access to the general public and manage risk. Despite these efforts, major wallet players are yet to adapt to interoperability, which has forced customers to use multiple apps to make and receive payments. This lack of interoperable systems causes inconvenience for both customers and merchants, who must maintain multiple apps. The lack of interoperability in digital financial services can create several challenges for customers:

- **Limited access:** Customers may find it difficult to access a wide range of financial services if different platforms and providers do not work together seamlessly. This can be particularly problematic in regions with limited banking infrastructure, such as Nepal's hilly regions.
- **Higher costs:** Without interoperability, customers may incur additional fees when they transfer money between different financial service providers. These costs can add up to make DFS less affordable.
- **Inconvenience:** Customers may need to use multiple apps or platforms to manage their finances, which leads to a fragmented and inconvenient user experience. This can be especially frustrating when customers try to perform simple tasks, such as transferring funds or checking balances. Maintaining multiple wallets can also be a burden for less-educated people.
- **Security risks:** Inconsistent security measures across different platforms can expose customers to higher risks of fraud and data breaches. Ensuring secure transactions becomes more challenging when systems are not interoperable. For customers who are early adopters of DFS, security is a prime consideration. Any shortfall here will break the momentum of DFS progress in the country.
- **Reduced innovation:** When financial service providers operate in isolation, it can stifle innovation. Interoperability encourages competition and collaboration and leads to the development of new and improved financial products and services.

Our field interactions with both demand and supply-side players reveal a strong consensus on the need for enhanced interoperability in DFS. Stakeholders place significant emphasis on achieving interoperability at the wallet level. They argue that customers should be able to use a single digital wallet for all transactions rather than managing multiple wallets from different providers.

For instance, during our interactions in Gandaki, a banker noted that if a customer using the Khalti wallet could transfer funds to a recipient who uses an e-Sewa wallet, the recipient would not need to open a Khalti account. This would simplify transactions and eliminate the need for individuals to manage multiple accounts.

This issue is particularly challenging for customers in rural areas. These customers tend to have low digital literacy, which makes the process of navigating multiple applications cumbersome and confusing. Field findings show that these users already struggle with even a single application. Additionally, they often incur extra charges when transferring money between different financial

service providers. Standardizing and integrating wallet functionalities would address these issues and make digital transactions more accessible and user-friendly.

Many developing countries, such as Bangladesh and India, are reaping the benefits of interoperable payments. The recent partnership between [Khalti](#) and Fonepay with India's NPCI International Payments for cross-border payments using QR codes is a positive step forward.

The NRB also issues various unified directives related to payment systems. As of mid-July 2023, the NRB had issued 16 directives related to payment systems and services. These cover provisions related to wallet settlements, fees and transaction limits, interoperability, consumer protection, risk management, money laundering, branchless banking and authorized agents, among others.

Cybersecurity

Field interactions with stakeholders of the study, as well as the annual report of [McKinsey's 2023 Digital Payments Consumer Survey](#), indicate that customers tend to trust bank apps more than mobile wallets. This preference is primarily due to a higher customer trust in banks and the straightforward communication channels available to resolve any issues. The robust security measures implemented by banks in Nepal further strengthens this trust. This has made mobile and internet banking indispensable for many users.

Given the breadth and complexity of the cyber threat landscape and the dynamic nature of the technology, the NRB concluded that it is vital to adapt to the times by enhancing and developing cyber resilience procedures while taking into consideration all pertinent advancements. With this focus, the NRB developed the Cyber Resilience Guidelines in 2023. Many leading banks of Nepal have employed advanced security measures to protect the online banking experience of customers. These measures include encryption technology to safeguard data during transmission, multi-factor authentication for enhanced account protection, continuous monitoring of systems for suspicious activities, regular security assessments and audits to identify and address vulnerabilities, and collaboration with industry-leading security partners to stay ahead of emerging threats.

Despite these efforts, various challenges persist, primarily due to low digital literacy among users. Field interactions indicate that cases of online fraud and scams are rising, with each bank branch facing at least one or two complaints of fraud or scams per month. Digital literacy initiatives by the NRB and financial institutions have significantly reduced these cases, yet challenges remain.

Another significant challenge is the lack of an official coordination mechanism between financial institutions in cases of illegal money transfers. Scammers often transfer money from victims' accounts to multiple other accounts, which makes tracking difficult without an official mechanism. Currently, accounts are usually frozen based on personal relationships between the banks involved rather than through a formalized system.

Upgradation of regulatory purview—the use of RegTech and SupTech tools

The rapid advancement in DFS calls for a corresponding evolution in regulatory frameworks to ensure effective oversight, risk management, and consumer protection. The NRB has been [using](#) supervisory technology (SupTech) solutions to enhance its regulatory capabilities.

In 2016, the NRB standardized its reporting templates for financial service providers and introduced regulatory reporting via a web portal and data upload system. This development enables the NRB to make granular data on credit, deposits, financial access, and financial inclusion available publicly. Ensuring the accuracy, completeness, and consistency of data from multiple sources, however, can be a challenge and may hamper the effectiveness of these tools.

The NRB has also used geospatial data through an e-map portal to map financial access points

across Nepal. Combined with data submitted by supervised institutions, this portal allows the NRB to analyze financial data based on geography, region, municipality, and branch. Additionally, the NRB has developed interactive dashboards that enable supervisors to view and query supervisory data in real time. While these solutions are not entirely new innovations, they significantly enhance the NRB's regulatory purview by providing comprehensive insights into Nepal's financial landscape.

The increased reliance on digital tools necessitates robust cybersecurity measures to protect sensitive financial data, which can be a significant challenge. Cybersecurity risks, data quality and integration issues, technological infrastructure limitations, skill gaps, and the cost of implementation are some of the hurdles that need to be addressed to fully realize the potential of regulatory technology (RegTech) and SupTech solutions in enhancing regulatory oversight.

While the NRB's adoption of SupTech tools represents a significant advancement in its regulatory framework, continuous investment in technology, infrastructure, and capacity building is essential to overcome these challenges and ensure effective oversight of the evolving DFS landscape.

Regional integration of payment systems

The regional integration of payment systems is a key driver that can facilitate trade, reduce transaction costs, and promote the use of local currencies. In the coming years, the NRB can also examine such regional-level integrations that can put Nepal's DFS ecosystem on the global platform. The following are some notable examples from different regions.

Europe

The Single Euro Payments Area (SEPA), established in 2008, is a significant payment integration initiative by the European Union that seeks to simplify and harmonize bank transfers denominated in Euros across member countries. SEPA allows individuals and businesses to make cashless payments to any account within the area through a single bank account and standardized payment instruments. SEPA currently includes 36 members: the 27 EU member states, four European Free Trade Association countries (Iceland, Liechtenstein, Norway, and Switzerland), and several microstates like Andorra and Vatican City. SEPA achieved full operational status in 2014, and has significantly reduced transaction costs by streamlining payment processes. SEPA's implementation resulted in savings for the European economy estimated at up to 2-3 percent of the total GDP.

Latin America

Latin American countries have implemented various regional payment systems, such as the Sistema de Pagos en Moneda Local (SML) between Argentina and Brazil, to settle bilateral trade in local currencies and reduce the use of the US dollar. Launched on October 3, 2008, the SML facilitates trade between Argentina and Brazil using their local currencies—Argentine Pesos and Brazilian Reals—without relying on US Dollars. This system promotes foreign trade in local currencies, deepens markets for these currencies, and reduces transaction costs associated with cross-border payments.

Africa

Several regional economic communities in Africa, including the Southern African Development Community (SADC), the East African Community (EAC), the Common Market for Eastern and Southern Africa (COMESA), the West African Economic and Monetary Union (UEMOA), and the Central African Economic and Monetary Community (CEMAC), have deployed payment systems to facilitate cross-border transactions and trade.

The Pan-African Payment and Settlement System (PAPSS), launched on January 13, 2022, by the African Union (AU) and the African Export-Import Bank (Afreximbank), is a significant financial infrastructure initiative aimed at facilitating cross-border payments in Africa. PAPSS supports trade

under the African Continental Free Trade Area (AfCFTA) by enabling real-time gross settlement (RTGS) transactions in local currencies among African countries.

The Economic Community of West African States (ECOWAS) is working toward establishing a regional payment and settlement system that includes an instant retail payments system and an RTGS system. This initiative, supported by the African Development Bank, seeks to enhance regional integration, support cross-border trade, and facilitate the transition to a single currency in the region.

Southeast Asia

The Association of Southeast Asian Nations (ASEAN) countries are working toward interoperable regional payment connectivity by 2025. For example, Singapore's PayNow is linked with payment systems in Thailand, Malaysia, and India. Cross-border QR code payments are being implemented in countries like Singapore, Malaysia, Indonesia, and Thailand to enable convenient, low-cost transactions for travelers and migrant workers.

In November 2022, the central banks of Indonesia, Malaysia, the Philippines, Singapore, and Thailand signed a Memorandum of Understanding to achieve interoperable regional payment connectivity by 2025. This initiative seeks to facilitate cheaper and faster cross-border payments through bilateral linkages between payment systems, such as Singapore's PayNow and Thailand's PromptPay, enhancing trade opportunities and reducing reliance on the US dollar.

The Caribbean

Various initiatives are underway throughout the Caribbean region to enhance payment systems across member states. These efforts focus on creating interoperable payment systems that facilitate cross-border transactions, particularly for remittances and trade. The integration seeks to streamline payments between countries, reduce costs, and increase financial inclusion.

These examples highlight the ongoing efforts in different regions to integrate retail payment systems, enhance cross-border transactions, and promote economic cooperation among member states. Interoperability and harmonization of legal, technical, and operational aspects are key to the success of these initiatives.

3.3 Support from the development partner community

Over the years, the NRB has received generous support from the development partner community in various DFS-related initiatives and measures. This support has largely come in the form of technical support, advisory support, and funding support. This support has been instrumental in fostering DFS in Nepal:

The World Bank Group

The World Bank Group, including IFC, has been pivotal in advancing Nepal's financial sector reforms, with a particular emphasis on DFS. The World Bank's Financial Sector Stability Development Policy Credit has significantly strengthened the regulatory framework of the financial sector, thereby enhancing access to financial services, including DFS. Simultaneously, IFC has provided technical assistance to the NRB in developing guidelines for a regulatory sandbox. Additionally, IFC has piloted a psychometric credit scoring system to assist loan providers in making more informed credit decisions and has supported the implementation of the Access to Financial Services Nepal project for MSME Finance and Payment Systems Development.

In June 2022, the World Bank approved USD 140 million for the Digital Nepal Acceleration Project (DNAP), which seeks to facilitate the implementation of the Government of Nepal's 2019 Digital

Nepal Framework (DNF). This project underscores the World Bank's commitment to supporting Nepal's digital transformation and enhancing the reach and efficacy of digital financial services across the country.

United Nations Capital Development Fund (UNCDF)

The UNCDF has implemented various programs under its "Mobile Money for the Poor" initiative. These programs are designed to increase financial inclusion by using mobile technology to provide financial services to underserved populations. UNCDF has also collaborated with local financial institutions to develop digital payment systems and improve financial literacy. Additionally, UNCDF also supported the NRB in developing the Nepal Financial Inclusion Roadmap (2017-2030), which presented the necessary improvements needed to achieve the goal of financial inclusion.

Asian Development Bank (ADB)

The ADB has supported Nepal through technical assistance projects that seek to enhance financial inclusion and digital finance. This includes support for improving the regulatory environment, developing digital payment infrastructure, and fostering innovation in financial technologies. ADB has continued to support Nepal to improve expenditure and debt management through policy reform actions that include the institutionalization of a fiscal policy statement, approval of legal framework and strategy for debt management, public enterprises reform, electronic government procurement including contract management, and digitization of expenditure recording and reporting at the three tiers of the government.

United States Agency for International Development (USAID)

USAID has also contributed to DFS development in Nepal through its programs focused on enhancing financial inclusion and supporting economic growth. These programs include initiatives to promote digital payments and improve financial literacy among rural and underserved communities. USAID was also the key supporter of the UNCDF's Mobile Money for the Poor program.



3.4 DFS Regulatory Progress Nepal and Neighboring Countries

TABLE 3.2 FEATURES OF THE DFS ECOSYSTEM IN BANGLADESH, INDIA, NEPAL AND VIET NAM

	Guidelines on the interoperability of wallets	Digital lending guidelines	Receipt of DBT/SSA directly to accounts	Guidelines on Central Bank Digital Currency	Regulatory sandbox	Availability of any digital public infrastructure (DPI)	FinTech SRO guidelines	Digital data protection
Bangladesh	Yes ✓	No ✗ No guidelines, only notifications	No ✗	No ✗	There is a regulatory facilitation office but no sandbox guideline	No ✗	No ✗	No ✗
India	Yes ✓	Yes (2022) ✓	Yes ✓	Yes, pilot ongoing (2022) ✓	Yes (2019) ✓	Yes (2021) ✓	Yes (2024) ✓	Yes (2023) ✓
Nepal	Yes ✓	Yes (2022) ✓	Yes ✓	No, but a concept report was released in Aug 2022 ✗	Not yet. Work ongoing to implement it by 2025. ✗	No ✗	No ✗	No ✗
Viet Nam	No ✗	No ✗	No ✗	No ✗	Yes (2024) ✓	No ✗	No ✗	Yes (2023) ✓

As detailed above, Nepal has made significant strides in enhancing its digital financial services ecosystem. After the guidelines on interoperability and digital lending, Nepal is rolling out the National ID, which serves as a digital identification layer for digital public infrastructure. The country also plans to implement a unified payments interface through the National Payment Switch.

However, Nepal still lags behind its neighbors in certain areas. India leads the region with substantial advancements, including the pilot launch of a Central Bank Digital Currency (CBDC) in 2022, the establishment of a regulatory sandbox in 2019, and the development of DPI since 2021. Additionally, India and Viet Nam enacted digital data protection laws in 2023, a step that Nepal has yet to take. Bangladesh and Viet Nam show varied progress. Bangladesh lacks formal digital lending guidelines, regulatory sandboxes, and digital data protection laws, although it does have guidelines on wallet interoperability. While Viet Nam has no guidelines on wallet interoperability or digital lending, it plans to implement a regulatory sandbox by 2025 and has enacted digital data protection laws.

Nepal has released a concept report for a CBDC in 2022 and is working toward implementing a regulatory sandbox by the end of 2024. However, the country has not yet developed significant DPI or established a FinTech self-regulatory organization. While Nepal is on the right track with certain digital financial services initiatives, it needs to accelerate efforts in areas, such as DPI, regulatory sandbox implementation, and digital data protection to keep pace with countries like India.



MSC / Ankur Shrestha

4. Sectoral impact of DFS

DFS adoption and usage have increased significantly over the past decade. This study's field interactions reveal that the uptake of DFS impacts different sectors in Nepal.

This section examines DFS adoption and its impact across different sectors of the economy, explaining how DFS use has changed each sector while increasing efficiency, security, and inclusivity in financial transactions. This section also discusses the impact created by the NRB's policies related to payments and DFS in sectors such as agriculture, dairy, cooperatives, MSME, and FinTech.

4.1 The NRB's sectoral impact

MSME and SME sector

SMEs contribute to about 22 percent of Nepal's GDP. As per the 2018 National Economic Census, Nepal has more than 923,000 establishments, of which roughly half are registered at either the company registration office, the GoN's Department of Cottage and Small Industries, or at the local government municipalities .

The MSME sector employs 2.7 million individuals. Of the 923,356 businesses within this sector, 95.4 percent are micro businesses. These microbusinesses account for 69.3 percent of jobs within the sector. About 4.4 percent of establishments in the MSME sector are small and medium businesses. These SMEs account for 30.7 percent of employment generated by all MSMEs. The Industrial Enterprises Act of 2020 defines the micro, small, medium, and large enterprises in Nepal based on capital investment.

Yet, despite their prominent contribution to the economy and jobs, 37 percent of MSMEs report a lack of access to finance as a significant constraint to growth. The projected financing gap for Nepal's MSMEs is estimated at USD 3.6 billion.

The NRB's role has been instrumental establishing the strength of Nepal's SME sector. DFS innovations have revolutionized how small businesses and their consumers engage with money—from mobile banking to digital payments. Additionally, DFS innovations have emerged as a transformative force to address and mitigate the challenges faced by SMEs. The NRB fostered solutions that transformed how SMEs access capital and manage cash flows. It streamlined digital lending processes and offered digital payment solutions. This has helped numerous small businesses, such as that of Pooja Chudali (see page 41-42) to reinvent their business and continue serving customers.

The NRB's role has been instrumental in the following ways:

Simplifying the payment process

The NRB's push to develop DFS has played a pivotal role in streamlining payment processes for SMEs. DFS has presented efficient and user-friendly solutions for MSMEs. This enables SMEs to accept various

payment methods, such as digital wallets and online transfers, which simplifies transactions for both customers and businesses. Moreover, the introduction of the QR payment system has significantly streamlined the payment process, advancing beyond cash transactions and the need to manually input account details to transfer funds.

The use of cash for business transactions can cause various problems. Counting and verifying cash transactions can be time-consuming, may slow down daily processes, and affect customer service. Likewise, if businesses carry and handle large amounts of cash, it can expose them to security risks, such as theft, robbery, or mishandling by employees. The lack of transparency in cash transactions leads to challenges, such as difficulties in tracking and recording transactions accurately. The digital payment process eliminates the need to count and check cash continuously. Thus, SMEs can embrace contactless payment options with the help of FinTech innovation to accelerate the payment process. Additionally, contact payments provide quick access to funds and enhance cash flow management.

Microbusinesses like the one owned by Pooja Chudali can easily pay their suppliers digitally and also receive customer payments digitally, which saves them considerable time and effort.

Simplifying access to capital

Innovation in DFS has significantly supported SMEs in their quest for capital. The traditional lending process is fraught with challenges that often impede businesses in need of financial support. These conventional methods are time-consuming, involving extensive application procedures and substantial paperwork, which make it difficult for entrepreneurs to secure the necessary capital.

The NRB has been actively promoting innovations to improve access to capital for the MSME sector. The NRB's development of digital lending guidelines exemplifies its proactive approach to addressing these issues head-on. Several banks and FinTech companies have undertaken similarly innovative initiatives.

For instance, the introduction of Foneloan, a digital lending platform, in 2019 has reshaped the landscape of lending businesses in Nepal. Foneloan began as a digital loan for salaried individuals. It was extended to MSMEs in FY 2021-22 based on merchants' QR transactions. Digital lending operates as per the guidelines set forth by the NRB and permits MSMEs to access immediate capital through platforms like Foneloan. Even banks have been trying to develop digital transaction-based lending. This would not have been possible if the enterprises lacked digital trails in the form of digital transactions, QR transactions, connectIPS transactions, and IBFT, among others.

These innovations allow small and medium-level enterprises to access instant capital to invest in their business. Merchants are given a tailored loan based on their transactions done through merchant QR. Nabil Bank, Laxmi Sunrise Bank, and NMB Bank are among some providers of QR-based lending facilities. Additionally, entrepreneurs who run MSMEs or SMEs can also take advantage of flexible loan repayments.

Pooja Chudali started to accept payments through QR codes, helping her create a digital transaction history. Such histories help providers lend to microbusinesses by assessing their cash flows and moving away from traditional balance sheet-based lending.

Digital accounting and record-keeping

Another correlation between DFS innovation and SMEs includes digital record keeping. The use of cash transactions in business does not provide transparency. Therefore, it can be difficult to keep records of those transactions. The NRB's innovations in mobile banking and digital wallets has made accounting and record-keeping easier for SMEs. It replaces manual processes with digital efficiency. Additionally, entrepreneurs can view their transaction statements in real-time, which helps them keep a record of their finances. Looking forward, the NRB seeks to transition businesses toward

cash-flow-based lending through forthcoming digital lending guidelines. This shift represents a move away from balance sheet-based lending practices and holds the potential to provide crucial credit access to numerous deserving MSMEs.

Entrepreneurs like Pooja Chudali can easily maintain her accounts digitally, which giving them greater control of their businesses.

Psychometric scoring solutions

The NRB facilitated a pilot test of psychometric scoring solutions. This was jointly implemented by the NRB and the IFC. Psychometric tests are a standard scientific method used to measure an individual's mental capabilities and behavioral style. Psychometric scoring solutions help financial institutions statistically analyze the personality and psychological traits of potential borrowers. These solutions generate a risk profile as a first step to building a formal credit history for someone to access formal financial services.

So far, the scoring tool has been used in Morocco, Ethiopia, and Senegal. This innovation, designed to facilitate more accurate credit decisions, helps spur broader access to finance through an additional layer of information consumers provide to their lenders. Small business entrepreneurs generally lack credit files and primarily operate on a cash basis.

Credit providers can determine a borrower's willingness and capacity to repay loans through psychometric scoring solutions and make informed decisions. This project seeks to create the right environment for MSMEs to grow and also focuses on the development of the financial and market infrastructure to strengthen MSMEs. It also includes a robust payment system and innovative solutions to accelerate reforms.

Agriculture sector

Nepal's economy is deeply rooted in agriculture. More than two-thirds of its population is involved in farming and related sectors. Historically, farmers have relied heavily on cash transactions. However, a notable shift toward DFS has emerged in the agricultural community after the COVID-19 pandemic. The use of DFS surged by 600 percent, which indicates its growing demand and acceptance among Nepalese farmers.

The adoption of DFS has been significantly influenced by DFS agents' efforts. Ground-level entities, such as cooperatives, have been instrumental in efforts to raise DFS awareness among farmers. Agents have also played a crucial part to connect farmers with formal financial institutions and thus facilitate the provision of digital financial services in Nepal.

In February 2022, the NRB issued Circular 3/078/79, which outlines the arrangements for branchless banking and authorized agents. As per the circular, agents must use a point-of-transaction machine to provide their services. These agents are restricted from operating within metropolitan or sub-metropolitan cities and are authorized to offer services, such as deposits, payments, withdrawals, statement issuance, and the management of pre-approved credit or interest deposits.

Additionally, branchless banks are required to establish written agreements with customers to conduct transactions, which ensures that these agreements are in the Nepali language and easily understandable. The circular also stipulates that agents should not be made to enter into exclusive agreements with branchless banking providers.

Box 4.1 Case 7: Bridging the gap: Agent banking and the evolution of digital financial services in Nepal

Agent banking is among the least explored channels in Nepal. However, from a global perspective, it is among the many channels that play an important role in a country's financial inclusion. The agents of multiple banks serve as an extension of banks and provide essential banking products and services in urban, rural, and remote areas. In turn, this role helps the agents build an income stream and creates income generation opportunities, specifically in rural and remote areas. These banking agents play a key part to bridge the gap in formal banking for the population's underserved and unserved segments. In most cases, agents are located in close proximity to underserved areas. Agents make it easier for customers to access banking services.

IME Pay is one example of the successful use of agent banking to bring customers into the purview of formal financial services and increase the uptake of digital financial services in Nepal. It works as a neobank to the Global IME Bank and is an extension of the bank. IME Pay allows its customers to pay online in shops through QR codes, money transfer transactions, wallet recharge, and bank transfers, among other modes. IME Pay is among the most active applications, with more than 3 million users. Unlike most of its rivals, IME Pay provides interest to its customers when they store money in their wallets. Since the transfer between IME Pay and Global IME Bank is seamless, it supports the social security benefit transfer with much more ease and convenience, specifically for customers with an IME bank account. Use cases under the person-to-government (P2G) category seem to be the most sought-after for agent banking transactions.

Although interoperability in Nepal is limited, enough evidence exists to show that it can increase overall financial inclusion. For instance, more customers could use IME Pay to cash out their social security benefits without being an account holder in the Global IME Bank. Once the cash-in cash-out (CICO) use cases become interoperable, they will bring more customers into the purview of digital financial services. This can help build a digital data trail for many customers who otherwise do not have access to banking services. The alternative data can thereby pave a path to many more formal financial services, such as microcredit, insurance, and investments, beyond the existing payments use cases.

In most countries, closed-loop payments have started a wave of uptake and usage of digital financial services. Although payments are the foot through the door, many use cases and aspects need to be considered to build the stickiness of customers to digital solutions. These aspects include ease, convenience, interoperability, and relevance. The shift from closed-loop payments to open-loop payments will be the next step to increase CICO payments' uptake at the least. (Open-loop payments refer to payments where the customer is not held back by the bank account they own).

Farmers have been extending their use of digital payments beyond basic transactions to include payments for agricultural inputs, labor, and insurance. This trend suggests a potential for the expansion of DFS within the agriculture sector. As many farmers are already adept in mobile payments, the next focus is to educate them on the broader applications of DFS. Thus, DFS providers must launch a comprehensive campaign that raises awareness and educates the community about the advantages of digital financial tools, such as digital wallets, to enhance DFS usage. The employment of respected local personalities in these campaigns can be an effective strategy, as it promotes trust and relatability among the farming population.

Dairy industry

Dairy is among the main livelihoods of Nepal's farmers. As per the Food and Agriculture Organization (FAO), more than 1.6 million farmers are engaged in the sector and contribute to 9 percent of the national GDP. Forty percent of the milk is processed through the Dairy Development Corporation, and the rest through private dairies. Dairy cooperatives are the backbone of the sector and serve as catalysts in the development of the dairy value chain. They play a significant role in the collection and sale of raw milk from the farmers to the Dairy Development Corporation and private dairies.

Nepal has more than 1,700 dairy cooperatives, each with a membership of 200 to 2,000 farmers. An estimated 20,000 individuals are employed in dairy cooperatives countrywide. On average, a dairy cooperative collects 48,000 liters of milk per year and pays NPR 1.6 million (USD 12,945) per year to farmer members. An average farmer earns NPR 31,238 (USD 260) per year from dairy.

Research shows that dairy farmers face multiple challenges:

- **Insecure physical cash movement from banks to cooperatives:** Operation costs and theft risk have increased.
- **Manual recordkeeping of milk collection details and reconciliation of payments:** Banks do not consider this non-digitized data for lending, and the recordkeeping is time-consuming.
- **Financial distress:** Delayed payments can lead to borrowing on the informal market, which is expensive and can create a debt trap.
- **Cash payments:** Receipt of cash can create unwanted expenses and does not encourage saving.
- **Lack of financial services:** Dairies can only pay in cash, and cannot offer or use additional services.

A few experiments have been conducted in the dairy industry with the digital rails provided by the NRB to digitize the payment flows to farmers. Prabhu Management Pvt. Ltd. and UNCDF worked on this innovation from 2017 to 2020¹³. They digitized the data recording and accounting process for farmers. Later, Prabhu Management integrated its wallet into a bulk payment portal in the ledger through the NRB's digital rails to digitize the disbursement of payments to farmers in multiple modes. Farmers could receive their payments on the PrabhuPAY wallet.

The data from Prabhu Management showed a spike of nearly 600 percent in the usage of digital financial services during the COVID-19 lockdown period. The average number of transactions in this period increased from 357 to 2,434 per month, while the average number of monthly users increased by 300 percent. Furthermore, nearly 56 percent of the farmers used DFS services for the first time during the lockdown period. This analysis indicates the latent demand and acceptability of financial services in rural areas. Additionally, it confirms that grassroots organizations, such as cooperatives, were a vital lifeline for farmers throughout the pandemic.

Such experiments were possible due to the payment solutions facilitated by the NRB.

Information technology

The IT industry is Nepal's backbone. Nepal's IT service export (ITes) industry is valued at approximately USD 515 million. There are more than 106 IT service export companies and 14,728 IT freelancers in software development and technology, as well as 51,781 IT freelancers in IT services export through various digital platforms. The total IT service exports reached USD 515 million in 2022. Nepal's IT sector has experienced a growth of 64.2 percent since 2021, with substantial growth

¹³ This was part of the Mobile Money for the Poor (MM4P) program implemented by the UNCDF in four least developed countries in Africa and Asia: Lao PDR, Liberia, Malawi, and Nepal

experienced both in companies and among freelancers. IT companies recorded an 80.5 percent increase in service exports compared to the previous year, and freelancers grew by 55.2 percent.

The revenue growth in the IT sector demonstrates the high quality of IT services offered by Nepali companies to international clients. This has resulted in an increased influx of foreign exchange. These achievements highlight the competitiveness and competence of Nepal's IT services, which contributes to Nepal's economic development. In 2022, IT service exports accounted for 1.4 percent of the country's GDP and 5.5 percent of the foreign exchange reserves.

Notably, youth are highly involved in Nepal's IT sector. More than eighty percent of freelancers fall within the 20- to 29-year-old age bracket. The government's focus has been the encouragement of youth-centric policies in Nepal that can harness talent and foster homegrown growth. This will gradually help the transition from a dependence on agriculture to the services sector.

The NRB's proactive policies for payments have facilitated the ease of receipt of payment for IT companies. A report by the Institute for Integrated Development Studies, [Unleashing IT: Advancing Nepal's Digital Economy](#) found that bank transfers are the most common method to receive payments from foreign destinations. They account for 92.6 percent of the transactions. Most companies receive their payments within a week. This has helped them deal with working capital issues.

The report also reveals that a significant majority of freelancers, 88.9 percent, receive their payments within Nepal. Approximately 3 percent are paid from abroad, and 8.1 percent receive payments from both domestic and foreign sources.

Migrants and cross-border payments

The [Nepal Labour Migration Report 2022](#) notes that international migration has become an integral part of Nepali society. It has touched almost every Nepali family, as many Nepalis are engaged in transnational migration, primarily for work and education. As per the preliminary findings of the 2021 Census, more than 2.1 million Nepali citizens live outside the country, which represents 7.4 percent of the national population. Men comprise 81.3 percent (or 1.8 million) of this migrant group. A significant number of Nepali students also go abroad to study. The Ministry of Education, Science and Technology issued "no objection certificates" to 416,364 Nepalis to study abroad between FY 2008/09 and FY 2020/21.

Cross-border remittance is a significant foreign exchange source for Nepal, which covers around 25 percent of Nepal's GDP and has sustained the economy for the past few decades. It has stabilized Nepal's payment balance and financed nearly 84 percent of the trade deficit. As per the NRB's annual data for 2022-23, the remittance inflow stood at USD 9.3 billion in Nepal. This is driven by a steadily growing migrant population that has tripled over the past 20 years.

The top destinations for Nepalese migrants include India, Malaysia, Saudi Arabia, and Qatar. Remittance has also contributed to the reduction of poverty levels in rural families and increased the internal migration rate from rural to urban areas for quality education, health, public services, and better living standards.

The NRB has played a major role in formalizing the inflow of remittances over the years. Even now, about 50 percent of the remittances come via formal channels in Nepal. The balance comes via informal sources, which are convenient, cost-effective, and quick.

Due to the regulatory actions taken by the NRB, Nepal has a vibrant ecosystem of remittance service providers, with a large percentage of the market controlled by traditional money transfer operators. The NRB has licensed more than 56 remittance companies for remittance transactions. The NRB regulates the sector, and banks are the only institutions mandated to deal in foreign exchanges and provide international remittance services. All nonbank RSPs must enter into partnerships with banks to provide remittance services. Remittance providers can also join the Nepal Clearing House Ltd. as

indirect members to use the National Payments Interface to deposit remittances directly into the beneficiary's bank accounts.

More than 50 companies offer remittance services in Nepal. The cost of sending remittances to Nepal remains lower than the global average, albeit with significant variations by corridors. RSPs can include financial and nonfinancial entities, such as money transfer operators, postal networks, banks, mobile network operators, and multi-channel operators.

COVID-19 tested the inflow of remittances from abroad to Nepal. Despite this, the overall flow of remittances has remained robust. Reports also suggest that formal channels absorb flows from informal channels, which makes formal and no-contact digital remittance options more attractive.

FinTech sector

FinTech is an emerging sector in Nepal. As of June 2024, [Tracxn data suggests](#) that the country has 116 FinTechs, including 26 PSPs and nine PSOs.

Nepal's journey toward the integration of technology into its financial sectors started when the NABIL Bank (formerly known as Nepal Arab Bank) introduced credit cards in 1990. Despite the rapid penetration of easy internet access and smartphones in the Nepali market, the adoption of electronic payment technologies remained relatively sluggish until the mid-2010s. The outbreak of COVID-19 acted as a catalyst that spurred greater demand for mobile banking, QR payments, and cashless transactions.

The NRB's role was instrumental at this juncture. The digital rails were already laid, and people and companies had the option to use digital modes immediately with some support. Hence, it can be said that the NRB's preparedness at this stage marked the inception of the FinTech revolution in Nepal. This was driven by the swift actions of banks to integrate mobile banking services, PSPs, and PSOs and the increasing trend of e-commerce in the country.

This is corroborated by IFC's Nepal Financial Inclusion Report of 2023, which reveals a substantial growth in the adoption of FinTech among Nepalese consumers. Mobile banking users grew at an impressive compound annual growth rate of 45 percent in eight years and reached 21.4 million users, or 69.9 percent of the population, by mid-July 2023. QR-based payments also experienced a surge, with an increase in transaction volume from NPR 7.8 billion in 2022 to NPR 20.8 billion in mid-March 2023. Notably, government revenue collection has seen a digital shift, with 30 percent attributed to digital payments and 90 percent of transactions executed digitally. The widespread adoption of PSP applications, downloaded by more than 10 million users, has facilitated utility payments, purchases, subscriptions, and more. These apps enable seamless money transfers and have boosted e-commerce and merchant payments. Commercial banks, such as NIC ASIA and Machhapuchchhre, have introduced innovative voice-based QR payments, which benefit visually impaired users.

The NRB has been instrumental in fostering new regulations and guidelines for the development of Nepal's FinTech industry. The Payment and Settlement Act introduced by the NRB in 2019 provided the legal basis for the development, expansion, promotion, monitoring, and regulation of the payments, settlement, and clearing systems in Nepal. The majority of commercial and corporate banks in Nepal promptly responded to the demand for digital banking and offered customers user-friendly mobile banking features, which included mobile recharge and bill payments.

Currently, Nepal boasts nine registered PSOs, with Fonepay and connectIPS emerging as highly popular choices. Fonepay, developed by F1Soft International, integrates with numerous banks to provide digital banking networks and transaction settlements. Similarly, connectIPS, launched by NCHL, empowers banks to independently verify consumer accounts and link them to the application portal for seamless inter-banking and payment services. Both have seen significant growth in recent years.

Commercial banks, development banks, and finance companies have also obtained licenses to operate as PSPs. While PSOs, such as Fonepay and Smart QR, facilitate most mobile banking applications, PSPs, such as Khalti, eSewa, and IME Pay, have gained prominence with their digital wallet applications. These platforms empower users to conduct banking transactions, digital payments, bill payments, e-commerce transactions, and more through a unified application.

Industry players have developed the FinTech Alliance Nepal (FAN) to further grow the FinTech sector and encourage cross-pollination of ideas. FAN connects individuals through events and online communities, empowers them with resources and mentorship, ignites innovation through collaborative research and startup support, and fosters a vibrant FinTech ecosystem. This collaboration between stakeholders drives sustainable growth for Nepal's thriving FinTech scene.

Cooperative sector

About half of the 30,000 cooperatives in Nepal use core banking systems provided by private or local companies to maintain financial records. Out of 15,000 cooperatives, around 3,000 cooperatives are able to offer mobile banking services to their members. Around 1,000 of them currently offer mobile wallets and payment gateway facilities through third-party services. Only 50 to 60 cooperatives offer ATM services, as the Payment and Settlement Act of Nepal does not authorize cooperative banks and credit unions to directly provide ATM services.

A commercial bank is needed for cooperative banks to settle payments with third parties to reduce settlement risks. Certain cooperatives continue to face prolonged challenges, with limited internal capacity, inadequate infrastructure, and outdated technology. The management team lacks sufficient skills and qualifications to effectively handle production and business responsibilities. The functioning of cooperatives needs to be improved by enhancing their organizational, administrative, operational, and business capabilities. This can include providing training and development opportunities for cooperative members and employees to improve their skills.

Government schemes and incentives to facilitate and encourage DFS uptake

The government of Nepal supports the uptake of DFS and has launched three related initiatives:

Digital Nepal Framework (DNF) 2019

The DNF outlines a comprehensive strategy to drive digital transformation in Nepal, including the expansion of digital financial services. It focuses on creating a robust digital infrastructure, promoting digital literacy, and fostering innovation in DFS. The framework also seeks to facilitate digital payments, e-commerce, and e-governance to enhance service delivery and economic activities.

National ID (NID) and Know-Your-Customer (KYC) regulations

The government has mandated the use of biometrics for SIM issuance and has started to mandate National ID (NID) accessing government services. A fully integrated NID system will ease KYC procedures for customers.

Government-to-person (G2P) payments

The government has increasingly digitized G2P payments, including social benefits and government salaries. Nearly 90 percent of government expense transactions and around 30 percent of government revenue collections are now conducted digitally. This shift toward digital payments seeks to improve efficiency, reduce corruption, remove double-counting issues, and promote financial inclusion.

5. Strategic recommendations

Nepal's DFS journey has been marked by significant progress, spurred by technological advancements and catalyzed by the COVID-19 pandemic's unprecedented challenges. As the ecosystem evolves, it will be crucial to address existing challenges and capitalize on emerging opportunities to ensure the sustained growth and widespread adoption of DFS.

The NRB has ambitious and inclusive goals for increasing DFS use in Nepal. DFS could widen the digital divide in society if not implemented properly, despite its benefits. Access to DFS is widely available to all, but usage is most popular among the young. Further expansion of DFS, if not well-planned, could widen the gap between younger and older population groups. Similarly, DFS technologies are used by those who are more tech-savvy or have smartphones. This alienates the already marginalized groups—the poorest people who may lack access to smartphones and the internet. Nepal has announced its plan to graduate from the least-developed country group and become a developing country by November 2026. Digital financial services will pave the way for this transition.

This final chapter provides strategic recommendations for enhancing regulatory frameworks, infrastructure, and capacity building in Nepal to foster a more inclusive and robust digital financial landscape.

Recommendation 1: Enhance digital payment public infrastructure capacity and capability

The NRB has played a pivotal role in overseeing and fostering the growth of the country's payments infrastructure. The National Payment Switch in Nepal encompasses various components, which include the NCHL and Nepal Pay. While these components form the backbone of Nepal's national payment switch, the concept of a national payment switch, akin to that of some other countries, is still evolving. A national payment switch infrastructure, whether operated by central bank or a consortium of banks or private sector, should provide confidence to the participants which can lead to quicker adoption.

Nepal has explored the establishment of a payments infrastructure modeled after India's Unified Payments Interface (UPI). An interoperable infrastructure that supports domestic transactions and has the capacity to facilitate cross-border payments is being developed. The NRB has successfully piloted the retail payment switch operated by the NCHL, which functions as a Payment System Operator (PSO). Additionally, the NCHL has been progressing with the development of a domestic card switch. The NRB should prioritize the implementation of proposed enhancements and functionalities outlined in the National Payment Systems Development Strategy and the Retail Payment Switch.

Nepal has also been working to implement a federal identity document, the National ID Card, since 2018. The National ID Card is expected to replace the citizenship certificate requirement across government sectors by 14 January 2025, as mandated by the Ministry of Home Affairs. The full rollout of the National ID Card will enable financial institutions to use an eKYC system for expedited verification. Additionally, crucial components of digital payment infrastructure, such as a data exchange platform, automated registry

services, and a regulatory sandbox or innovation office, need to be developed to support a robust digital payment ecosystem.

Recommendation 2: Build upon existing financial literacy initiatives to include common citizens digital growth story

In 2019, the government of Nepal developed the Digital Nepal Framework to provide a blueprint for digital initiatives. It identified eight priority sectors and provided a road map to unlock the growth potential in agriculture, health, education, energy, tourism, finance, urban infrastructure, and digital foundations. This is a step in the right direction. Reports claim that around 90 percent of government expenditure and about 30 percent of government revenue have been mobilized electronically, and the trend continues to grow. This encouraging growth could help Nepal's digital financial ecosystem overcome the costs and barriers, like infrastructure challenge and rugged terrain.

However, most benefits of digital financial services are limited to a few segments of the population—primarily educated people and those in cities. As highlighted earlier, the NRB has worked on multiple national financial digital literacy initiatives. The NRB should further innovate ways to accommodate the community's rural and vulnerable sections to reap the benefits of DFS and financial innovations. Such DFS initiatives lay the foundation for a more efficient, less cash-dependent society.

Notably, a significant portion of Nepal's population lacks financial literacy. A baseline survey conducted by the NRB on financial literacy in Nepal in 2022 reported that the aggregate nationwide financial literacy was just 57.9 percent. The exponential growth of technology poses risks, such as identity theft and online scams. In response to these risks, the NRB can accelerate education campaigns to enhance awareness of banking and nonbanking establishments.

Stakeholders must also build a robust financial and digital literacy platform to improve awareness of the grievance resolution mechanism, share information on how to report fraudulent transactions, and communicate best practices for secure transactions, among other functions. The regulators, banks, and other players in the ecosystem should take measures to increase awareness. The NRB could also consider developing a platform for raising grievances regarding financial services under the regulatory purview of the NRB.

Recommendation 3: Create enabling conditions for innovation in the private sector

The NRB has played a catalytic role in fostering innovation across DFS. As pointed out earlier, continued initiatives around digital lending, payment switches, and sandbox ideas, among others, will be critical in pushing the private sector toward innovation.

However, greater digitization demands better infrastructure to maintain user experience. This will be an ongoing need as more people join the digital bandwagon. The NRB can look at some more challenges that persist in the DFS space, such as inadequate and disaggregated digital infrastructure, insufficient interoperability among service providers, multiple regulatory windows, and a lack of foreign investment.

Customer data protection guidelines will be required to prevent providers from misusing data. Innovative FinTech players such as Khalti, eSewa, IME Pay, and QPay, which handle significant amounts of customer data, would benefit from well-defined data-sharing regulations. Such guidelines would provide clarity for all stakeholders regarding data protection.

Banks have been working to develop digital products both on the asset and liability sides. While these players can manage innovation, they need support from the NRB with enabling policies on aspects, such as open banking, digital banking, reduced digital transaction costs, reliable payment infrastructure, customer protection guidelines, fraud prevention guidelines, and interoperability, among others.

The NRB can support the private sector in its search for infrastructure capital. An example here would be the Payments Infrastructure Development Fund (PIDF) in India. The PIDF is a program initiated by the Reserve Bank of India in collaboration with major authorized card networks. The fund was established to support the expansion of payment acceptance infrastructure, particularly in Indian cities with less than 50,000 population and in India's northeastern states. The PIDF seeks to subsidize the deployment of payment acceptance devices, such as physical POS terminals, QR codes, and other digital payment solutions, to encourage a wider adoption of digital payments across India. Such an initiative in Nepal could foster innovation.

With these programs and guidelines, the current momentum of the digital payment system would support the growth of the comprehensive digital ecosystem required to develop the economy for the future.

Recommendation 4: Help SMEs adopt digital solutions

The adoption of digital financial services offers substantial advantages to SMEs, enhancing both their operations and growth prospects. SMEs are the engines of growth and are key to generating employment. Digital and FinTech solutions that have emerged on the rails of the DFS policies of the NRB have provided streamlined and convenient access to financial services, which have enabled SMEs to manage their finances more efficiently. However, this success needs to be replicated across the SME sector.

The NRB, in consultation with industry players, can examine the regulatory reforms needed to facilitate adoption of FinTech solutions by SMEs. Digital tools facilitate faster and more accurate payment processing, which improves cash flow management. Overall, the integration of digital elements into SME operations empowers these businesses to remain competitive and agile. While the adoption of digital solutions brings numerous benefits for SMEs, they may also face several challenges and barriers when they attempt to adopt FinTech solutions.

The NRB should consider additional financial literacy initiatives tailored specifically for SMEs. Many SME owners are not digitally literate. Therefore, they may not fully understand how these technologies work and how they could integrate them into their existing operations.

Additionally, access to finance remains a problem for SMEs in Nepal. The NRB can develop ways to introduce cash-flow-based loans for the sector. This would be a departure from the traditional lending format and would greatly help reduce the SME financing gap. The [PSB59 loans](#), an initiative by the RBI to enable digital lending to MSMEs in India, is one such example.

Recommendation 5: Provide a boost to Nepal's FinTech sector

Nepal has made significant strides in the realm of FinTech. It has adopted technologies, such as payment gateways, cashless payments, and online banking. The NRB laid the rails for FinTech innovation through its payments infrastructure.

FinTech encompasses a wide range of technological advancements that reshape traditional financial services. At its core, FinTech is primarily used to help consumers, low-income segments, farmers, SMEs, companies, business owners, and others manage their financial operations better. FinTech innovations have been revolutionizing the way businesses and consumers engage with money—from mobile banking to digital payments, from automation to artificial intelligence.

Additionally, these innovations have emerged as a transformative force to address and mitigate challenges faced by different industries—SMEs, agriculture, health, education, construction, and others. From streamlined digital lending processes to digital payment solutions, new technologies have revolutionized how these sectors manage cash and digitize their operations. Much of FinTech in developing countries has been focused on credit and savings.

However, Nepal's FinTech sector is fairly nascent. A few FinTech companies in the country offer DFS products and services. However, the FinTech product and service needs of the low- and moderate-income (LMI) segments and have solutions to provide a good UI/UX, and solutions.

The NRB should consider issuing guidelines to implement innovative products. The global landscape of financial technology is diverse and encompasses various innovations. These span the integration of banking data with third-party financial services, the application of artificial intelligence and big data analytics to discern consumer behavior patterns for credit risk assessment and enhanced services, and the use of blockchain for secure transactions and agreement validation.

The NRB has already been proactively thinking of a sandbox for innovation, which is a step in the right direction. This sandbox, inspired by those in other countries, will encourage experimentation in different sectors, such as blockchain, payments, credit underwriting, cross-border payments, and other priority areas for Nepal. The NRB can lay down detailed working guidelines for the sandbox.

Additionally, the FinTech sector needs capital and clear guidelines within whose ambit they can innovate. The NRB can create policy guidelines around promising areas, such as data sharing, customer data protection, stakeholder data sharing, and digital lending, which are already in the pipeline. The NRB should also facilitate dialogues between FinTechs and financial institutions to foster active collaboration. These steps will significantly enable the growth of digital financial services.

Recommendation 6: Enhance cross-border payment solutions

Nepal's expanding international trade and significant reliance on remittances necessitate low-cost, accessible cross-border payment solutions for both businesses and individuals. As businesses grow internationally and more migrants remit money back home, seamless and affordable international transactions are essential for economic growth.

To facilitate cross-border transactions, Nepal has adopted international payment gateways like PayPal, Stripe, and Skrill, which allow businesses to send and receive money globally. However, challenges such as high transaction fees, limited local currency settlement, and restrictions tied to "dollar accounts" limit their full potential. To address these challenges, the NRB should explore integrating regional payment platforms to reduce costs and reliance on international gateways. This step would create an efficient and more affordable payment system, benefiting businesses, particularly small and medium enterprises, by lowering the barriers to global trade and helping boost Nepal's GDP.

Simultaneously, the NRB has made significant strides in facilitating remittances, especially through the Indo-Nepal corridor. The recent integration of India's UPI and Nepal's NPI fast payment systems allows users to make instant, low-cost fund transfers, including QR code-based payments. This move enhances financial connectivity between India and Nepal, enabling easier remittance transfers and payments for travelers and migrants in both countries. However, more efforts are needed to expand these systems, ensuring remittances can be easily sent via formal channels.

Collaboration between the NRB, the Ministry of Labor, Employment and Social Security, financial institutions, and money transfer operators should be strengthened to promote formal remittance channels. Financial literacy programs targeting migrant workers and their families should be expanded to raise awareness and encourage the use of formal financial services. In addition, the NRB should leverage gender-disaggregated remittance data to develop more inclusive financial solutions for migrant workers and recipients. These solutions might include credit and savings products, which remain underutilized in the current system.

By addressing both business needs for cross-border payments and remittance facilitation, Nepal can create a more inclusive, secure, and efficient financial ecosystem that supports the country's growing global integration and its vital migrant worker community.

Recommendation 7: Strengthen cybersecurity, anti-money laundering, terrorist financing and proliferation financing measures

As Nepal's DFS sector continues to expand, it is imperative to address both cybersecurity and anti-money laundering (AML), terrorist financing (TF), and proliferation financing (PF) risks to ensure a secure and compliant financial environment.

The NRB should enforce comprehensive security protocols across financial institutions to enhance cybersecurity. These protocols include mandates for regular security audits, implementation of advanced authentication methods, such as multi-factor authentication and encryption, and development of tailored cybersecurity guidelines for DFS providers. Public awareness campaigns and training programs should also be conducted to educate both consumers and financial service providers on best practices to protect against cyber threats. Concurrently, the NRB must strengthen regulations to address AML, TF, and PF risks associated with new payment methods. Financial institutions should be required to implement robust know-your-customer procedures, conduct thorough transaction monitoring, and report suspicious activities. The full-scale implementation of the National ID will facilitate financial institutions' adoption of eKYC procedures. Additionally, the NRB's [goAML system](#), which enables the reporting of suspicious activities, should be used effectively. The [AML/CFT National Strategy and Action Plan 2081-82 - 2085-86](#) emphasizes the need for more effective preventive and regulatory measures.

The Government of Nepal is committed to improving legal and institutional frameworks, risk-based regulation, supervision, investigation, prosecution, and asset confiscation. Efforts should focus on high-risk sectors, including banking, cooperatives, securities, real estate, precious metals, and casinos, and on controlling criminal activities that exploit legal entities or conceal assets across borders. Moreover, a dedicated task force should be established to continuously assess and address risks related to new payment technologies, which will ensure regulatory measures remain effective and adaptive to evolving threats. The NRB will enhance the overall security and integrity of Nepal's digital financial ecosystem through the integration of robust cybersecurity measures with stringent AML, TF, and PF controls, fostering greater trust and stability in digital transactions.

Recommendation 8: Ensure consumer protection and data confidentiality

As Nepal's digital financial ecosystem expands, ensuring robust consumer protection and data confidentiality becomes increasingly critical. With the rise in digital payment systems and online banking channels, users face heightened risks related to fraud, data breaches, and unauthorized access. The NRB must address these concerns through the implementation of comprehensive regulations and safeguards that protect consumers from such risks.

The NRB can prioritize the development and enforcement of stringent data protection laws that align with international standards. This includes ensuring that financial institutions adhere to best practices for data security, such as encryption, secure authentication methods, and regular security audits. Consumer protection measures must also be strengthened to provide clear channels for customers to address grievances related to digital transactions and financial services. Although the Financial Consumer Protection and Grievance Management Manual of 2020 addresses many of these aspects, limited digital literacy among consumers remains a challenge in maintaining data confidentiality.

Public awareness campaigns are crucial to educate users about potential risks and best practices to safeguard their personal information. Training programs and resources should be available to consumers and financial service providers to enhance their understanding of data privacy and security protocols.

Furthermore, the NRB's Financial Inclusion and Consumer Protection Division should play a key role in overseeing compliance with data protection regulations and consumer protection standards. This division should monitor and address violations to ensure financial institutions uphold their obligations to protect consumer data and maintain transparency.

By reinforcing consumer protection and data confidentiality measures, the NRB will foster greater trust in digital financial services and thus support broader adoption and stability across Nepal's financial ecosystem.



6. Annexes

Annex A: Overview of Nepal's financial sector

Nepal's financial sector consists of banks, NBFIs, cooperatives, insurance companies, and other asset management companies. All these institutions provide financial services and products to the country's citizens. They cater to varied customer segments and design products and services to meet the needs of their customers, which include individuals, businesses, institutions, and government bodies.

Regulators play a key role in driving a harmonious financial system in a country. The NRB has been instrumental in doing so and has moved at the pace of other regulators from across the globe. It is on a path to use both innovation and enabling regulations to build a thriving digital financial ecosystem in Nepal.

Banks and Financial Institutions*

SN	Type	Institutions
1	Class: "A" (Commercial Banks)	20
2	Class: "B" (Development Banks)	17
3	Class: "C" (Finance Companies)	17
4	Class: "D" (Micro Finance Financial Institutions)	52
5	Infrastructure Development Bank	1
6	Others	
A	Cooperative	1
B	Hire Purchase	10
C	Representative Offices	3
D	Hydropower Investment and Development	1

Payment System Operator (PSO) and Payment System Provider (PSP)**

1	Payment System Operator (PSO)	9
2	Payment Service Provider (PSP)	26

*List of BFIs (As of Mid Oct 2024)

**List of PSO and PSP (As of Mid June 2024)

Source: The NRB (mid-May 2024), Nepal Insurance Authority, and Department of Cooperatives

1. Banking sector

Structure and types of banks

Today, Nepal’s banking sector comprises a diverse array of financial institutions, including commercial banks, development banks, finance companies, and microfinance institutions. The NRB has classified the banking sector into five different classes per the Banking and Financial Institution Act 2073 of 2017. In this classification, the “A” class comprises commercial banks, the “B” class comprises development banks, the “C” class comprises finance companies, and the “D” class is made up of microfinance institutions and infrastructure development banks. As of May 2024, Nepal had 20 commercial banks, 17 development banks, 17 finance companies, 55 microfinance institutions, and one infrastructure development bank.

Market penetration

The market penetration of banking services in Nepal has been increasing steadily. Urban areas exhibit higher levels of banking penetration than rural regions, where access to banking services remains limited. Efforts by the government and financial institutions to expand branch networks and promote digital banking are gradually bridging this gap and have brought in more of the population into the formal financial system. The population per branch served, as seen in Table A.1, averages 2,516 people—a number that has been decreasing considerably due to the use of digital financial services. When comparing the past five years (Table A.2), we see a significant decrease in the number of people each branch serves.

TABLE A.1: POPULATION PER BRANCH SERVED BY FINANCIAL INSTITUTIONS AS OF MID-APRIL 2024 (THE NRB, 2024)

Province	Number of branches of financial institutions					Population per branch served
	A	B	C	D	Total	
Koshi	761	195	36	871	1,863	5,001
Madhesh	584	84	51	1,056	1,775	8,504
Bagmati	1,834	335	108	766	3,043	2,686
Gandaki	594	191	37	578	1,400	3,001
Lumbini	735	257	47	1,153	2,192	4,930
Karnali	208	21	3	237	469	7,278
Sudurpaschim	326	52	6	464	384	7,018
Total	5,042	1,135	288	5,125	848	2,516

TABLE A.2: POPULATION PER BRANCH SERVED BY A, B, AND C CLASS FINANCIAL INSTITUTIONS

Province	Population per branch served [A+B+C class institutions]*				
	2019	2020	2021	2022	2023
Koshi	6,015	5,512	5,361	5,027	5,001
Madhesh	11,269	10,189	9,725	8,828	8,600
Bagmati	3,775	3,353	3,184	2,723	2,704
Gandaki	3,685	3,302	3,193	3,006	2,979
Lumbini	5,661	5,338	5,226	4,918	4,874
Karnali	9,593	9,140	8,661	7,600	7,341
Sudurpaschim	8,783	8,120	8,057	7,006	6,963
Total	5,776	5,255	5,065	4,566	4,515

*Data taken for mid-July of each year

2. Non-banking financial institutions

Nepal's NBFIs play a crucial role in the country's financial ecosystem and complement the services provided by traditional banks. These institutions are made up of cooperatives, insurance companies, the Social Security Fund), the Citizen Investment Trust (CIT), the Employee Provident Fund (EPF), and the Postal Saving Bank.

Cooperatives

Cooperatives are grassroots financial institutions that mobilize savings and provide credit facilities to their members, particularly in rural and semi-urban areas. They play a significant role in financial inclusion as they offer accessible financial services to those who may not have access to traditional banking facilities. Cooperatives often support agricultural activities, small-scale industries, and microenterprises. They also help develop the economy and empower the community. Nepal has a total of 29,886 cooperatives operational in the country that serve 7,307,463 members, of whom 4,092,395 are men and 3,215,068 are women. The sector provides direct employment to 88,309 people.

Insurance companies

Insurance companies in Nepal provide a wide range of products, including life, health, property and vehicle insurance. These companies help manage risk and provide financial security to individuals and businesses. The Nepal Insurance Authority regulates the insurance sector, which ensures that companies adhere to established standards and practices and protect policyholders' interests. As of mid-July 2023, Nepal had 34 insurance companies.

Social Security Fund

The Social Security Fund (SSF) is a government-managed fund designed to provide social security benefits to workers in the formal sector. It covers various programs that include medical care, maternity benefits, accident and disability benefits, and pension plans. The SSF seeks to enhance social protection and provide financial stability to employees, improving quality of life and economic security.

Citizen Investment Trust

The Citizen Investment Trust (CIT) is a government-owned financial institution that encourages savings and investment among citizens. It offers various investment programs, including mutual funds, pension plans, and retirement savings plans. The CIT plays a vital role to mobilize domestic savings for productive investments and contribute to the overall development of the country's financial market.

Employee Provident Fund (EPF)

The Employee Provident Fund (EPF) is a government-managed mandatory savings program for employees in the formal sector. The EPF collects contributions from both employers and employees. It provides a lump-sum payment upon retirement, resignation, or death. The fund seeks to ensure financial security for employees to support them in retirement and foster long-term savings habits.

Postal Saving Bank

The Postal Saving Bank is a government-run savings institution that operates under the General Post Office of the government of Nepal's Postal Services Department. It provides basic banking services, such as savings accounts and fixed deposits, particularly for rural and underserved populations. The Postal Saving Bank uses the extensive network of post offices across the country to make financial services accessible to remote and rural communities. This institution plays a critical role to promote financial inclusion and mobilize savings at the grassroots level.

Annex B: DFS products

Nepal's DFS providers have been instrumental in offering diverse products designed to meet the needs of various customers, from individual consumers to small businesses. These products seek to enhance convenience, accessibility, and security in financial transactions. Below are some of the key digital products offered by DFS providers in Nepal:

Mobile banking applications

Mobile banking applications have become a cornerstone of DFS in Nepal. These apps allow customers to perform a variety of financial operations directly from their smartphones. Typical app features include:

- **Fund transfers:** Facilitates both intra-provider and inter-provider transfers.
- **Account management:** Allows viewing of account balances, transaction history, and statements
- **Bill payments:** Facilitates the payment of utility bills, school fees, and other service payments
- **QR code payments:** Allows easy and quick payments to merchants through QR codes
- **Digital loans:** Provides quick loan approvals and disbursements. Many banks have integrated loan services into their apps. Some banks offer this service exclusively to individual customers with payroll accounts, while others offer it to all savings customers who maintain a minimum balance in their accounts.

- **Card management:** Facilitates requests for new debit or credit cards and the management of existing ones, which includes the blocking of lost cards
- **Cheque services:** Requests for new cheque books and stopping cheques
- **Investment services:** Facilitates the application for shares, IPOs, FPOs, and debentures and the application for fixed deposits and their management
- **Bill payments:** Facilitates the payment of utility bills, school fees, and other service payments

Internet banking

Internet banking provides a robust platform for customers to manage their finances online. It generally offers higher transaction limits than mobile banking. Key features include:

- **Higher transaction limits:** Facilitates larger fund transfers and payments
- **Enhanced security:** Provide multiple layers of authentication and encryption
- **Comprehensive account services:** Provide detailed account management tools
- **Payment services:** Similar to mobile banking

Digital wallets

Several DFS providers offer digital wallets, which are popular for their convenience and ease of use. Key features include:

- **Quick payments:** Allows instant payments to merchants and peers
- **Top-up services:** Facilitates mobile phone recharges and internet services
- **Bill payments:** Utility bills, school fees, and other service payments.
- **Integration with bank accounts:** Allows seamless fund transfers between bank accounts and wallets.
- **Link account features:** The linkage of multiple bank accounts and direct payment from them reduces the hassle of money transfer to wallets.

Contactless payments

DFS providers have introduced contactless payment options, such as near field communication technology, which allows customers to make transactions through a tap of their cards on the POS machines.

Merchant services

Financial institutions also onboard merchants to offer digital payment solutions to customers. The online and offline merchants of the acquiring financial institutions provide digital acceptance infrastructure through traditional POS devices or QR codes. There are players who also offer e-commerce payment gateways for online acceptance of payments through various digital channels.

Cross-border payments

Some DFS providers have announced that they will soon offer digital solutions for cross-border payments, which will make it easier for businesses and individuals to transfer money internationally with competitive exchange rates and lower fees. Companies, such as Khalti and Fonepay, have

already introduced cross-border payment facilities through their collaboration with India's NPCI International Payments Ltd (NIPL). Now, Khatli and Fonepay will accept payments from Indian tourists through Indian digital wallets. NIPL and NCHL have also formed a strategic partnership to integrate India's UPI and Nepal's NPI to enable cross-border payments.

The comprehensive suite of digital financial products offered by DFS providers in Nepal shows their commitment to enhancing financial inclusion and convenience. These products make financial transactions more accessible and promote a cashless economy. The DFS products are essential for Nepal's economic growth and development.

Annex C: Major policies of the NRB related to DFS

Year	Name of the policy/initiative	Brief	Impact
2014	<u>National Payment System Development Strategy</u>	The NPSDS is a comprehensive roadmap formulated by the NRB to modernize and enhance the country's payment system. The strategy seeks to create a secure, efficient, and inclusive payment system that supports financial stability and economic growth. This strategy discusses and outlines the development of the National Payment Switch.	The NPSDS laid the foundation for the development of digital payments in Nepal. It highlighted the role, scope, objectives, and features of a National Payment System. It also laid out nine pillars of NPS that encompass legal frameworks, settlement mechanisms, retail systems, government payments, oversight mechanisms, as well as the cooperative framework for modern payment systems.
2015	<u>Payment System Department (PSD)</u>	The PSD was established in 2015 under the NRB's organizational structure. The PSD formulates policies, issues licenses to PSOs and PSPs, regulates and inspects PSOs and PSPs, and enables the private sector to promote digital payments.	The PSD's efforts to facilitate digital payments have led to improvements in payment infrastructure, including the introduction of the NPS and QR code standardization. This has made digital transactions more efficient and accessible.

2018	<u>Payment System Oversight Framework</u>	The annual Payment Systems Oversight Report, published by the NRB, further emphasizes Nepal's commitment to a robust payment system framework. This report offers transparency and details the development of the country's payment systems and the PSD's oversight activities. By making this information public, all stakeholders remain informed about the system's health and efficiency, which builds trust and confidence in Nepal's digital payment landscape.	An emphasis on operational reliability and efficiency ensures that payment transactions are processed smoothly and promptly, which benefits both consumers and businesses. The framework also enhances public trust and confidence in payment systems because of its robust consumer protection measures.
2019	<u>Digital Nepal Framework</u>	The Digital Nepal Framework seeks to help Nepal grow through the use of new technologies to boost its economy and society. Under the Digital Nepal framework, eight sectors—digital foundation, agriculture, health, education, energy, tourism, finance, and urban infrastructure—have been identified based on close stakeholder engagement.	The <u>Nepal Financial Inclusion Report 2023</u> shows that mobile money transactions in terms of value have increased from 1.47 percent of GDP in 2019 to 10.97 percent in 2021.
2020	<u>Payment and Settlement Bylaw</u>	The Payment and Settlement Bylaw of 2020 was designed to oversee and manage the payment and settlement systems within Nepal. This bylaw seeks to enhance the security, efficiency, and reliability of financial transactions and thus foster a stable and inclusive financial environment.	The bylaw promotes a variety of electronic payment options to make it easier for customers to conduct transactions without relying on cash. The bylaw encourages competition among payment service providers, which can lead to reduced transaction fees for merchants. This would make digital payments more cost-effective.

2021	<u>National Payment Switch (NPS)</u>	<p>The National Payment Switch in Nepal is a core infrastructure designed to handle and settle retail transactions within the country. It seeks to ensure interoperability between card and non-card-based payments and make it easier for people and businesses to transact.</p> <p>The first phase of the National Payment Switch came into operation in November 2021 through the establishment of a <u>retail payment switch</u> with Nepal Clearing House, which began its services after it received operational approval from the NRB.</p> <p>The central bank's strategy to promote digital payment services in Nepal focuses on several key areas. It seeks to strengthen the legal and regulatory framework, enhance digital retail payment systems, and enable government and remittance payments directly to transaction accounts.</p>	<p>The introduction of the National Payment Switch has received positive responses from financial firms and customers alike <u>due to its high security and easy user interface</u>, which has increased the popularity of DFS.</p>
2021	<u>Nepal QR Standardization: Framework and Guidelines</u>	<p>This standard has been introduced to bring uniformity and provide equal opportunity for all players in the payment space. The standard creates a provision for three major payment principles—interoperability, scalability, and security.</p>	<p>Between Mid July 2021–Mid August 2021, the NRB recorded approximately <u>1.3 million QR-based payments, which totaled NPR 5.1 billion</u>. In 2023, this figure surged to <u>11.2 million transactions</u> and amounted to approximately <u>NPR 30 billion</u>. The standard emphasizes security measures and ensures that QR code payments are secure, building trust, and encouraging wider adoption of digital payments.</p>

2022	<u>Digital Lending Guidelines</u>	The Digital Lending Guidelines set specific loan limits, with a maximum of NPR 500,000 for salaried employees and professionals and NPR 200,000 for others. Borrowers have a maximum repayment period of three years. All processes, including documentation applications, must be handled digitally.	Borrowers experience less hassle and paperwork with streamlined online processes and faster approvals. This improved borrowing experience enhances customer satisfaction and loyalty toward financial institutions that embrace digital lending. Digital lending reduces operational costs for financial institutions in branch creation and human resources.
2022	<u>Financial Literacy Framework</u>	This framework plays a crucial role in establishing a systematic approach to financial literacy initiatives in Nepal. Based on this framework, operating guidelines, training manuals, and monitoring and evaluation methodologies will be produced, which will provide diverse activities with a standard foundation that comprises the NRB's vision, mission, goals, and objectives for financial literacy.	
2022	<u>Baseline survey on financial literacy</u>	This survey was the first of its kind carried out by the NRB to assess the status of financial literacy in Nepal.	The data gathered from the survey will inform policy practitioners to design tailored solutions to improve financial literacy and thereby develop financial inclusion in Nepal. It does not have any immediate or direct impact on consumers or service providers.
2023	<u>Cyber Resilience Guidelines</u>	The NRB has enforced the Cyber Resilience Guidelines that seek to improve the measures implemented by BFIs to protect their clients from possible risks to online transactions. The guidelines cover five key risk management categories—governance, identification, protection, detection, and response & recovery.	The implementation of the CRG will encourage customers to trust DFS and thereby increase its usage. It will also compel BFIs to invest in robust cybersecurity infrastructure, tools, and personnel to adhere to the guidelines, resulting in a secure financial environment.

2024	<u>Integration of UPI and NPI</u>	A <u>regulatory term of reference</u> was signed in February 2024 between the NRB and RBI to integrate Nepal's NPI and India's UPI. This will allow Indian travelers to pay through QR codes in Nepal with their domestic UPI handles.	<p>For suppliers, such as banks, MFIs, FinTech companies, and cooperatives, this integration opens new avenues for cross-border transactions and expands their reach and customer base. It also streamlines processes, potentially reduces costs, and increases efficiency.</p> <p>On the demand side, individuals, merchants, and businesses in both countries will benefit from faster, cheaper, and more convenient cross-border remittances. Integration will foster financial inclusion, particularly for individuals who previously relied on informal channels, and simplify transactions for businesses engaged in cross-border trade.</p>
------	-----------------------------------	--	--

Annex D: Progress in RPS and NPSSDS

Policy	Pillars	Proposed measures	Progress
National Payment Systems Development Strategy of 2014	Legal Framework	Payment systems in Nepal work in a sound and robust legal environment.	<ul style="list-style-type: none">• Significant policies, acts, and laws, such as the Licensing Policy for Payment Related Institutions of 2023• Payment and Settlement Act of 2019• Payment and Settlement Bylaw (First Amendment of 2023) of 2020• Payment Systems-related Unified Directives of 2023• NepalQR Standardization Framework and Guidelines of 2021 formed• Comprehensive Law on the National Payment System to be proposed

Settlement Mechanisms for Large Value and Time-Critical Payments	Settlement Mechanisms for Large Value and Time Critical Payments in Nepal are safe and efficient and comply fully with the Principles for Financial Market Infrastructure	<ul style="list-style-type: none"> • Since 2019, based on the mandate given by the Payment and Settlement Act, 2019 and the Payment and Settlement Bylaw (First Amendment, 2023), 2020, the NRB has been operating Real Time Gross Settlement (RTGS) system for large value and critical payments since September 12, 2019. • The NRB has also issued the RTGS System Rules, 2019 that incorporates the membership criteria, responsibilities of members, settlement rules, operating procedures of the RTGS system, and provisions related to Intraday Liquidity Facility (ILF) and Overnight Liquidity Facility (OLF), among others. As of mid-July 2023, there were 44 RTGS direct participants, and five currencies, NPR, USD, EUR, GBP, and JPY, could be used for currency settlements.
Retail Systems	Retail Payment Systems in Nepal are efficient, sound, and interoperable and support a wide range of payment instruments and services.	<ul style="list-style-type: none"> • Nepal's retail payment systems consist of cheque-clearing, electronic fund transfer, card payment systems, QR code-based payment, e-money, and remittances. • The Retail Payment Strategy of 2019 was formulated to modernize the retail payment system. • In addition, various advances have occurred in interoperability, such as linking to RTGS for settlement. • Licensing Policy for PSOs and PSPs to ensure that retail payment systems are in line with the targets of NPSDS.

Government Payments	Government Transactions. Government collection and disbursement are fully and efficiently integrated with the National Payments system in Nepal	<ul style="list-style-type: none"> Government officials have claimed that around 90 percent of government expenditure and 30 percent of government revenue have been mobilized electronically. The NRB's collaboration with the Customs Department to make collections electronically has been fully implemented.
Securities Depository, Clearing, and Settlement Mechanisms	Securities Depository, Clearing, and Settlement are safe and efficient, fully comply with international standards, and support the development of capital markets.	<ul style="list-style-type: none"> CDS and Clearing Limited has been providing a centralized depository, clearing, and settlement service. A separate automated Central Securities Depository (CSD) to support the GoN and its domestic debt operations has not moved forward. Developments on a regulatory and oversight framework for the CSD for GoN securities have yet to occur.
Interbank Money Market	Money markets. Interbank money markets are fully developed and closely integrated with settlement systems.	<ul style="list-style-type: none"> A modern interbank money market system has been established to facilitate the timely settlement of transactions in the RTGS system.
International Remittances	International remittances and other cross-border payments are distributed rapidly and conveniently in Nepal and are cost-efficient from the perspective of end users.	<ul style="list-style-type: none"> The NRB and RBI have signed a regulatory ToR to enable cross-border payments between Nepal and India. Indian citizens can now use QR codes to pay for their goods in Nepal. The NRB also oversees remittance providers and takes out various directives such as AML/CFT Directives for Money changers and Remittance companies of 2022 to ensure the safe and efficient provision of remittance services.

	Oversight of the National Payments System	The oversight and supervisory framework for payments and securities settlement systems is clearly defined, and the NRB exercises its oversight authority effectively in cooperation with other regulators and supervisors.	<ul style="list-style-type: none"> The NRB has clear legal authority to oversee payment and settlement systems in Nepal. The Payment Systems Department was established with this strategic direction. Furthermore, the Legal Framework on Pillar I has provided the strategic direction to perform oversight and supervisory activities to the NRB. The NRB also regularly publishes monthly statistics on payment systems and an annual payment oversight report to demonstrate the use of each payment system as tasked in the NPSDS.
	Cooperative Framework for the Payments System	Effective, structured, and fruitful cooperation is in place within the NPS	<ul style="list-style-type: none"> The National Payment Council (NPC) has not been established. However, interactions between the NRB and different stakeholders continue to happen on an ad hoc basis. The establishment of the NPC will be an extremely useful place to have secure, constructive discussions among all players and stakeholders with an interest in payments and security clearing and settlement systems.
Retail Payment Strategy of 2019	Strengthening the legal and regulatory framework	<p>Frame bylaws or regulations for the functioning of the Board, licensing, and operationalizing oversight responsibilities.</p> <p>Framing of regulations to facilitate opening and access to transaction accounts.</p> <p>Frame guidelines on KYC procedures and agent networks.</p>	<ul style="list-style-type: none"> Licensing Policies for PSOs/ PSPs have been revised. It also scrutinizes license issuance and refusal procedures. Regulations for agent network growth have been put in place. Previously a person could be an agent of only one single bank while now they can act as agents for multiple banks.

Deepening digital retail payment systems	<p>Tiered KYC approach to facilitate the opening of transaction accounts.</p> <p>Banks and financial institutions to have core banking or computerized banking activities to provide digital payment modes to such transaction account holders.</p> <p>Facilitate more use cases for e-money.</p> <p>Monitor expansion of agent networks.</p> <p>Make USSD payments available along with other digital retail payment modes, such as debit cards.</p> <p>Promote and mandate interoperability</p> <p>Facilitate faster payments.</p> <p>Increase availability of infrastructure such as ATM/POS and examine incentives for banks, PSOs, and PSPs to deepen access infrastructure and its reach.</p> <p>Encourage integration with payment gateway operators like Visa/ Master Card and domestic and global e-money providers</p>	<ul style="list-style-type: none"> • No information about transaction accounts in regards to tiered KYC or computerized banking activities. • Work needs to be done to make USSD payments available and accessible. • While interoperability has been mandated, it has not yet been implemented for wallet-to-wallet transfers. QRs are not yet universally interoperable. • The NRB incentivized banks to open additional branches. Commercial bank branches have now reached 752 out of 753 local levels. • Visa and MasterCard domestic debit card integration has been facilitated for e-commerce payments. However, global e-money providers are yet to be integrated. • Payment of travel and transit through licensed PSOs and PSPs is being made to facilitate faster payments.
--	--	---

Government remittances payment to the transaction account	<p>Coordinate with GoN for an interface between the Treasury Single Account and the General Ledger system of the NRB.</p> <p>Facilitate government payments in digital mode</p> <p>Usage of IPS for disbursement of social benefit transfers.</p> <p>Engage with the government for the usage of NPS for all payments/receipts of GoN.</p> <p>Promote market contestability, competition in remittance markets and review market needs and frame guidelines for acceptance of wallets issued overseas in Nepal.</p>	<ul style="list-style-type: none"> Government payments are being facilitated in digital mode with officials claiming that almost 90 percent of government expense transactions including G2P payments and social benefits are now digital with about 30 percent of government revenue collected digitally. The ToR signed between RBI and the NRB has facilitated cross-border payments and has made it easy for Indian wallet users to pay in Nepal through QR.
Settlement in Central Bank money	Settlement in RTGS.	<ul style="list-style-type: none"> Settlements have been taking place in RTGS.
Financial awareness, literacy, and access	<p>Fair pricing of payment products and services.</p> <p>Create awareness and literacy through information dissemination, requiring PSO/PSPs to initiate education campaigns, hold pre-departure programs for migrant workers.</p>	<ul style="list-style-type: none"> The NRB has been consulting with stakeholders to rationalize customer fees/charges, merchant discount rates, and lowered transaction costs. The NRB also publishes different materials in audio, video, and graphic format on its social media, hosts Global Money Week, and also mandates banks, PSOs, and PSPs to initiate similar campaigns to increase customer awareness and literacy.

	<p>Mandate banks, PSOs, and PSPs to communicate relevant information on all transactions taking place on their accounts.</p> <p>Setup of customer redressal centers to submit complaints and seek redressal.</p>	<ul style="list-style-type: none"> • All banks, PSOs, and PSPS provide information pertaining to all transactions taking place on a customer's accounts, such as debit, credit, and failure, among others. • PSOs and PSPs have also setup customer grievance redressal centers where users can submit complaints and seek redressals, although timely resolution of complaints is sometimes not done.
Oversight	<p>Facilitate inter-entity access to systems for PSOs and PSPs. Frame guidelines for "sandbox," and come out with minimum security standards.</p> <p>Draw up operational guidelines for implementing the Payment System Oversight Framework.</p> <p>Effective oversight of PSOs and PSPs and streamlining of oversight activities.</p> <p>Requirement of apps to be audited by an independent agency before launch and after updates with systems being audited annually.</p> <p>Examine concentration risks of the outsourcing by FIs.</p> <p>Data protection measures for customer security.</p>	<ul style="list-style-type: none"> • IFC and the NRB are working on a guideline to foster innovation, adopting a "sandbox" approach, which should be out by the end of the year. • Payment Systems Oversight Manual of 2021 was published to serve as a guide to implement the oversight function of payment and settlement systems. The audit of apps are not taking place currently. However, the NRB does publish monthly payment systems data and also has released the Cyber Resilience Guidelines of 2023 to manage cyber risks and increase cyber security.

	Advise banks, PSOs, and PSPs on minimum requirements for cyber security and risk management frameworks.
	Publish monthly payment systems data for all payment systems in Nepal.
Cooperation between authorities	<p>Requirement of KYC for SIM issuance, National ID for KYC, and using PKI for payment systems</p> <ul style="list-style-type: none"> • Biometrics are now required for the issuance of SIM. National ID is currently in the initial phases, where it has been made mandatory by the government to access government services such as making a new passport or renewing an old one. However, the API still has not been opened for integration with payment systems/services.

Annex E: Best practice cases from Asia

The examples of best practices below are from India, Bangladesh, and Viet Nam, where governments and regulators have supported DFS innovation. In these countries, DFS innovations have reaped rich dividends, advancing financial inclusion. Multiple stakeholders have been collectively involved in these respective markets to make these innovations happen. However, in most cases, the central banks in these countries have spearheaded these innovations. These cases can serve as reference points for stakeholders when they implement DFS initiatives in Nepal. While the context may differ, the lessons are still applicable and will provide a blueprint to implement key recommendations.

Digital lending guidelines - India

The FinTech sector in India has seen rapid growth. FinTechs have been working with banks and Non-Banking Financial Companies (NBFCs) to offer digital credit to customers. FinTechs predominantly worked in the first loss default guarantee (FLDG) model, where they shared the default risk to a certain extent. A few unscrupulous NBFCs converted this mechanism to their advantage and started to offer NBFC license-as-a-service. Under this, they would charge 80-100 percent FLDGs from FinTechs. Hence, the risk was entirely on the FinTechs to recover any lost capital.

The Reserve Bank of India (RBI) noted this and released the digital lending guidelines in 2022, which divided the lending sector into regulated entities and loan service providers (LSPs). As an LSP, a FinTech's role is limited to loan origination, and it is not permitted to act as a pass-through entity during the disbursement or repayment of loans from customers. The RBI wanted the partnering banks and FinTechs to get involved. The other key move from the RBI was to cap the FLDGs at 5 percent.

These guidelines seek to protect borrowers, ensure fair practices, and promote a transparent and responsible digital lending ecosystem. Prominent features include:

- Mandatory disclosure of all fees, charges, interest rates, and other key terms in a standardized format before disbursement
- A mandate for lenders to communicate the annualized percentage rate (APR) that encompasses all costs associated with the loan
- Prohibition of hidden charges or any costs not mentioned in the Key Facts Statement (KFS)
- Provisions for borrowers, who would have the right to exit the loan within a cooling-off period without any penalty, except for proportionate APR

How does this impact the customer?



- Provides more financial options
- Ensures they receive a Key Fact Statement (KFS) with every loan offer that clearly outlines all terms and conditions, including fees and interest rates
- Regulates collection of fees by lending apps
- Mandates compulsory reporting of all digital loans to the credit bureaus, regulating collection and usage of customer data by FinTech companies

Interoperability of digital wallets in Bangladesh

Interoperability is a key driver for the use of digital financial services. Until 2022, interoperability in Bangladesh was largely bilateral. A handful of players integrated with each other to provide wallet services. In 2019-20, a study was conducted to understand the feasibility of introducing interoperability in Bangladesh under the guidance of the Policy Advisory Committee (PAC) of the BFP-B Project, chaired by the Secretary of the Ministry of Finance's Financial Institutions Division.

After multiple deliberations, Bangladesh stepped into a new era of DFS in 2022 when it combined mobile financial services and financial institutions through a common application programming interface (API). The platform, referred to as the Interoperable Digital Transaction Platform (IDTP), enables money to be transferred between any financial service provider, including banks and mobile financial services (MFS).

The IDTP platform connected customers, merchants, payment processors, e-wallets, banks, financial institutions, payment systems operators, and government and private institutions.

After this innovation from the Bangladesh Bank, the digital wallet ecosystem has transformed how people transact, particularly in underserved areas.

How does this impact the customer?



- Allows digital wallet users to send money to MFS wallets and bank accounts and vice versa
- Enables merchants receive payments from their customers via any bank account or digital wallet and pay their suppliers
- Increases customer convenience by allowing one wallet to serve all needs
- Provides interoperability at zero cost

Bharat QR

Bharat QR (or Interoperable QR) has significantly propelled India's rapid digitization. This innovative payment system has revolutionized the way transactions are conducted, offering unprecedented convenience and inclusivity. Bharat QR has become a cornerstone of India's digital payment ecosystem by standardizing QR code payments across various payment platforms.

Bharat QR is a mobile payment system that allows customers to pay merchants directly. Developed jointly by NPCI, Visa, and Mastercard, it enables quick and easy payments through QR codes displayed at merchant locations. Customers can use their bank's mobile app to scan the code and pay without sharing any personal information with the merchant. The hallmark of Bharat QR is its ability to accept payments from multiple payment platforms, including debit cards, credit cards, and mobile wallets. Essentially, it provides a unified platform for merchants to accept payments without the need for multiple QR codes or payment terminals, simplifying the payment process for merchants and customers. Apart from this, it also has the following key benefits:

- Bharat QR adheres to stringent security standards, safeguarding customer data and transaction integrity. Bharat QR adds an extra layer of security by requiring a unique confidential PIN (mPIN) for each payment. This means that even if the customer loses their phone. These robust encryption and authentication mechanisms protect against fraud and unauthorized access.
- The system offers a streamlined process for merchants to adopt Bharat QR, making it accessible to businesses of all sizes.

How does this impact the customer?

With a single QR code, customers can make payments effortlessly using their preferred method, eliminating the hassle of carrying multiple cards or wallets.



- No additional charge is applied to customers who make payments via Bharat QR.
- Quick, efficient payments reduce waiting times and enhance the overall shopping experience.
- Bharat QR encourages a cashless society, promoting hygiene and reducing the risk of counterfeit currency.
- Many payment platforms offer reward points and cash-back incentives, adding value to the customer.

Interoperable QR / Bharat QR has emerged as a game-changer in India's digital payment landscape. By fostering interoperability, accessibility, and security, it has created a robust ecosystem that benefits both merchants and customers. As technology continues to evolve, Bharat QR is poised to play an even more pivotal role in driving India's cashless economy.

Social safety net payments through mobile financial services in Bangladesh

In Bangladesh, mobile financial services (MFS) have become a critical tool for the delivery of social safety net payments to vulnerable populations, especially in rural and underserved areas. The Agency to Innovate (azi), which helped digitize select social safety net programs, has championed MFS in Bangladesh. The transformative approach has revolutionized how government assistance reaches those who need it most and offers several key benefits:

- **Financial inclusion:** MFS has expanded financial access to 10 million previously unbanked individuals, particularly women, who can now receive government benefits directly into their mobile wallets. This provides them with a secure way to store and manage their funds and opens doors to other financial services, such as savings and credit.
- **Empowerment of women:** MFS has been instrumental in empowering women as it gives them direct control over their finances. This has led to increased financial autonomy and decision-making power within households.

Several government initiatives have specifically promoted the use of MFS for social safety net payments in Bangladesh:

- **Government-to-person (G2P) payments:** The government has increasingly shifted toward MFS platforms, such as bKash, Nagad, and Rocket, to disburse various social safety net payments, which include pensions, allowances, and disaster relief funds.
- **Collaboration with NGOs and development partners:** The government has collaborated with NGOs and development partners, such as the World Bank, to expand the reach of MFS and enhance financial literacy among beneficiaries.

How does this impact the customer?



- Enables previously unbanked individuals to access formal financial services, allowing them to receive government benefits directly and securely through their mobile phones
- Helps reduce leakages and corruption in the delivery of social safety net payments

PSB Loans in 59 Minutes platform by the Small Industries Development Bank of India (SIDBI)

Micro, small, and medium enterprises are the backbone of the Indian economy. They play a key role to bolster the GDP and generate employment. However, these businesses often struggle to access timely and affordable credit, which hinders their growth potential. The Indian government recognized this critical issue and launched the PSB (public sector bank) loans platform in 2019 through the Small Industries Development Bank of India (SIDBI).

A public limited company, Online PSB Loans Ltd, launched the portal www.psbloansin59minutes.com. SIDBI and other public sector banks hold a majority stake in this company. The portal facilitates in-principle approval of loans for MSMEs by various banks in 59 minutes.

The platform seeks to simplify the loan application and approval process for MSMEs, which allows them to secure loans that range from INR 1 million to INR 50 million within 59 minutes. This streamlined process reduces the turnaround time significantly and provides businesses with quicker access to much-needed funds.

How does this impact the customer?



- Permits better transparency
- Enables digital tracking of loan applications
- Allows customers to apply for loans from anywhere, at anytime
- Provides the option to select from multiple lenders
- Ensures the digital approval time is a maximum of 59 minutes, provided all the documents are in the proper format
- Enables loan disbursement within seven to ten working days of loan sanction

Stakeholders have lauded the implementation of PSB Loans in 59 Minutes as a significant step to improve financial inclusion for MSMEs in India. It has addressed the credit gap through a digital, transparent, and efficient lending process. The program's success has sparked further innovation in the FinTech sector, and numerous players now offer similar digital lending solutions.

Cashflow-based lending by FinTechs in India and Bangladesh

MSMEs in developing countries like India and Bangladesh often struggle with access to credit due to limited credit history and collateral. Most lending from formal financial institutions occurs after the institution assesses the MSMEs' balance sheets. Most lending is also collateral-based. This significantly hinders how well MSMEs get credit since they would not have the requisite collateral in place. As a result, the countries are faced with a widening credit gap.

The emergence of cash flow-based lending by financial institutions and FinTech companies has been transforming the lending landscape and offers a lifeline to these underserved businesses. FinTech lenders use innovative technology and data analytics to assess a borrower's creditworthiness based on their cash flow patterns, unlike traditional lenders that rely heavily on credit scores and collateral. This approach considers a business's actual income and expenses and provides a more accurate picture of its financial health and repayment capacity.

How does this impact the customer?



- Minimal paperwork requirements
- Alternative credit underwriting assesses the customers on parameters other than business metrics
- Business cash flow determines the loan approval, eliminating the need for collateral. Loan approval can be instantaneous in some cases.
- Funds are directly deposited into the customer's bank account, which allows them to promptly purchase the required materials for their enterprise. An offshoot of this could be invoice-based discounting.

Cash flow-based lending has been democratizing access to credit. It has leveled the playing field for MSMEs and fostered a more inclusive financial ecosystem. This innovative approach also benefits lenders, as it reduces the risk of default and provides deeper insights into borrowers' financial behavior. Some digital lenders in India include CASHe, Capital Float, KreditBee, Indifi, Mintifi, and NIRA, among others. They actively use the India Stack technology stack, which was built by the Government of India and is led by iSpirt.

SRO for FinTech in India and its benefits

India's FinTech sector has experienced exponential growth in recent years, introducing innovative financial products and services that have transformed how people manage their finances. However, this rapid growth also poses challenges for regulators regarding ways to keep pace with emerging technologies and ensure consumer protection. The Reserve Bank of India (RBI) recognized the need for a more collaborative approach to regulation to address these challenges. In January 2024, the RBI released a draft framework to recognize self-regulatory organizations (SROs) within the FinTech sector. The final framework was released in May 2024.

Benefits of SROs for FinTech:

- **Enhanced self-governance:** SROs enable the FinTech industry to take ownership of self-regulation, promote ethical practices, and ensure consumer protection.
- **Industry-led standards:** SROs can set industry-specific standards and codes of conduct to foster innovation as they maintain high quality and compliance standards.
- **Faster dispute resolution:** SROs can provide a quicker and more efficient mechanism to resolve disputes between FinTech companies and their customers, reducing the burden on regulatory authorities.
- **Regulatory flexibility:** The RBI's framework allows multiple SROs to cater to different sub-sectors within the FinTech industry and provides greater flexibility and adaptability to evolving technologies.

How does this impact the customer?



- SROs set and enforce industry standards, ensure fair practices, and address grievances, resulting in better protection for customers against fraud, mis-selling, and other unethical practices
- Improved trustworthiness, data security, and grievance redressal

Regulatory flexibility: The RBI's framework allows multiple SROs to cater to different sub-sectors within the FinTech industry and provides greater flexibility and adaptability to evolving technologies.

The presence of SROs in the FinTech sector will significantly enhance the customer experience. Customers will feel more confident in using FinTech products and services due to increased transparency, fair practices, and the availability of a robust grievance redressal mechanism. SROs play a crucial role to build trust and ensure that FinTech companies prioritize customer protection to foster a thriving and inclusive financial ecosystem.

The DPDPA Act in India and what it means for customers

The need for robust data protection legislation is greater than ever in the digital age, where personal data is often likened to a new form of currency. India recognized this imperative and took a significant step forward by enacting the Digital Personal Data Protection Act (DPDPA) in August 2023.

The DPDPA comprehensively safeguards individuals' digital personal data. Its inception marks a landmark moment in India's data protection journey. The act replaces a patchwork of sectoral laws and regulations with a unified framework that establishes clear rights and obligations for both data fiduciaries (entities that collect and process data) and data principals (individuals to whom the data relates).

The DPDPA draws inspiration from international best practices, particularly the European Union's General Data Protection Regulation (GDPR). However, it also considers India's unique socioeconomic context and technological landscape. The Act strikes a balance between protecting individual privacy and enabling data processing for legitimate purposes, such as business operations, research, and public interest.

How does this impact the customer?



- Receives clear notices from companies that explain how their data will be used and has the option to give or withhold consent before sharing their information
- Experiences a significant decrease in unsolicited messages
- Control of personal data, security, and transparency

National Payments Corporation of India (NPCI)—an entity that fosters innovation in digital financial services in India

The enactment of the Payment and Settlement Systems Act in 2007 provided the legal framework to establish and regulate payment systems in India. The Act outlined the rights and duties of various actors in the payments ecosystem, provided clearer legal context on topics, such as dispute resolution, and provided for a separate nongovernmental institution to operate retail payment systems. The Act gave the Reserve Bank of India (RBI) the power to authorize such an entity as long as public sector banks retained a majority shareholding.

NPCI, an umbrella organization for operating retail payments and settlement systems in India, is an initiative of the RBI and the Indian Banks' Association (IBA) under the provisions of the Payment and Settlement Systems Act, 2007, for creating a robust Payment & Settlement Infrastructure in India. The 10 core promoter banks are State Bank of India, Punjab National Bank, Canara Bank, Bank of Baroda, Union Bank of India, Bank of India, ICICI Bank Limited, HDFC Bank Limited, Citibank N. A. and HSBC. In 2016, shareholding was expanded to 56 member banks to include more banks representing all sectors. In 2020, new entities regulated by RBI were inducted, consisting of payment service operators, payment banks, and small finance banks.

How does this impact the payments ecosystem and customer?



- NPCI is an unbiased entity that works for the innovation of the payment ecosystem
- Easy-to-access products such as UPI and BHIM lead to greater financial inclusion.
- Digital payment solutions, such as BBPS, AePS, RuPay, and BHIM, have made financial transactions more convenient and accessible, with lower transaction costs than traditional payment methods.
- NPCI has implemented robust security measures to protect customer data and ensure secure transactions.
- The introduction of innovative payment solutions, such as UPI 2.0, UPI Lite, and UPI 123Pay, caters to the customer's evolving needs and provides them with a seamless payment experience.
- The Bharat Bill Payment System (BBPS) has made it easier for customers to pay their bills across various categories and offered a convenient and unified platform for bill payments. BBPS started under the NPCI but has now become a separate entity.

The RBI sandbox in India

The Reserve Bank of India (RBI) has been encouraging a flourishing and well-organized FinTech industry through a unique regulatory sandbox program. It was initially introduced in August 2019, followed by an update to the regulatory framework on 16th December 2020. The sandbox program allows qualified FinTech companies to experiment with their new financial products and services in a safe and controlled environment. The program brings together regulators, innovators, financial institutions, and consumers to ensure Indian customers always have access to high-quality financial services.

RBI introduced the regulatory sandbox program in 2019, based on the recommendations of the Working Group on FinTech and Digital Banking, set up by the Financial Stability and Development Council - Sub Committee (FSDC-SC). The RBI sandbox uses a cohort-based approach to test innovative financial products and services. The RBI announces specific themes for each cohort. These themes represent areas the RBI considers crucial for financial inclusion or development within the financial sector. The theme of the first cohort was "retail payments." As of 2024, five cohorts have completed the sandbox program.

How does this impact Fintechs?



- Fosters innovation through an environment to test innovative solutions
- Facilitates technological integration with providers in controlled environments to test technology-based solutions to improve customer service
- Provides a low-cost testing ground that helps refine and validate ideas before a successful market launch
- Encourages financial inclusion by speeding up innovation and technology adoption

Successful initiatives tested under the RBI sandbox are as follows:

- Paytm, one of India's leading digital payment platforms, used the RBI's regulatory sandbox to test its "Paytm Postpaid" feature, which allows users to access credit for transactions. The sandbox's controlled testing phase proved valuable, as it enabled Paytm to successfully refine and launch this credit product.
- Fincare Small Finance Bank, a modern financial institution in India, used the RBI's regulatory sandbox to test its biometric authentication system. This sandbox provided a safe space for the bank to assess and refine its technology and ensured a smooth and secure customer experience. The bank used the sandbox environment to pilot its biometric authentication system before its broader implementation.

The different avatars of Unified Payments Interface (UPI) in India

The UPI is a revolutionary real-time payment system developed by the NPCI in 2016. It enables instant money transfers between bank accounts using a mobile device, making transactions seamless and efficient. UPI supports both peer-to-peer (P2P) and person-to-merchant (P2M) transactions, enhancing its versatility. One of UPI's standout features is its ability to facilitate payments without the need for debit or credit cards, relying instead on a unique UPI ID or Virtual Payment Address (VPA). This system has significantly boosted digital payments in India, with over 350 million monthly active users as of 2024.

UPI's impact on the Indian economy is profound, saving consumers approximately USD 67 billion since its inception. It has also positioned India as a global leader in real-time payment transactions, accounting for 46 percent of all such transactions worldwide in 2022. The platform's success has made it a key component of India's digital public infrastructure, contributing to the country's digital transformation. India made about 13.8 billion transactions in June 2024, with a value of USD 0.24 trillion.

In the past few years, the NPCI has launched two more versions of UPI- UPI123PAY and UPI Lite.

UPI123PAY allows customers with feature phones to make payments. The NPCI launched UPI123PAY in March 2022. UPI123PAY is an instant payment system that allows feature phone or non-smartphone users to use the UPI payment service in a safe and secure manner. Through UPI123PAY, feature phone users can undertake a host of transactions based on four technology-based alternatives:

1. **An IVR (interactive voice response) number:** a designated number that a user can call to follow voice prompts and initiate a transaction.
2. **Feature phone app:** allows feature phone to be used for transactions.
3. **Missed call approach:** Users give a missed call to a merchant's number, which triggers a callback to confirm the transaction with a UPI PIN.
4. **Proximity sound payment:** This innovative method uses sound waves to facilitate contactless payments between devices.

The NPCI created UPI123PAY as it recognized the limitations of smartphones for some users, especially in rural, remote areas. This innovative system empowers 400 million Indian feature phone users to participate in the digital payment revolution. UPI123PAY paves the way for a more inclusive cashless economy through quick and easy transactions with their existing phones.

UPI Lite allows customers to make a transaction without using a PIN. UPI Lite is an on-device wallet launched in 2022 to simplify everyday payment solutions. It is a streamlined version of the UPI created for people who use basic phones or have unreliable internet connectivity. UPI Lite brings UPI's core benefits to devices with lower capabilities, which allow users to experience the ease of digital transactions.

UPI Lite is designed for quick and easy payments under INR 500 per transaction. The wallet can hold a maximum of INR 2000 at a time. It offers a faster and more convenient alternative to the traditional UPI method. Unlike UPI, UPI Lite transactions do not require PINs, which makes it a smoother experience for small, everyday purchases. The upper limit for total transactions is INR 4,000 in 24 hours. Unlike traditional UPI, one does not need to complete KYC (Know Your Customer) documentation to use UPI Lite. It comes with zero associated money transfer and account closure charges.

Despite the no-PIN feature, UPI Lite upholds security. The initial setup involves linking the bank account and setting a UPI PIN. Transactions are authorized with the use of secure on-device wallets. Some banks may also employ two-factor authentication for additional security.

The unique features of the National Strategy for Financial Education in India

In 2013, the RBI released the National Strategy for Financial Education (NSFE) to create a financially aware and empowered India. The second NSFE, focusing on the years 2020-25, was released in 2020.

The National Centre for Financial Education (NCFE) prepared the strategy in consultation with all the financial sector regulators. The strategy focuses on a multistakeholder-led approach to empower various sections of the population and help them develop adequate knowledge, skills, attitudes, and behaviors needed for better money management and future plans. The NSFE focuses on a “5 C” approach to enable financial education in the country:

1. **Content:** Financial education materials should be customized as per the specific needs of different demographics.
2. **Capacity:** The capacity and code of conduct for financial educators should be developed to guarantee high-quality and ethical financial education.
3. **Community:** Community-driven approaches should be encouraged to disseminate financial literacy sustainably.
4. **Communication:** The use of technology, media, and creative communication methods should be promoted to make financial education messages engaging and accessible to a wider audience.
5. **Collaboration:** The efforts of other stakeholders should be streamlined for financial literacy.

How does this impact the customer?



- Fosters the acquisition of financial literacy as a life skill
- Helps people make better financial decisions
- Encourages active savings behavior and participation in the financial market
- Helps customers make better choices about debt.

The NSFE caters to a diverse population as it goes beyond just financial knowledge. It seeks to develop financial skills and responsible money management habits and encourages healthy financial behavior. Through the NSFE, the Government of India strives to create a comprehensive financial literacy ecosystem that empowers all Indians to make informed financial decisions and achieve financial well-being.

VietQR and its features for customers in Viet Nam

VietQR, which the National Payment Corporation of Viet Nam introduced in 2019, is among the main drivers for the adoption of QR code payments in the country. VietQR acts as a single identity for all QR code payment and transfer services offered through the National Payment Corporation of Viet Nam (NAPAS) network. VietQR adheres to two key security standards. The first is EMV Co's QR payment standard, a globally recognized standard for secure QR payments. The second is the State Bank of Viet Nam's QR code regulations, which ensure compliance with local standards.

VietQR strives to establish a single, standardized system for QR code payments across Viet Nam and ensure the interoperability and synchronization of payment infrastructure. It allows customers to make quick and easy payments through their smartphone by scanning a QR code displayed at stores or restaurants or conducting person-to-person transfers through the same process of scanning a code. VietQR's convenience extends beyond everyday purchases. It is increasingly being used for essential payments, such as utilities, school fees, and hospital bills, with transactions increasing by 2.6 times in the last quarter of 2024.

How does this impact the customer?



- Ensures convenience as it allows customers to make quick and easy payments using their smartphone by scanning a QR code
- Ensures transactions are processed through the secure NAPAS network and adhere to EMV Co's global QR payment standards, which ensures the security and protection of sensitive data
- Offers competitive service fees compared to card payments, which makes VietQR an attractive and cost-effective option

VietQR has been rapidly gaining traction in Viet Nam. As per data from NAPAS, VietQR transactions doubled in the third quarter of 2023 to reach more than 100 million per month. This payment method appeals to a broad audience, and both young and older demographics have embraced its ease of use. Additionally, competitive service fees compared to card payments make VietQR an attractive option for sellers, particularly small retailers.

Regulatory sandbox in Viet Nam

Viet Nam's central bank, the State Bank of Viet Nam (SBV), has proposed a regulatory sandbox for the country's banking sector. The draft decree, issued on 4th March 2024, is based on the Law on Credit Institutions No. 32/2024/QH15, passed in January 2024. The sandbox focuses on three solutions provided either by credit institutions or FinTech companies—credit scoring, open application programming interfaces (APIs), and P2P lending. The regulatory sandbox will operate for a maximum of two years, beginning with the issuance of the registration certificate. The duration may vary based on factors, such as the complexity and innovation of the solution, which are determined at the SBV's discretion.

After companies complete the regulatory sandbox program, they can apply for extensions if the legal framework for their solution has not yet been finalized. These extension requests and a report on the sandbox results need to be submitted to the SBV at least three months before the program ends. Extensions are capped at two years in total, with a maximum of one year per extension. Companies can receive a completion certificate in two ways: Either if the legal framework for their solution is established, which would allow them to operate officially, or if their solution is deemed compliant with existing regulations, which would greenlight a full market launch.

How does this impact Fintechs?



- Provides a safe and controlled environment to test new solutions and business models
- Permits open communication with regulators, which provides valuable insights into regulatory expectations and requirements and reduces the risk of non-compliance later
- Demonstrates the viability of new FinTech innovations when they are taken to mass market
- Helps increase product efficiency by identifying potential risks before they impact a wider customer base
- Provides collaboration opportunities between banks and FinTech companies

Sathi Network of female DFS agents in Bangladesh

The Sathi Network came into being as part of efforts by the Bangladeshi government think tank Agency to Innovate (azi) to enhance the financial inclusion of women. Sathi was established in 2023 as a network of women-led service points. This network is staffed by dedicated female agents who provide vital financial services directly to women. The Sathi Network bridges the gender gap in economic participation and empowers women in Bangladesh through entrepreneurship, enhanced financial literacy, and access to financial services. The network currently has more than 300 female agents who specifically target unbanked and underserved women in remote areas. All Sathi agents undergo comprehensive training to become financial service providers, ensuring effectiveness.

The Sathi Network partners with banks and mobile financial service providers, and its agents bring financial services directly to these marginalized women. Financial service providers (FSPs) are responsible for recruiting women as Sathi agents and providing them with ongoing training to enhance their skills. These service points offer women control over their finances from anywhere and actively promote financial literacy. Marginalized women gain the knowledge and confidence to manage their assets independently through regular meetings and educational campaigns. Financial transactions become less intimidating as women gain awareness of their financial rights and responsibilities.

How does this impact the customer?



- Brings financial services closer to women through the physical presence of a network in remote areas and allows them to have direct control over their finances
- Empowers female agents to create a safe and comfortable environment for women, which builds trust
- Ensures financial literacy, allow women to make independent financial decisions, and reducing their dependency on others to manage money

More than 160,000 women have opened bank accounts through Sathi agents, which showcases the network's success in bridging the financial gap for women in Bangladesh. The Sathi Network's efforts align with multiple Sustainable Development Goals (SDGs) and targets. The network targets SDG Goal 5 (Gender Equality), SDG Goal 1 (No Poverty), SDG Goal 10 (Reduce Inequality), and SDG Goal 17 (Partnership for the Goals). The Sathi Network's success is built on a multipronged approach, which includes collaboration with institutions, integrated services, training for female agents, influence over policy changes, and a commitment to long-term impact.

The Regulatory FinTech Facilitation Office (RFFO) in Bangladesh

The Bangladesh Bank introduced the Regulatory FinTech Facilitation Office (RFFO) in 2019 to encourage more financial sector innovators to enter the market to promote financial services to the public. The RFFO was established as a preliminary step to create a supportive environment for the country's FinTechs and digital financing initiatives. The primary focus was on the analysis of FinTech products, how they interact with traditional finance, and the potential consequences they pose to the overall financial system's stability.

Before the RFFO issues a no-objection certificate (NoC) or grants a license, it engages closely with the FinTech service provider for a suitable regulatory response. It then realigns its regulation and supervision in response to the changed market conditions or suggests changes required from the FinTech provider instead. This collaborative approach ensures innovation and adequate risk management within the FinTech space.

A three-month pilot test is conducted once both the RFFO and the FinTech provider agree on a regulatory approach and risk management by making necessary adjustments to regulations or the FinTech's service to ensure that it is innovative and well-managed. This pilot period allows the RFFO to assess whether the product meets its intended goals and can be successfully launched for the public. Upon a successful pilot, a regulatory sandbox or innovation hub is established within a defined timeframe and market space. During this sandbox or hub phase, the Bangladesh Bank actively supports the project by optimizing the product's efficiency, managing potential risks, and seeking ways to expand financial inclusion.

How does this impact Fintech Founders?



- Paves the way to test a wider range of financial products and services for the mass market and provides access to new financial solutions
- Facilitates collaboration between financial institutions and FinTech companies, which can lead to the development of more user-friendly and efficient financial products
- Provides a safe testing environment to pilot test the product idea before widespread adoption, which mitigates potential risks associated with innovative solutions and protects consumers from unforeseen issues

The RFFO program is not limited to startups. Existing financial institutions can also collaborate to improve their offerings in areas such as payments, data analytics, and risk management. This openness fosters collaboration between established players and FinTech companies, which ultimately benefits customers by encouraging a wide range of financial solutions.

A Look at the Women's Financial Inclusion Data Partnership (WFID) in Bangladesh

In order to achieve a more equitable and effective financial system, regulators must publish disaggregated data in financial services. This practice allows regulators and others to identify gaps in access to services for specific demographics, such as women in rural areas. By breaking down data by factors like income level, race, and gender, regulators can pinpoint inequalities and track progress toward goals like financial inclusion. This data-driven approach informs policy decisions, enabling regulators to design targeted solutions that address the specific needs of different populations.

Launched in 2014, the WFID Partnership brings together a group of organizations to champion sex-disaggregated data. Their goal is to increase the collection, use, and accessibility of this data to advance financial inclusion for women. Data2X, a United Nations Foundation initiative, coordinates the WFID Partnership. The Financial Alliance for Women is its technical lead. In Bangladesh, WFID has collaborated with Bangladesh's central bank, Bangladesh Bank to form the Bangladesh Women's Financial Inclusion Data (WFID) Dashboard, a joint effort between Bangladesh Bank, ConsumerCentriX, and the Financial Alliance for Women (a WFID member). The WFID Bangladesh Dashboard suggests a focus on making disaggregated data accessible. This online platform allows for interactive exploration of the data, potentially informing policy decisions and raising public awareness about gender disparities in financial inclusion.

What could be the impacts?



- The initiative highlights the gender gap in financial inclusion through sex-disaggregated data and draws policymaker and stakeholder attention to the specific challenges women face in access to financial services.
- With data guiding policy decisions, initiatives can be implemented to increase women's access to financial products and services, such as savings accounts, credit facilities, and insurance.

The Role of Foundational ID in the promotion of financial inclusion in India

India's foundational ID system, *Aadhaar*, has emerged as a cornerstone initiative that fosters financial inclusion for its citizens. Unveiled in 2009, Aadhaar assigns a unique 12-digit number to residents based on biometric and demographic data. This ingenious system acts as a master key, which unlocks many financial opportunities. It streamlines Know Your Customer (KYC) protocols and empowers individuals, particularly those who lack traditional documentation, to effortlessly access bank accounts and other financial services. It also helps regulators identify unbanked populations accurately, which enables targeted financial inclusion programs and efficient resource allocation.

The robust verification process inherent to Aadhaar bolsters security within the financial ecosystem, which fosters trust among institutions and individuals alike. Aadhaar's reach extends beyond traditional banking, as it facilitates direct government benefit transfers to citizens. This ensures subsidies and social welfare programs reach their intended beneficiaries and minimizes financial leakages. The widespread adoption of Aadhaar has paved the way for innovative financial products and services, with mobile banking and microloans readily accessible through this ubiquitous ID system. With persistent concerns around data privacy and potential misuse, the Indian government has implemented robust regulatory frameworks and data protection laws to safeguard its citizens' information.

What are the best practices for Nepal?



- Nepal's ID system should streamline KYC processes for financial institutions. This would ease access to financial services for the unbanked or underbanked population, mirroring Aadhaar's impact in India.
- Similar to Aadhaar's initial mobile enrollment drives, Nepal can deploy mobile teams to collect biometric data in remote areas. This would address accessibility concerns raised in Nepal's National ID rollout plans and ensure wider coverage, particularly for vulnerable populations.
- Using Aadhaar's achievements in India as an example, Nepal can prioritize the issuance of National IDs to vulnerable populations who rely on social security allowances.



WORLD BANK GROUP

THE WORLD BANK
IBRD • IDA

IFC

International
Finance Corporation