DIGITAL FRONTIERS

IMPACT CASE STUDY

Building Inclusive Instant Payments Systems in Ethiopia

A Case Study on the Impacts of the Work of Digital Frontiers Institute Alumni

Baastel

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Authors and Contributors

Jéssica Sbroglia, Girum Fekadu Diriba, Sisay Tesfaye Bekele, and James Purchase authored this case study.

Jéssica Sbroglia has over ten years of experience in qualitative methodologies and currently serves as a Junior Consultant in Monitoring and Evaluation (M&E) and Results-Based Management (RBM) at Baastel, a Canadian-owned international development consulting firm. Her areas of expertise encompass qualitative research, M&E, RBM, and project management. Throughout her career, she has participated in evaluations on various themes, including the outcome evaluation of the Digital Frontiers Institute (DFI) and its capacity-building programmes, such as the Inclusive instant payment systems (IIPS). Additionally, she oversaw the development of this case study. Jéssica holds a Master's Degree in Political Sociology from the Federal University of Santa Catarina (UFSC) in Brazil and completed part of her studies at the University of Montreal (UdeM) in Canada.

Girum Fekadu Diriba, CDFP, Digital Financial Services (DFS) Risk Manager at Ethiopost, has over 11 years of expertise in risk management and internal auditing, having worked with various financial institutions such as the National Payment Switch of Ethiopia (EthSwitch S.C.), financial cooperatives, and payment processors. He provides subject matter expertise at the Digital Frontiers Institute (DFI), focusing on financial inclusion and digital transformation. Mr. Girum has published articles on various IIPS topics on the DFI website, including regulatory harmonisation, consumer protection, innovative approaches to fraud prevention, fraud detection and dispute resolution, as well as clearing and settlement in RTPS. He also participated in a webinar facilitated by DFI on Inclusive and Interoperable Payment Systems in Ethiopia.

Mr. Girum serves as an Ambassador for the AfricaNenda Foundation Community of Practice. He has shared valuable insights through articles on Inclusive instant payment systems (IIPS), participated in workshops, and had the honour of being part of the launch programme for the State of Inclusive Instant Payment Systems (SIIPS) in Africa 2024 report in Accra, Ghana, hosted by the AfricaNenda Foundation. Additionally, he is featured in the Ethiopian government English-language newspaper, Ethiopian Herald, dated 26 November 2024, where he provides insights about instant payment systems in Africa embracing inclusivity despite multiple challenges, according to the Ethiopian Press Agency. He also contributes as an independent consultant for the development of this case study.

Mr. Girum is a Certified IIPS Graduate Professional with a robust understanding of IIPS regulation, launch, design, and implementation. During his time at EthSwitch S.C., he participated in the IPS project as an auditor, producing a comprehensive audit report that covers key findings and recommendations of the IPS project. He is also a Certified Google Project Management professional. Mr. Girum holds a bachelor's degree in accounting and finance from Bahir Dar University, Ethiopia.

Sisay Tesfaye Bekele, CDFP, holds a master's degree in business administration with high distinction and brings over 14 years of extensive experience in financial operations, digital financial services, and Clearing and Settlement Operations. His career has been shaped through hands-on roles at the

National Bank of Ethiopia (NBE) and EthSwitch (National Switch), where he gained profound expertise in critical systems such as ACH, RTGS, CBS, and the National Switch System. During his tenure at NBE and EthSwitch, Sisay played an active role in various payment modernisation projects, which allowed him to comprehensively understand their outcomes and the broader impact on the financial sector. This wealth of experience has equipped him with a robust grasp of transaction processing, clearing, dispute resolution, settlement, reconciliation, and maintaining operational integrity in large-scale financial environments.

As Senior Manager of Surveillance and Investigation at the Ethiopian Securities Exchange (ESX), Sisay leads initiatives to monitor market activities, ensure regulatory compliance, and investigate potential market irregularities. His work is central to safeguarding the exchange's transparency and integrity while adapting to the evolving dynamics of the financial market.

With a strong commitment to continuous learning and professional growth, Sisay holds multiple certifications, including in IIPS, and a BA in Accounting and Finance from Bahir Dar University. He has also shared his expertise through published blogs on IIPS topics, such as "The Rationale of Digital ID – Ethiopia Project for Inclusive & Interoperable Payments". He has actively participated in a webinar facilitated by DFI on the topic of "Inclusive and Interoperable Payment Systems in Ethiopia."

James Purchase recently graduated with a Diploma in Sustainable Development from Stellenbosch University. He completed a 360-hour (9-week) internship at Digital Frontiers during his final year in 2024. The main skills acquired during this internship included report writing, research skills, stakeholder engagement, critical reading, email writing, and market research. Subsequently, he secured a position at Digital Frontiers as an Analyst. He currently works in this role while completing an Advanced Diploma in Business Management.

Citation and Copywrite

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Abstract

Building Inclusive Instant Payment Systems Capacity in Ethiopia: Impacts of DFI Alumni

This case study documents the contributions of alumni from the Digital Frontiers Institute's Inclusive Instant Payment Systems (IIPS) programme to Ethiopia's digital financial transformation from 2016 to 2024. Based on 69 completed survey responses and 14 alumni interviews, it highlights significant impacts across real-time payment systems, agency banking expansion, QR code standardisation (quick-response code), blockchain-driven financial solutions, and policy alignment with the Digital Ethiopia 2025 strategy.

Key outcomes include a 6,800% increase in peer-to-peer (P2P) digital transactions between 2020/21 and 2023/24, growing from 29,881 to 49.69 million transactions valued at ETB 270.7 billion. Instant Payment System (IPS) implementation reduced transaction times from 40 to 17 seconds and enabled T+0 (same day) settlement. Agency banking models supported the use of over 17,000 local agents, expanding financial services in rural areas. Standardised interoperable QR codes were introduced, ensuring seamless person-to-merchant (P2M) payments across the financial sector.

Blockchain projects enhanced credit access for rural populations through reputation-based scoring and USSD technology, while the overall ecosystem saw the number of mobile money accounts climb to 107.5 million and digital accounts surpass 205.8 million by mid-2024. Financial access points grew by 64% in one year, reaching 445,856 by June 2024.

Alumni-led engagements with stakeholders have facilitated knowledge sharing, regulatory advancements, and increased adoption of inclusive payment systems. Public-private partnerships and cooperation between financial institutions, regulators, fintechs, and development organisations have played a crucial role in scaling digital financial services.

In total, 586 unique alumni in Ethiopia completed 1,680 courses through DFI's digital finance programmes, including 283 alumni who completed 561 IIPS courses.

Through their leadership, Ethiopia's financial sector is advancing toward its 2025 goal of 70% financial inclusion, strengthening the country's digital economy and offering a replicable model for inclusive financial system development across Africa.

Executive Summary

Objective

The Building Inclusive Instant Payments Systems Capacity in Ethiopia case study examines the contributions of the Digital Frontiers Institute (DFI) alumni in advancing digital financial inclusion in Ethiopia from 2016 to 2024. It highlights key achievements in implementing Inclusive Instant Payment Systems (IIPS) and their role in promoting financial accessibility, gender equity, and economic development. The primary objective of this case study is to assess the tangible impacts of Ethiopian DFI alumni in fostering an inclusive digital financial services ecosystem. The study focuses on initiatives in real-time payment systems, agency banking, interoperable QR code standards, blockchain applications, and Ethiopia's Digital 2025 strategy.

Methodology

A qualitative research approach was employed, combining primary and secondary data sources. Primary data collection included surveys and in-depth interviews with 25 selected DFI alumni, complemented by secondary data gathered from financial reports, policy documents, and institutional records. Data was analysed based on key impact areas, using assessment matrices to evaluate project contributions in gender mainstreaming, digital finance, and socio-economic development.

Impact Areas

1. **Real-Time Payment Systems (RTP):** DFI alumni have been instrumental in developing Ethiopia's instant payment infrastructure, enhancing transaction speed and financial accessibility. The introduction of the Instant Payment System (IPS) and National Payment Gateway (NPG) has facilitated interoperability among banks, microfinance institutions, and mobile money providers.
2. **Agency Banking:** Expansion of agency banking models has significantly increased financial access in rural Ethiopia. Alumni-led initiatives have enabled microfinance institutions to offer credit and financial services through digital channels, supporting economic growth and job creation.
3. **Ethiopian Interoperable QR Code Standards:** Alumni have driven the adoption of standardised QR payments, reducing reliance on cash transactions and enhancing merchant participation in digital commerce.
4. Blockchain Applications: Innovative uses of blockchain technology have been explored to improve Know Your Customer (KYC) processes and enable secure digital financial transactions, particularly benefiting rural populations.
5. **Digital Ethiopia 2025 Strategy:** Alumni contributions align with Ethiopia's broader digitalisation goals, including the integration of digital IDs, fintech partnerships, and regulatory enhancements to support financial inclusion.
6. **Collaboration and Partnership:** Public-private partnerships and cooperation between financial institutions, regulators, fintechs, and development organisations have played a crucial role in scaling digital financial services. Alumni-led engagements with stakeholders

have facilitated knowledge sharing, regulatory advancements, and increased adoption of inclusive payment systems.

Challenges, Opportunities and Recommendations

The Ethiopian IIPS alumni cite the following **challenges** to scaling inclusive instant payment systems:

Limited Digital Literacy: Many rural communities lack awareness and trust in digital financial services. **Regulatory Barriers:** Slow approval processes for fintechs and restrictive banking regulations hinder innovation. **Infrastructure Gaps:** Limited mobile and internet penetration in rural areas restricts access to financial services. **Gender Inclusion Barriers:** Socioeconomic constraints limit women's access to digital financial products. **Cybersecurity Concerns:** Growing threats to digital transaction security require enhanced regulatory safeguards.

Alongside these challenges they see these **opportunities**:

Government and Private Sector Collaboration: Strengthening partnerships can drive financial literacy campaigns and infrastructure development. **Interoperable Payment Systems:** Expansion of IPS and QR payments can further enhance financial accessibility. **Fintech Innovation:** Emerging startups and financial technology solutions can drive new product offerings tailored for underserved populations. **Policy Reforms:** Streamlining regulatory frameworks can accelerate digital payment adoption and fintech growth. **Capacity Building:** Continuous professional development programs for financial sector professionals can sustain momentum in digital financial inclusion.

The authors conclude with the following **recommendations**:

Expand Financial Literacy Programmes: Nationwide awareness initiatives should be launched to educate communities about digital financial services. **Enhance Infrastructure Investments:** Telecommunications and financial institutions should collaborate to expand mobile network coverage in underserved regions. **Regulatory Support for Fintechs:** The National Bank of Ethiopia should fast-track approval processes for innovative financial services and enable a conducive environment for fintech growth. **Gender-Focused Policies:** Targeted financial inclusion policies should be introduced to close the gender gap in digital finance participation. **Strengthen Cybersecurity Measures:** A national cybersecurity framework should be established to safeguard digital transactions and consumer data.

Conclusion

The findings of this case study underscore the critical role that DFI alumni have played in driving Ethiopia's digital financial transformation. Their efforts in RTP systems, agency banking, QR payment standardisation, blockchain integration, and policy advocacy have significantly contributed to expanding financial access and promoting economic inclusion. Despite ongoing challenges, Ethiopia's financial sector is well-positioned to achieve its digitalisation and financial inclusion goals through continued collaboration, infrastructure investments, and regulatory enhancements. Looking ahead, aligning financial strategies with the Digital Ethiopia 2025 vision will be essential in building a more inclusive and resilient financial ecosystem.

Introduction and Background

This case study highlights the contributions of the Digital Frontiers Institute (DFI) capacity-building programme on Inclusive Instant Payment Systems (IIPS), focusing on Ethiopian alumni working across diverse sectors and organisations. The IIPS programme is designed to foster the development of inclusive instant payment systems, ultimately transforming a country's financial landscape. These systems provide a cash-like experience by utilising technology that enables seamless money transfers between clients across various financial service providers. IIPS offer real-time or same-day settlements, operates on open-loop and accessible networks, and facilitates high-volume, low-value transactions.

The study also explores Ethiopia's broader financial sector and financial inclusion landscape to contextualise the contributions of IIPS alumni. Additionally, it highlights how the capacity-building provided by DFI has supported alumni initiatives, driving advancements in digital financial inclusion across the country.

Ethiopian Financial Sector

Ethiopia's financial sector is evolving, characterised by robust growth and increasing diversification, although banking remains the dominant component.

- The banking sector[1], comprising 32 banks, dominates 96.1% of total financial assets. The Commercial Bank of Ethiopia (CBE) remains the largest player, holding 47.9% of assets and 47.1% of deposits, though its market share has slightly declined. Medium-sized banks have grown to hold 28.9% of assets, while small banks, despite their expansion, account for 23.3% and are not systemically important individually.
- The microfinance sector contributes significantly to financial inclusion [14], with total assets of 60.1 billion ETB in 2024, though it contracted by 2.6% compared to the previous year. The capital goods finance sector saw strong growth, with an 18.5% rise in assets, underlining its potential to support industrial expansion.
- The insurance sector has shown resilience [14], growing by 32% year-on-year to reach 65.6 billion ETB in assets. While the sector remains stable, high earnings and concentration risks require regulatory attention to sustain growth.

Ethiopia marked a milestone in its financial development with the launch of the Ethiopian Securities Exchange (ESX) on January 10, 2024. This, along with reforms like a market-based foreign exchange

[1] National Bank of Ethiopia. Financial Stability Report November 2024

regime and enhanced digital financial services, aims to modernise the financial sector and strengthen economic resilience. Innovations in digital payment technologies and expanding financial access points further highlight the sector's drive toward inclusivity and modernisation.

Ethiopian Digital Payment System Journey

According to the National Bank of Ethiopia (NBE) report[2] the Ethiopian digital payment system has undergone modernisation reform over the years, as shown in Table 1 below, covering the period from 2011 to 2024.

Table 1. Ethiopian Digital Payment System Journey

2011	2014	2018	2020	2021	2023	2024
• National Payment Modernisation (Proclamation No.718/2011) • Launch of Inter Bank Payment Systems (RTGS/ACH) by NBE	• Establishment of EthSwitch S.C (National Switch) • EthSwitch enabled interoperability among channels, institutions and instruments or FSPs (banks, MFIs, and fintechs)	• Amendment of Banking Business Proclamation • Recognition of DFSPs/non-bank entities as a financial institution	• Issuance of PII (Payment Instrument Issuer) & PSO (Payment System Operator) Directives • PII are Mobile money providers; PSO are Payment processors	• National Digital Payment Strategy (2021-2024) launched by NBE • First non-bank mobile money license granted to Ethio-Telecom |Tele-birr	• National Payment System (Amendment) Proclamation No. 1282/2023 was adopted by the Ethiopian government on February 3, 2023 • Payment system opened to foreign investors • M-Pesa licensed to operate in Ethiopia	• NBE modernisation reforms • First Financial Stability Reports issued (April & November 2024)

[2] ITU, Digital Financial Services Security Clinic for Ethiopia, NBE - Overview of DFS Ecosystem in Ethiopia [Presentation].

The NBE report highlights that there are six core platforms of the ecosystem, which is overseen by the NBE to ensure compliance with set requirements and standards. This includes:

1. **Commercial Banks:** Core Banking System (CBS),
2. **Automated Clearing House (ACH):** Checks, DD, CT,
3. **Mobile Money:** Agent Networks and Super apps,
4. **National Switch:** Interoperability, EthSwitch Instant Payment and Shared Platform,
5. **Payment Processors:** Digital Access Points and acceptance; and
6. **Payment Aggregators.**

The Role of the NBE in the National Payment System

The NBE plays a multifaceted role in the National Payment System (NPS).[3] As a regulator, it regulates the NPS, Payment Instrument Issuers, and Payment System Operators, providing an enabling environment for the development of an inclusive payment system. The NBE's regulatory framework includes various [4] directives and establishment [5] proclamations.

As an overseer, the NBE ensures the efficiency, reliability, and safety of the national payment system through effective oversight of the payment system infrastructure, guided by the[6] NPS oversight framework such as Large Exposures to Counterparty or Group of Connected Counterparties Directive No. SBB/87/2024, which align with international best practices such as Basel Core Principles for Banking Supervision. In its supervisory role, the NBE supervises payment system providers, including PIIs and PSOs. Additionally, as a catalyst, the NBE provides strategies, policies, and incentives to promote digital payments. Finally, as an operator and owner, the NBE owns and operates the Ethiopian Automated Transfer System (EATS), which includes both the RTGS and ACH systems.

The Ethiopian Digital Payment Ecosystem Key Performances

According to the National Bank of Ethiopia's Financial Stability Report[7] of November 2024, the Ethiopian digital payment ecosystem has shown significant growth. Mobile money accounts have reached 107.5 million with an average growth rate of 56.6%, while mobile banking accounts stand at 39.6 million with a 39.6% average growth rate. Debit card users have increased to 45.5 million with an 18.6% average growth rate. There are 415,084 mobile money agents with a 78% average growth rate, 10,551 Automated Teller Machines (ATMs) terminals with a 34.2% average growth rate, and 14,030 Point of Sales (PoS) terminals with a 16.7% average growth rate.

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[3] ITU, Digital Financial Services Security Clinic for Ethiopia, NBE (National Bank of Ethiopia) - Overview of DFS Ecosystem in Ethiopia [Presentation].
[4] NBE Directives: Licensing and Authorization (LA) of PII Directive No. ONPS/09/23, LA of PSO ONPS/02/20, FIS/02/20, Manner of Equity Investment by Foreign Nationals of Ethiopia Origin and Organizations in PII or PSO Business No. ONPS/04/21.
[5] NBE Proclamations: NPS No. 718/2011, NPS (Amendment) No. 1282/23, Banking Business Proclamation (BBP) No. 592/2008 and BBP (Amendment) 1159/2019.
[6] The NBE Introduces Strong Reform Measures to Strengthen the Framework for Financial Sector Oversight – NBE.
[7] National Bank of Ethiopia. Financial Stability Report November 2024.

The Payment Service Providers ecosystem includes [8]one national switch, four payment instrument issuers, [9] nine payment system operators, [10] 32 banks (domestic), and [10]53 microfinance institutions (MFIs).

Digital Accounts: As of June 30, 2024[8], the total number of digital accounts has exceeded 205.8 million, primarily due to regulatory reforms by the National Bank, including the opening of payment services to non-bank players (Fintechs). Digital accounts are expected to continue increasing with new players entering the market.

Digital Payment Performance of five years: Over the past five years[8], more than 9.6 trillion-birr transactions have been processed digitally, showing a threefold surge from last year. The number of transactions processed digitally[8] has exceeded 2.4 billion during the year, with mobile banking transactions taking the lion's share at 70%. This trend indicates a high level of adoption of digital payments in the economy.

According to Financial Stability report, November 2024,[11] over the past five years, the number of transaction accounts has increased at an average annual rate of 31%, reaching 272 million by June 2024. Of these, 23.7 million are interest-free deposit accounts. [11] Financial access points grew from 271,203 in June 2023 to 445,856 in June 2024, [11] In terms of access points per capita, 782 financial access points served 100,000 adults during 2024, compared with 493 access points per 100,000 adults in 2023.

Digital Financial Services: Over the past two years,[12] more than 2.5 million transactions worth 11 billion birr have been saved digitally, showcasing remarkable growth. Additionally, over 8.6 million transactions worth 12 billion birr have been saved digitally within the same period, further highlighting the significant progress in digital saving and credit services.

The rapid adoption of digital financial services (DFS) is transforming financial inclusion in Ethiopia. [13] By June 2024, digital accounts exceeded 198 million, driven by a 78.1% growth in mobile money agents. With an Ethiopia's population of 132.06 million (UN/World Bank, July 2024), this equates to 1.5 accounts per person, reflecting high adoption (likely multiple accounts per user) and urban saturation, while underscoring opportunities to expand rural financial inclusion. EthSwitch has enhanced interoperability, enabling seamless Person-to-Person (P2P) payments, ATM, and PoS transactions.

[8] ITU, Digital Financial Services Security Clinic for Ethiopia, NBE (National Bank of Ethiopia) - Overview of DFS Ecosystem in Ethiopia [Presentation].
[9] Payment Instrument Issuers/System Operators - National Bank of Ethiopia.
[10] Financial Institutions - National Bank of Ethiopia.
[11] National Bank of Ethiopia. Financial Stability Report November 2024.
[12] ITU, Digital Financial Services Security Clinic for Ethiopia, NBE (National Bank of Ethiopia) - Overview of DFS Ecosystem in Ethiopia [Presentation].
[13] National Bank of Ethiopia. Financial Stability Report November 2024.

The Ethiopia Socioeconomic Survey (2018/19) shows notable progress [14], with 28.8% of bank account holders using ATM/debit cards and 11.1% using mobile money—up from 15% and 5% in 2015/16. With 37.8% of adults owning mobile phones, mobile money presents significant potential growth.

The COVID-19 pandemic accelerated digital payment adoption, introducing many Ethiopians to mobile money and online transactions for the first time.
Interoperability: As of June 30, 2024, [12] more than 94 million ATM transactions worth 119.24 billion birr have been made, showcasing remarkable growth. Additionally, [12] over 2.3 million PoS transactions worth 5.51 billion birrs have been processed. Furthermore [12], more than 55 million P2P transactions worth 283 billion birr have been completed, highlighting the significant progress in interoperability.

Financial Inclusion in Ethiopia

Ethiopia is experiencing a significant shift towards electronic cash transfer payments, coinciding with a rise in digital financial services. According to the NBE reports [15], the percentage of adults with a bank account increased from 22% in 2014 to about 45% in 2020. The World Bank's Global Findex Database shows that financial inclusion reached 46% by 2022. Women's financial inclusion nearly doubled from 21% in 2014 to 39% in 2022. The gender gap in financial inclusion however increased from 12% in 2017 to 16% in 2022, driven by the increase in overall account ownership.

Ethiopia's revised financial inclusion strategy aims for 70% of the population to have a bank account by 2025. This strategy focuses on expanding access through bank branches, agent networks, and promoting mobile money services to reach underserved populations.

These efforts are crucial for economic growth and improving livelihoods. By leveraging digital financial services, expanding banking infrastructure and last mile agent networks, Ethiopia is making significant strides towards a more inclusive financial system.

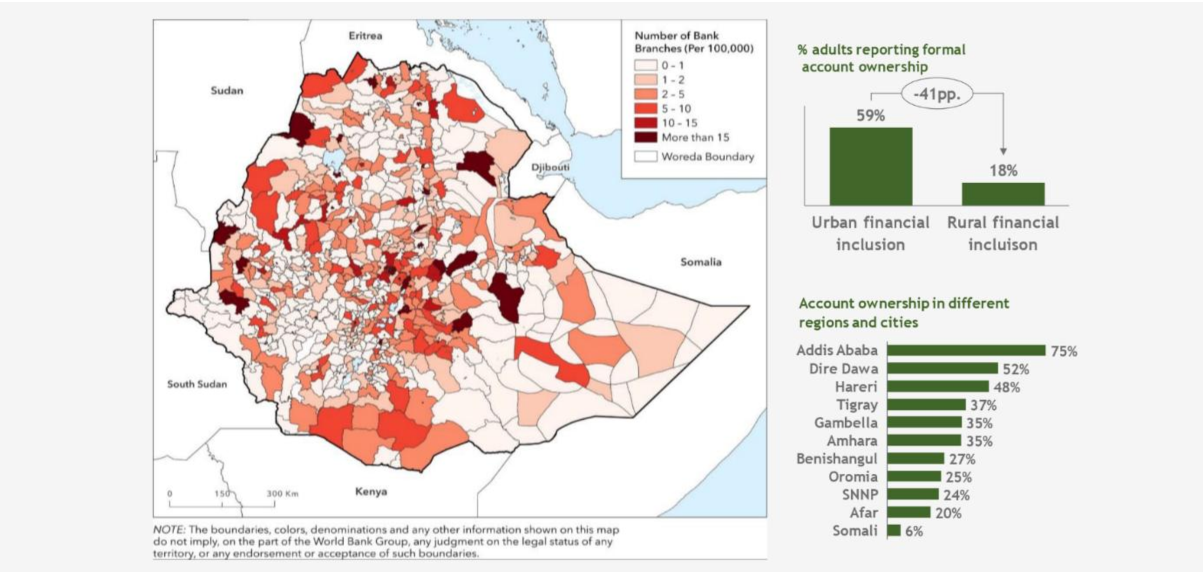
[14] World Bank. (2019). Ethiopia Socioeconomic Survey 2018-2019. Ethiopia Socioeconomic Survey.
[15] World Bank's Global Findex Database-Leveraging E-Payments for Financial Inclusion in Ethiopia- blog by Tewodros Tassew Kebede, Francesco Di Salvo, and Loza Kibret Admassu.

Table 2. Financial Inclusion Trends in Ethiopia

	2022	2017	2014
Financial Account Ownership	46%	35%	22%
Female (% age 15+)	39%	29%	21%
Male (% age 15+)	55%	41%	23%
Gender Gap	16%	12%	12%

Source: World Bank's Global Findex 2022

Figure 1: Financial Inclusion Trends in Ethiopia



Source: Ethiopian National Financial Inclusion Strategy (NFIS)-II 2021-25

Global and Regional Comparison[16]**:** Ethiopia has performed better than the global and regional averages in terms of account ownership, it has underperformed both the global and regional averages in terms of savings and borrowing levels. In 2022, Ethiopia adults with an inactive account stood at 28%, above the Sub-Saharan Africa (SSA) regional

[16] https://www.findevgateway.org/country/financial-inclusion-ethiopia

average of 5% and the global average of 34%, respectively. In terms of savings, 53% of Ethiopian adults saved at a financial institution, below the SSA regional average of 56% and with even lowest borrowing levels at 39%, below the SSA regional average 56%.

Women's Financial Inclusion

The growth in financial inclusion has been particularly remarkable among women, the rural population, and individuals with lower education level. According to the Global Findex data[16], in 2022, 39% of all women had a bank account, with 9% having made or received a digital payment. In terms of usage, in 2022, only 11% of Ethiopian women had inactive account compared to 5% SSA regionally and 56% globally. Regarding savings, 45% Ethiopia women saved at a financial institution, below the SSA regional average of 49% and with even lowest borrowing levels at 35% compared to the 49% Sub-Saharan Africa regional average.

Women represent a key focus area for financial inclusion initiatives. Efforts include specialised credit schemes and digital financial tools tailored to overcome socio-economic barriers that hinder their financial participation.

- **Access to Finance:** Women remain largely excluded from the financial sector, with significant gender gaps persisting. [17] According to the World Bank's Global Findex 2022, women are less likely to own bank accounts and use financial services compared to men.
- **Digital Financial Services:** [18] The adoption of digital financial services among women is lower than that of men. Efforts are being made to close this gap through targeted initiatives and policies.
- **National Financial Inclusion Strategy:** [19] The National Bank of Ethiopia's second National Financial Inclusion Strategy (2021-2025) emphasises gender-focused actions to achieve parity in financial services.

Digital Financial Inclusion

Mobile Phone Penetration: Ethiopia has witnessed a surge in mobile phone penetration and usage. According to the Innovation and Technology Minister of Ethiopia during the Internet Development Conference (IDC) of Intergovernmental Authority on Development

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[17] UNCDF Policy Accelerator. (2022). Newest Financial Inclusion Data Provides Compelling Insights for Ethiopia.
[18] World Bank Report on Women in Finance: Ethiopia.
[19] "Closing the Gender Gap in Financial Inclusion: A Key Priority for the NBE" - The Governor - National Bank of Ethiopia.

(IGAD) regions[20], as of January 2025, the number of mobile phone subscribers in Ethiopia reached 80.5 million in Ethiopia.

This widespread mobile phone adoption has created an ideal environment for the growth of mobile financial services, playing a crucial role in promoting digital financial inclusion. These findings are corroborated by the GSMA Mobile Gender Gap Report[21] (see Table 3) data, which shows an increasing trend in mobile ownership among Ethiopian adults, with an increasing trend in women's mobile ownership and a narrowing gender gap in mobile ownership. Between 2023 and 2024, women's mobile ownership increased by 2 percentage points (PP) (from 55% to 57%), compared to a 4PP (from 75% to 79%) increase for men, resulting an improved 22% gender gap in mobile ownership.

Table 3. Mobile Ownership Trends in Ethiopia (2023-2024)

Mobile Ownership	2023	2024
Female (% age 15+)	55%	57%
Male (% age 15+)	75%	79%
Gender Gap	20%	22%

Source: GSMA The Mobile Gender Report

Mobile Financial Services: Ethiopia hosts several innovative mobile financial service (MFS) providers, such as Telebirr, HelloCash, M-Birr, and M-Pesa. These providers offer inclusive digital payments widely used by government, businesses, and individuals, reflecting the country's commitment to supporting financial innovation and promoting financial inclusion. Among the MFS providers, Telebirr and HelloCash are Ethiopia's top two mobile financial service providers, accounting for a significant market share. Telebirr, launched by Ethio Telecom in 2021, has rapidly grown to over 51.54 million users as of January 2025[20]. Similarly, HelloCash, launched in 2015, has expanded its services to millions of users across Ethiopia. Both Telebirr and HelloCash have contributed to advancing financial inclusion through mobile banking, making financial services more affordable and accessible to all.

The country has witnessed substantial growth in MFS, comparable to other African markets. Notably, very poor rural households in Ethiopia, with family members who

[20] Ethiopia Experiencing Remarkable Progress in Digital Transformation: Minister - ENA English. (Accessed January 23, 2025)
[21] https://www.gsma.com/r/gender-gap/

migrated to cities, received higher remittance payments through mobile money accounts, which were used for essential needs, reducing borrowing and lowering the risk of extreme poverty[22]. Moreover, most financial services are now accessible, affordable, and delivered more conveniently via mobile money providers than traditional ones. MFS is often the preferred financial instrument in Ethiopia.

Mobile Money Account Ownership: Ethiopia has made significant progress in expanding financial access and improving the well-being of its population through mobile money services. Between 2017 and 2022, there has been substantial growth in overall mobile money account (MMA) ownership and usage. Increased mobile phone usage, internet access, and mobile-based transactions have catalysed this progress.

According to the World Bank's Global Findex 2022 report[23], MMA ownership in Ethiopia has risen by ten percentage points (PP), from 21% in 2017 to 31% in 2022. Women's MMA ownership registered an increase of 12PP, from 18% in 2017 to 30% in 2022 (see table 4), compared to an 8PP rise in men's MMA ownership. The overall increase in MMA can be attributed to the higher growth in women's MMA and the COVID-19 pandemic, during which social safety net payments were made solely through mobile money.

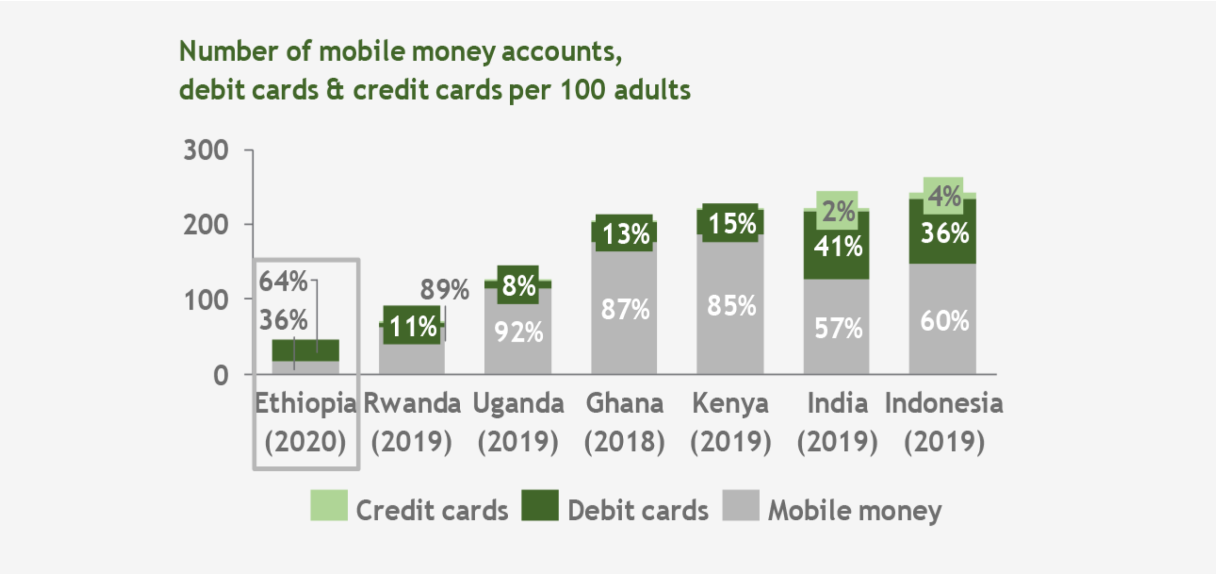
Table 4. Mobile Money Account Ownership Trends in Ethiopia

	2022	2017	2014
Mobile Account	31%	21%	10%
Female (% age 15+)	30%	18%	8%
Male (% age 15+)	38%	30%	12%
Gender Gap	8%	12%	4%

Source: World Bank's Global Findex 2022.

[22] Mobile Money in Ethiopia: What We Learnt from Our Expert Roundtable | Mobile for Development. (Accessed January 23, 2025)
[23] World Bank's Global Findex 2022. (Accessed January 23, 2025)

Figure 2: Number of Mobile Money Accounts (MMA), Debit Cards and Credit Cards Per 100 Adults.



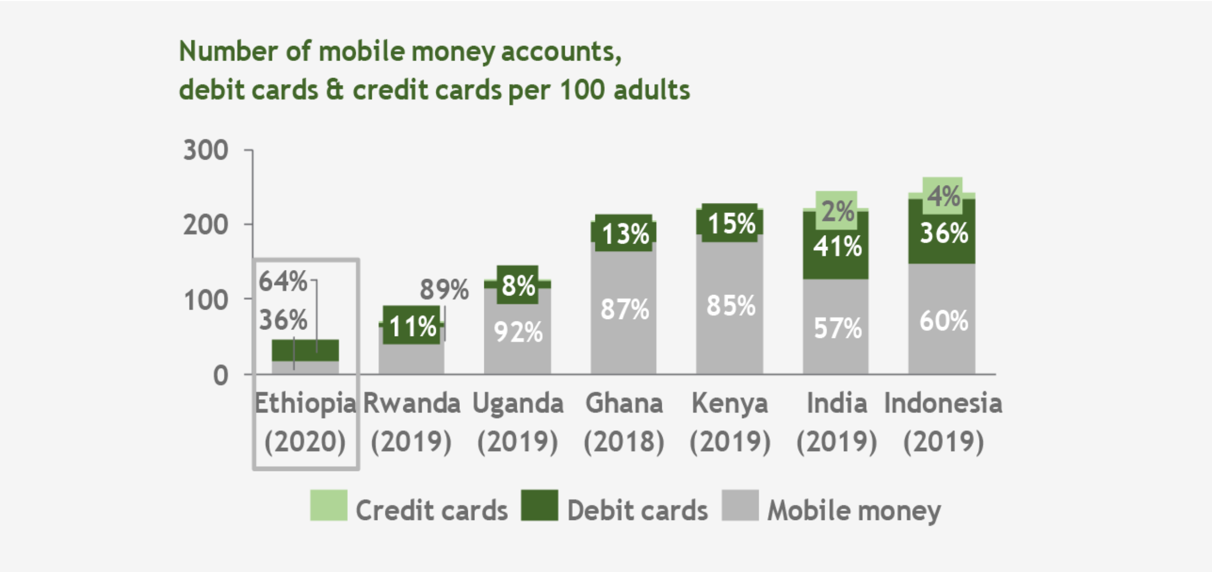
Source: Ethiopia National Financial Inclusion Strategy (NFIS)-II 2021-25

Table 4. Mobile Money Account Ownership Trends in Ethiopia

	2022	2017	2014
Mobile Account	31%	21%	10%
Female (% age 15+)	30%	18%	8%
Male (% age 15+)	38%	30%	12%
Gender Gap	8%	12%	4%

Source: World Bank's Global Findex 2022.

Figure 2: Number of Mobile Money Accounts (Mma), Debit Cards and Credit Cards Per 100 Adults.



Source: Ethiopia National Financial Inclusion Strategy (NFIS)-II 2021-25

Rural Communities: Microfinance institutions (MFIs) and Savings and Credit Cooperatives (SACCOs) play vital roles in extending credit and financial services to rural areas. In June 2024[24], MFIs served over 829,000 borrowers and 5.6 million savers, while SACCOs significantly supported underserved rural populations.

- **Account Ownership:** Financial inclusion is higher among urban residents compared to those in rural areas. [25] The Ethiopia Socioeconomic Survey 2018/19 highlights that only 30.5% of Ethiopians aged 18 and older had an account at a formal financial institution, combining both urban and rural populations.
- **Barriers:** [26] Rural communities face challenges such as limited access to financial institutions, low levels of financial literacy, and reliance on informal financial services.
- **Policy Efforts:** [27] The National Financial Inclusion Strategy II (2021-2025) aims to improve access to financial services in rural areas through various initiatives.

[24] National Bank of Ethiopia. Financial Stability Report November 2024.
[25] World Bank. (2019). Ethiopia Socioeconomic Survey 2018-2019. Ethiopia Socioeconomic Survey.
[26] Desalegn, G., & Yemataw, G. (2021). Financial Inclusion in Ethiopia: Using LSMS (Ethiopia Socioeconomic Survey) Data.
[27] National Financial Inclusion Strategy-II (2021-2025) - National Bank of Ethiopia.

People with Disabilities: Dedicated programs are addressing the financial inclusion of people with disabilities, integrating them into mainstream financial systems through digital channels and tailored products. However, more comprehensive data and efforts are needed to measure and enhance their participation.

- **Inclusion Challenges:** [28] People with disabilities in Ethiopia face significant barriers to financial inclusion, including limited access to financial services and lack of tailored products.
- **Government Support:** [28] The Ethiopian government has implemented laws and policies to promote the inclusion of people with disabilities, such as the Proclamation No. 568/2008 concerning the Rights to Employment for Persons with Disabilities.
- **Microfinance Services:** [29] Efforts are being made to include people with disabilities in mainstream microfinance services, although challenges remain.

Objectives and Methodology

The financial landscape and context of financial inclusion in Ethiopia provide the framework for this case study, which focuses on a diverse range of Ethiopian organisations where IIPS alumni are currently employed or have worked in the past. The study aims to identify initiatives, projects, and policies led by IIPS alumni and assess their impact on advancing financial inclusion. Particular emphasis is placed on efforts that promote gender mainstreaming, digital finance, and socioeconomic development in Ethiopia.

The methodology adopted for this case study is primarily qualitative, drawing on both primary and secondary sources. Primary data were collected through surveys and interviews with the identified alumni, while secondary data were obtained through desk reviews of Ethiopia's financial landscape and documentation related to the IIPS course.

- **Primary Sources**: Surveys and interviews with the identified alumni.
- **Secondary Sources**: Desk reviews of relevant documentation.

[28] International Labour Organization. (2024). People with Disabilities in Ethiopia.
[29] Lee, J. (2012). Inclusion of People with Disabilities in Mainstreaming Microfinance Service. Ethiopian Center for Disability and Development (ECDD).

Data collection: Survey

The survey was distributed to a database of 223 IIPS alumni in Ethiopia, yielding a total of 69 fully completed responses.

Table 5. Distribution of Survey Data Responses

Category	Number of Responses
Survey Distributed	223
Total Responses	97
Incomplete Responses	28
Complete Responses	69

The 69 responses were analysed and selected based on the following criteria:

- Alumni who indicated they are currently or were previously involved in IIPS-related initiatives.
- Initiatives contributing to gender mainstreaming, digital finance, and socioeconomic development within Ethiopia.
- The stage of development of these initiatives, focusing primarily on those in the **planning** or **implementation** phases, rather than those still in the initiation stage.

Based on these criteria, **25 alumni were selected** for interviews to gain a deeper understanding and further expand on the information provided in the survey responses, particularly regarding the IIPS initiatives they are or have been involved in.

Data collection: Interviews

Subject matter experts in digital finance conducted the interviews over two weeks. The 25 interviewees were divided into three tiers:

- **Tier 1**: Respondents who indicated they have a success story related to the IIPS courses.
- **Tier 2**: Respondents prioritised based on gender representation.
- **Tier 3**: All other respondents.

Table 6. Interviewees Categorised Per Tier

Tier Number	Number of Interviewees
1	12
2	1
3	12

Of the **25 interviewees invited, 14 were successfully conducted**, corresponding to the tiers outlined in Table 3 below.

Table 7. Interviewees Conducted Per Tier

Tier Number	Number of Interviewees
1	8
2	1
3	5

The complete list of interviewees and the interview handout are in Annexes 1 and 2, respectively.

Data Analysis

During the data analysis phase, a work session was held to establish the main criteria for analysis. The objective of defining these clear criteria was to answer the question: *How have these initiatives or projects contributed to advancing financial inclusion in Ethiopia?*

An assessment matrix was used to classify and rank the stories to ensure a more objective selection process.

Table 8. Assessment Matrix for Selecting Stories

CRITERIA	INDICATORS	SCORING RANGE	WEIGHT (%)
Gender Mainstreaming	i) Evidence of gender-inclusive practices in the initiative ii) Impact on gender equality	0 (None) – 3 (High)	5%
Digital Finance Initiatives	i) Use of digital financial tools or services ii) Contribution to digital financial inclusion iii) Measurable outputs, outcomes, and observed (quantitative) results	0 (None) – 3 (High)	30%
Socioeconomic Development	i) Demonstrated improvement in socioeconomic conditions (Not limited to Ethiopia specifically, and it's not a rigid framework. We can also highlight stories with strong potential) ii) Alignment with national priorities	0 (None) – 3 (High)	25%
Stage of the Initiative	Current stage of the project: • Conceptual (0) • Early implementation (1) • Ongoing (2) • Fully operational (3)	0-3	20%
Inclusion Initiatives undertaken by IIPS alumni and Digital Frontiers	i) Provide evidence of the connection between Digital Financial Inclusion Initiatives undertaken by IIPS alumni and Digital Frontiers	0 (None) – 3 (High)	10%
Story incorporates elements from other stories	To what extent can the story incorporate elements from other stories, particularly if it presents different outcomes that are worth highlighting	0 (None) – 3 (High)	10%

This framework was used to rank the stories based on predefined criteria. Following this classification, data collation from the interview content was conducted to provide evidence for each criterion. Finally, for triangulation, a cross-check was performed using the following guiding questions:

- Do the projects/initiatives incorporate gender mainstreaming and address underserved populations in their approach to financial inclusion?
- Are there measurable outcomes demonstrating the impact of these initiatives? Is the impact clearly evident?
- Are these initiatives sustainable in the long term?
- Do the stories reflect any realised potential or significant achievements?

The aim was not to select the "best stories," but rather to reflect on questions like: *"What values does this story highlight?"* or *"What can we learn from this experience?"*

Capacity Building in Ethiopia

Capacity Building Approach

DFI adopts a holistic approach to enhance local professional capacity. As a fundamental principle, DFI collaborates with leading subject matter experts and specialist organisations to design interventions and develop curricula.

DFI employs learning and instructional design sciences, gamification, and well-tested learning and assessment tools. It utilises various media formats, ranging from animation and motion graphics to videography and knowledge resources. By leveraging Educational Technology (EdTech), DFI offers immersive learning experiences at scale, enabling simultaneous instruction of thousands of students across numerous countries.

After nine years of testing, learning, and innovation, DFI asserts that while online, self-paced, and free adult learning can enhance knowledge, it is not the most effective method for skill development, behaviour change, or societal impact. Therefore, DFI's methodologies supplement online learning by bringing together students from diverse geographies in synchronous forums and working groups. This allows them to learn from global peers about the practical application and understanding of theories in different markets and the existing challenges and solutions. This approach replicates a physical classroom experience where students engage synchronously with peers and leading subject matter experts, applying their learnings to casework and local contexts. This supplement to digital learning transforms participants' acquired knowledge into applicable skills.

However, for these newly developed skills to be applied in local market contexts, professionals require peer networks, continuous access to resources, and ongoing professional development. To facilitate the continuous professional development of its community, DFI organises online Leagues of Professionals, both physical and virtual Communities of Practice (CoPs) and maintains knowledge banks. The Leagues of Professionals are subject matter specific and provide a platform for current students and alums to share knowledge and experiences, discuss new ideas and developments, and ultimately enhance the knowledge base and foster peer learning opportunities for professional development and advocacy.

The CoPs, distributed globally, meet face-to-face and virtually to discuss industry-wide issues and challenges. These communities connect students directly with their industry peers, fostering communication, cooperation, knowledge sharing, and innovation. With the help of DFI, these communities also evolve into formal local professional associations that continue independently of DFI. Lastly, DFI maintains an extensive and freely accessible knowledge bank compromising all resources in their in their courses and within the alum network. This includes a wide array of blogs, articles, research papers, and dozens of webinars conducted each year.

Digital Frontiers Institute in Ethiopia[30]

DFI has significantly enhanced the capacity and capabilities of 586 alumni who collectively took 1680 courses in Ethiopia from 2016-2024. The capacity-building efforts were achieved through four key programs: the Certified Digital Finance Practitioner (CDFP), Digital Financial Inclusion Supervision (DFIS), Inclusive instant payment systems (IIPS) and Gender Equality Changemakers (GEC). The Ethiopian DFI participants courses included individuals from various sectors and levels, spanning different levels of seniority, such as executives, senior, middle, and junior management.

Country	Gender	Total Enrolled	Total Participants	Unique Participants	% of Unique Participants	Total Passed	Pass Rate
Ethiopia	Female	626	366	149	25.4%	296	81%
	Male	2,026	1,305	436	74.4%	1,039	80%
	Rather not say & unknown	15	9	1	0.2%	9	100%
	Total	**2,667**	**1,680**	**586**	**100.0%**	**1,344**	

Building IIPS Capacity in Ethiopia

The IIPS programme was designed to provide an immersive learning experience, equipping students with the skills to reshape payment systems for a more inclusive and efficient financial future. There are six IIPS courses offered by DFI (see Figure 4). In

[30] Refer to the appendices for detailed quantitative data on total capacity built and IIPS specific capacity built.

Ethiopia, these courses have been running since 2016, with 283 unique alumni participating in 561 IIPS courses.

Country	Gender	Total Enrolled	Total Participants	Unique Participants	% of Unique Participants	Total Passed	Pass Rate
Ethiopia	Female	125	110	59	20.8%	82	75%
	Male	495	451	224	79.2%	324	72%
	Total	**620**	**561**	**283**	**100.0%**	**406**	

Figure 4. IIPS Programme Flow

Ethiopian Community of Practice and Digital Finance Association

Communities of Practice (CoP) for Ethiopia has been in place for nine 9 years. DFI's Ethiopia CoP was attended by 729 professionals. These meetings brought together various stakeholders, banks, technology companies, consulting firms and revenue authorities. A collaborative platform was created as a result to address Ethiopia's digital finance challenges and leverage local insights for impactful solutions.

Discussions have focused on key topics such as designing customer experiences, regulating Digital Finance Services (DFS) and advancing Ethiopia's digital identity, with insights from the National ID project. Academic papers on DFS, digital fraud risk management, and the effects of policy and regulation on financial inclusion have enriched the dialogue. Other critical issues include mobile money challenges, the benefits of digital lending, and comparative studies with countries like Kenya, Tanzania and Bangladesh.

Notably, alumni CoP meetings served as the foundation for recognising the need for an association, providing a space to strategise and plan the formation of the Association of Ethiopian Digital Finance Practitioners (AEDFP). These community of practice workgroups have not only helped in applying skills and contextualising knowledge but also led to the formation of the AEDFP. AEDFP was founded in 2021 with the aim to unite ecosystem actors, collaboratively address market challenges, identify and share best practices, and promote the adoption of digital financial services to advance Ethiopia's digital economy.

Since its inception, AEDFP has actively engaged with the global digital finance and fintech community by joining the Alliance of Digital Finance and Fintech Associations (Alliance DFA) in November 2021. AEDFP has benefitted from and contributed to Alliance DFA's network of resources and expertise. Currently, AEDFP is participating in Alliance DFA's Accelerator Program, which is equipping the association with tools and strategies to achieve sustainability, scale its activities, and enhance its impact on Ethiopia's digital finance ecosystem.

Impact of IIPS Alumni Initiatives in Ethiopia

Financial Inclusion Initiatives

1. Real-Time Payment Systems (RTP)

A Real-Time Payment (RTP) system is a financial infrastructure designed to enable the instantaneous transfer of funds between banks and financial institutions, allowing individuals and businesses to make payments and access funds immediately, any time of day, year-round. Unlike traditional payment systems that may take hours or days to process, RTP systems settle transactions within seconds, ensuring real-time confirmation. These systems enhance operational efficiency, reduce settlement risks, and improve cash flow, making them indispensable for various applications such as peer-to-peer transfers, e-commerce, bill payments, and payroll.

The Ethiopian National Digital Payments System (NDPS) is a strategic initiative designed to modernise and streamline the country's payment ecosystem by leveraging digital technologies. Spearheaded by National Bank of Ethiopia in collaboration with key stakeholders such as EthSwitch, the NDPS aims to enhance financial inclusion, promote interoperability, and foster a cashless economy. It encompasses various components under Real-Time Payment System Projects, including the development of a robust Instant Payment System (IPS), a National Payment Gateway, and innovative platforms like a Shared Wallet Service. These systems facilitate seamless, secure, and real-time transactions across banks, MFIs, Payment Switch operators, and other financial service providers. The NDPS is integral to driving economic growth, improving efficiency, and empowering individuals and businesses by providing equitable access to digital financial services.

DFI alumni-EthSwitch, have significantly contributed to enhancing Ethiopia's payment ecosystem. Their efforts have been instrumental in implementing key projects like the Instant Payment System, National Payment Gateway, and Shared Wallet Service, which are pivotal for modernising Ethiopia's payment landscape.

- **The Instant Payment System (IPS)**

Twelve alumni have been involved in the EthSwitch project implementation. The National Switch plays a central role in advancing the country's payment systems, seamlessly connects Banks, MFIs, payment instrument issuers, payment service providers, bill aggregators, payment switch operators, and other payment service providers, enabling full interoperability across various payment channels.

The DFI Alumni working in EthSwitch highlighted several benefits of the IPS platform, emphasising its support for various use cases, including QR payments and the upcoming launch of "Request to Pay" functionality. A key feature of IPS is its dispute management capabilities, along with settlement occurring in two daily cycles. The T+0 settlement for IPS allows for near-instantaneous transactions, offering advantages for both payers and payees. Similarly, for NPG, the system has incorporated card-not-present transactions for e-commerce (ECO) using card details. Work is also underway to enable account-based payments via QR codes, including support for dynamic QR capabilities. Both NPG and IPS are interconnected, with IPS managing the account information for these payments.

One of the standout advantages of IPS, as observed by the DFI Alumni-EthSwitch, is the T+0 settlement feature. This real-time settlement allows financial institutions to immediately confirm the status of payments, enabling more efficient management of funds. Settlement occurs twice a day, which helps institutions better manage their financial standing and adjust their risk appetite accordingly.

Additionally, the IPS system has dramatically improved transaction speeds. Previously, a P2P transaction could take up to 40 seconds to complete, but now it is reduced to just 17 seconds, making it possible for more transactions to occur in the same time frame. This improvement significantly enhances the efficiency of payment processes, benefiting both financial institutions and users.

The DFI alumni played a pivotal role in implementing IPS and driving interoperability. According to EthSwitch's annual report (2023–2024) highlight transformative growth in transaction volumes and inclusivity, P2P fund transfer service supports "Account to Account (A2A)," "Account to Wallet (A2W)," "Wallet to Account (W2A)," and "Wallet to Wallet (W2W)" transfers:

- 2020/21 Fiscal Year (FY):[30] P2P interoperability processed 29,881 transactions.
- 2021/22 FY:[30] P2P transactions surged to 2.06 million, marking a 6,800% year-over-year increase (compared to 2020/21).
- 2022/23 FY:[30] P2P transactions grew to 14.14 million, the volume of transactions increased by 584% from the prior year.
- 2023/24 FY:[30] P2P transactions reached 49.69 million which amount to ETB 270.7 billion, the volume of transactions increased by 251% from 2022/23, driven by expanded interoperability and mobile money adoption. The P2P interoperable service is supported by 38 participants, comprising 29 banks, 6 MFIs, 2 PIIs, and 1 digital wallet provider.

This indicated that P2P transactions grew 6,800% between 2020/21 and 2023/24 (from 29,881 to 49.7 million), underscoring the IPS's scalability and its role in enabling seamless cross-institutional transfers. While growth rates slowed post-2021/22 (584% → 251%), absolute transaction volumes increased 24-fold from 2021/22 to 2023/24, reflecting sustained system maturity. The IPS implementation catalysed Ethiopia's digital payment ecosystem, with P2P transactions growing exponentially.

According to the AfricaNenda Foundation State of Inclusive Instant Payment Systems (SIIPS) in Africa 2024 report[31], EthSwitch's Instant Payment System (IPS) in Ethiopia has advanced financial inclusivity by elevating P2P/P2B payments to a basic level on the inclusivity spectrum. Despite being operational for only two years, EthSwitch processed

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[31] The State of Inclusive Instant Payment Systems in Africa – 2024 Report.

transactions equivalent to 3% of Ethiopia's gross national income (GNI) in 2023. The system connects 35 participating banks. EthSwitch's IPS uses ISO 20022 standards and APIs for overlay services, such as payee confirmation.

- **National Payment Gateway (NPG)**

Concurrently, the **National Payment Gateway** will be offered as a multi-tenant system, allowing acquiring institutions that subscribe to the platform to onboard and manage their own merchants independently. EthSwitch serve as the National Gateway for digital transactions in Ethiopia, connecting various financial institutions, merchants, and customers to enable secure and efficient digital payment. The system will enable merchant DFSPs to configure various payment channels (e-commerce, QR) and payment methods (card, account, wallet) for each merchant they onboard.

The DFI alumni working at EthSwitch emphasised the numerous advantages of the NPG platform, including its ability to onboard and manage multiple merchants, provide a robust and secure system that enhances outreach and scalability, and support transactions through various payment methods such as cards, QR codes, wallets, and accounts. Additionally, the platform offers features to view transactions, track payment statuses, manage recurring payments, and efficiently handle disputes, making it a versatile and reliable solution. Alumni highlighted that two banks are operational for the NPG, and all other institutions are in progress.

DFI Alumni working in EthSwitch stated that for the NPG, they have implemented the card-not-present transaction for e-commerce. They are on the way to concluding the account-based QR and dynamic QR.

EthSwitch now has an interface with the Ministry of Trade and Industry (MOTI) using the NPG platform. MOTI is a government entity that drives significant tax collection and also works with the Trade Information Bureau. With more government offices joining the platform and the NBE accrediting that government services should be delivered digitally; this initiative underscores the inclusivity and digital advancement in Ethiopia's financial ecosystem.

According to EthSwitch's annual report (2023–2024)[32], the National Payment Gateway (NPG) has been implemented, and pilot was launched at the beginning of the fiscal year. Participant banks were involved, and after successfully meeting the NBE's validation requirements, the NPG received approval for commercialisation in May 2024. The implementation of this initiative underscores EthSwitch's commitment to fostering a more inclusive and efficient digital payment ecosystem in Ethiopia.

- **Shared Wallet Platform**

Additionally, the **Shared Wallet Platform** offers a multi-tenant solution for financial institutions without their own wallet systems, enabling them to host customer wallets (white labelled) on this platform. Both direct and indirect participants in the payment system can utilise the shared wallet as a payment instrument, fostering broader financial inclusion and participation. The DFI alumni working at EthSwitch mentioned that the shared wallet is now live with two banks providing on-us transactions, and other institutions are expected to join soon.

The shared wallet platform represents a transformative solution in the digital financial services space, designed to foster financial inclusion and streamline operations for digital financial service providers (DFSPs) such as banks, MFIs, telecom companies, and fintechs. Developed in collaboration with fintech solutions provider, the platform is built on a multi-tenant architecture that enables seamless integration and interoperability. Its white-labelled nature allows DFSPs to offer tailored DFS without requiring extensive technical expertise, thereby lowering the barrier to entry and accelerating go-to-market. Key features such as multi-language support, configurable transaction limits, and multi-level KYC options ensure accessibility for a wide range of users, including those in underserved or unbanked communities. The platform's API-first approach and advanced security measures, including asymmetric encryption and multifactor authentication, further enhance its flexibility, scalability, and reliability.

A prime example of its use case is its application in enabling interoperable fund transfers, including P2P, peer-to-business (P2B), and government-to-person (G2P) transactions. For instance, a low-income individual in a rural area can use the platform to receive social welfare payments from the government (G2P), pay utility bills, or transfer funds to family

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[32] Annual Report – EthSwitch S.C. (Accessed February 9, 2025)

members in urban areas (P2P). The platform's agent-assisted cash-in/cash-out functionality ensures that even users without smartphones or internet access can participate in the digital economy. Additionally, its support for merchant payments and enterprise payments empowers small businesses to accept digital payments, fostering economic growth and financial inclusion. The phased rollout of the platform, starting with pilot implementations and expanding to include advanced functionalities like recurring payments and bulk payments, demonstrates its adaptability to diverse user needs. By providing a versatile, secure, and inclusive digital financial ecosystem, the shared wallet platform is paving the way for a more equitable and accessible financial future.

2. Agency Banking

Alumni from the IIPS course are actively involved in projects targeting unbanked and underserved populations, particularly in rural communities and among women. For instance, one alumnus is implementing[33] agency banking solutions in MFIs, offering various loan solutions to attract informal businesses and support youth, thereby reducing unemployment.

Additionally, they provide core banking solutions and digital banking solutions enabling clients apply for loans, and access secure loan options, both collateral and non-collateral through digital platforms.

The agency banking model helps create job opportunities and expand service coverage in rural areas by training local community members to become agents. This includes providing biometric tablets to agents in rural areas, assisting clients in accessing learning methods, and becoming MFI clients through biometric recognition. Currently, to provide agency services, the MFI has signed a master-agent agreement with the MNO providing telecom services. The MNO has 17,000 sub-agents, so the MFI uses those sub-agents to provide agency services on behalf of MFIs.

The partnership with micro-entrepreneurs as financial service facilitators ensures all clients can access microcredit solutions, promoting gamification and incentive. The agency banking solution also features AI-based credit scoring, increasing loan delivery speed and efficiency. Alumni are also offering non-collateral loan solutions such as payday loans salary advance loans, and financing for entrepreneurs, women, and informal businesses. The MFIs have also started "buy now, pay later" financing for appliances, medical expenses, and educational purposes. There are plans to partner with NGOs to provide

[33] Agency banking refers to the use of agents who are authorised by a financial institution to provide banking services to customers, such as account opening, cash deposits, cash withdrawals, bill payments and loan applications, to underserved and remote areas.

device financing for targeted customers, offering smartphones that support financial, health, and agricultural education.

Additionally, one alumnus working in sharia-compliant bank in Ethiopia are using agency banking with a wallet option. Currently, the sharia-complaint bank has 1,585 agents who are registered and provide agency services on behalf of the bank. The initiatives significantly impact financial inclusion in Ethiopia by providing innovative and scalable financial services to unbanked and underserved populations. Agency banking solutions help reduce unemployment, promote financial literacy, and support economic growth in underserved areas. The growth of agency banking solutions with a wallet option has also helped banks expand rapidly with over hundreds of branches established in short periods.

3. Ethiopian Interoperable QR Code Standards (P2M Payments)

Most of the alumni interviewed confirmed that they are working on the adoption of Ethiopian QR code standards or the implementation of person-to-merchant (P2M) payments for digital payments. Here are the details from six DFI alumni:

i. One of our alumni working at the central bank stated that the QR code and other standards have been developed in collaboration with EthSwitch and banks. The NBE is working progressively with EthSwitch.

In line with this, On December 1, 2024,[34] The NBE has announced as a new directive requiring all payment service providers in Ethiopia to implement standardised QR codes for digital payments through government media. This initiative aims to unify the diverse QR codes currently in use, ensuring secure, interoperable, and consistent transactions. The new standard is expected,[34] to enhance the digital payment ecosystem, increase accessibility, and drive economic growth. EthSwitch, the national switch operator, will provide the necessary infrastructure for QR code interoperability under the supervision of the NBE. This move is part of Ethiopia's broader effort to promote digital financial services and support economic inclusion.

The NBE has issued a new national standard called the "Standard for Interoperable QR Code Payments, Interoperable P2M Payments Using QR Code."[35] This initiative aims to enhance digital payment accessibility, reduce cash dependence, and ensure secure, seamless transactions across Ethiopia's financial ecosystem. The interoperable QR standard is tailored to support secure, efficient, and widespread use of QR payments for all stakeholders, from large enterprises to individual consumers.

[34] Ethiopia Mandates Standard QR Code for Digital Payments-Fana Broadcasting Corporation. (Accessed January 20, 2024)
[35] QR Code Standard- National Bank of Ethiopia. (Accessed January 20, 2024)

ii. The second DFI alumni working at the National Switch highlighted that their institution is now operational with QR code payment systems. The IPS supports various use cases, including *peer-to-merchant (P2M)* QR transactions, and they are also planning to launch request-to-pay (R2P) feature on the same platform. Additionally, they are developing account-based and dynamic QR code solutions, ensuring seamless integration between the NPG and IPS systems for real-time account information management. To maintain interoperability and security, the NBE requires all stakeholders to comply with the national QR Code Standards, which are aligned with the [30] EMVCo framework. As part of this compliance, many industry players are undergoing certification processes through EthSwitch.

In line with this, according to the NBE reports during an event about accelerating the adoption of interoperable QR payments in November 2024, in collaboration with the National Switch, the Ethiopian QR Code Standards (P2M Scheme) applicability presented that the QR Code standards are based on the[36] EMVCo standards and applicable to all Payment Service Providers (Banks, MFIs, PIIs, and PSOs). This standard will unify all regulated FSPs to offer interoperable acquiring services. Any merchant may have a settlement account with any bank and still be served by another Acquirer or PSP to take payments through a QR code. Additionally, the NBE stated that the objective or goal of Ethiopian QR code to avoid having multiple QR codes at merchant's counter, to expand and simplify digital merchant payments, and to enhance efficiency and trust in the payment system.

The third DFI alumni, working in a Sharia-compliant, interest-free bank in Ethiopia, is involved in providing interoperable QR payments. This payment scheme, designed by EthSwitch, facilitates instant payments. The bank is the first to comply with interoperable QR reading capability through its Omni Plus mobile banking channel. They are also developing merchant systems that leverage the instant payment system. The interoperable QR payment provides accessibility and flexibility to bank customers and merchants, allowing payments from different banks. This system benefits the Muslim community, mainly engaged in small and medium businesses (SMEs), by enhancing their payment acceptance methods. The interoperable QR payments will also support inward remittance and cross-border payment options, stabilising liquidity and increasing transactions. The QR payment system prioritises small and medium businesses (SMEs), particularly those owned

[36] EMVCo is the global technical body that facilitates worldwide interoperability and acceptance of secure payment transactions. EMV® QR Code Specification for Payment Systems (EMV® QRCPS) Merchant-Presented Mode | EMVCo. (Accessed January 20, 2024)

by Ethiopia's Muslim community such as market vendors, neighborhood shops, service providers. It also targets merchants engaged in cross-border transactions, including businesses dependent on remittances or international trade. By catering to these groups, the system addresses gaps in Ethiopia's financial ecosystem, where SMEs and faith-aligned enterprises often face barriers to accessing modern payment tools. For example, market vendors can now accept instant payments from customers across different banks, while remittance-reliant businesses gain seamless integration with cross-border transactions, enhancing their operational reach. Inclusivity is embedded through interoperability, which eliminates the need for costly POS infrastructure, allowing even resource-constrained merchants to participate. The system's Sharia compliance ensures Muslim-owned businesses, historically marginalised by interest-based banking, can engage ethically. Instant settlement improves cash flow for SMEs, while QR's low-tech design bridges the gap for rural or informal merchants lacking smartphones or internet access. Additionally, cross-border functionality stabilises liquidity for businesses tied to global supply chains, democratising financial access for underserved segments. This approach not only empowers marginalised groups but also strengthens Ethiopia's broader economic connectivity.

iv. The fourth alumni working at National Switch mentioned that QR payments have two methods: static and dynamic QR codes. Static QR codes are for fixed payments, meaning merchants display one static payment method with a fixed amount. Customers scan this displayed QR code to easily pay the requested amount. Dynamic QR codes, on the other hand, generate a new QR code for each transaction, embedding specific details such as the transaction amount, payer information, or an invoice reference. This type of QR code is ideal for customised payments like online shopping or billing systems where the amount varies per transaction.

Currently, almost all banks are integrated with IPs like push payments, but only two participants have joined for QR payments. Other institutions are in the integration phase, with QR payments and R2P (request to pay) payments in the test phase. Once finalised, they will proceed to the integration phase. Currently, two banks are working with our office, and we are integrated with QR and R2P payments.

v. The fifth alumni, serving as the CTO of a Payment Instrument Issuer, emphasising that they are participating in QR payment implementation and IPS projects for P2P and bulk payments in collaboration with the National Switch, targeting a launch within the next few weeks. However, they cautioned that while IPS is a critical component, innovation should not be limited to or entirely dependent on this system alone. For instance, merchants now only need to display a single, standardised QR code compatible across all financial institutions, eliminating the previous clutter of multiple institution-specific codes. This shift toward interoperability driven by national standardisations, digitalisation, and the NBE's financial inclusion goals, has streamlined transactions and enhanced user experiences for individuals, merchants, and agents alike.

vi. The six alumni, working as a senior consultant, stated that they are currently working on starting QR code implementation in the public sector in Ethiopia. They are integrating this project with the local market. Their roadmap includes tokenising existing physical cards to move to mobile and connecting QR codes to mobile money wallets. The QR code will be interoperable, meaning any digital channel must be interoperable with a QR code. This will allow banks to use QR code interoperability for clients and various use cases. One of the use cases is to integrate mobile banking or mobile wallet interoperability QR codes quickly, addressing customer transactions or any digital transactions happening on the merchant or client side.

Overall, the QR code payment initiatives have positively impacted financial inclusion by providing flexible, interoperable, and user-friendly payment solutions, aligning with Ethiopia's digitalisation strategies.

4. Blockchain

Alumni are actively involved in projects targeting unbanked and underserved populations, including rural communities and women. For instance, one alumni working in 3BLTech-Technology Company is developing mobile apps and internet technologies. The project is currently in its early implementation stage. One of the products they are working on involves a robust banking system with a channel banking platform. They plan to offer mobile banking services through a mobile app or USSD code, enabling users to lend and borrow money based on their credit scores. Additionally, there will be a customer rewards system for lending money.

The integration of blockchain technology is a key aspect of this project, particularly for managing Know Your Customer (KYC) processes. Blockchain will be used to assign credit scores based on customer reputations, affecting their access to services from the company and its partners. In rural areas, the plan includes using these services to support the local population. For example, farmers will be able to borrow money for fixed periods using USSD services.

The project primarily targets unbanked and underserved populations, with a focus on **farmers** (e.g., irrigation-dependent farmers requiring upfront capital for planting), **rural populations** (leveraging USSD for mobile banking without internet access), and **women** (prioritised to bridge gender gaps in financial access). These groups often lack formal banking relationships but are central to the initiative's inclusive design. For instance, farmers can access short-term loans aligned with seasonal farming cycles, while rural users benefit from USSD-based services that bypass smartphone dependency. Women, historically excluded from traditional financial systems, are empowered through tailored products that address their unique economic roles and barriers.

The project also includes various other digital service products. The plan is to use mobile apps and internet technologies, along with blockchain, to deliver these digital products. USSD technology will be particularly useful for reaching rural populations. However, the project faces significant challenges due to regulations from the NBE and the need for additional licenses from the Ministry of Trade and the National Bank of Ethiopia.

The pilot project, conducted in the eastern part of the country, involved farmers who practice irrigation. These farmers need more money during the initial farming stages and save money after harvesting. The project aims to use community organisations and collateral, such as animals, to support short-term loans. This approach has shown significant opportunities for impact assessment.

The project is expected to create a win-win situation for both the company and the communities. For instance, providing loans to farmers will enable them to cultivate more land and increase their income. During harvesting, farmers can save the cash they earn, which will help the company mobilise savings and improve liquidity.

Blockchain underpins inclusive lending by generating reputation-based credit scores (e.g., repayment history, community trust) instead of relying on traditional collateral or formal credit histories. This system incorporates alternative data like mobile transaction patterns and agricultural cycles, broadening eligibility for microloans. USSD and mobile apps democratise access, enabling rural users to build credit profiles and secure loans collateralised by assets like livestock. Transparent blockchain-managed KYC processes and scoring foster trust, incentivising community-driven lending and rewards systems. This approach aligns with micro-lending objectives, ensuring marginalised groups gain sustainable financial access while mitigating risks for lenders.

The project will also raise awareness about financial inclusivity among both urban and rural populations. It will educate people about financial issues such as lending, borrowing, and fulfilling agreements. The use of digital technologies will provide access to financial services and increase understanding of digital platforms. The project aims to significantly improve the financial inclusivity rating in Ethiopia. By deploying this project, it will have a substantial impact on financial inclusivity and contribute to the country's digital roadmap strategy.

This alumni-led initiative targets unbanked and underserved populations, including rural communities and women. Key components include mobile banking, USSD services, and blockchain for KYC management. The project faces regulatory challenges but aims to create a win-win situation for both the company and the communities. It will raise awareness about financial inclusivity and digital technologies, significantly impacting Ethiopia's financial inclusivity rating and contributing to the country's digital roadmap strategy.

5. Digital Ethiopia 2025 Strategy

The DFI alumni have played a significant role in advancing Ethiopia's Digital Ethiopia 2025 Strategy[37], a national framework focused on digital transformation, financial inclusion, and interoperable payment systems. Specifically, DFI alumni have contributed to:

- Designing and implementing the National Bank of Ethiopia's three-year strategy to raise financial inclusion rates from 46% to 70% by 2027.
- Integrating digital IDs, fostering partnerships with fintech firms, and advocating for regulatory reforms to streamline digital financial services.
- Supporting EthSwitch's real-time payment infrastructure and payment interoperability initiatives, which are foundational to the Instant and Inclusive Payment System (IIPS).

Impact on IIPS and Financial Inclusion: By aligning their efforts with the Digital Ethiopia 2025 Strategy, DFI alumni have directly influenced:

- **IIPS Efficiency:** Their work on payment interoperability (e.g., through EthSwitch) ensures seamless, real-time transactions across institutions, reducing costs and delays.
- **Inclusion:** Regulatory enhancements—such as updated guidelines from the National Bank of Ethiopia and the Ministry of Innovation and Technology—have

[37] Home | Ethiopian Digital Foundations Project. (Accessed January 20, 2024)

expanded access to mobile wallets and digital services, particularly for rural and underserved populations.
- **Scalability:** Initiatives like standardised QR codes and simplified merchant onboarding, driven by alumni collaboration, have eliminated the need for multiple payment instruments, directly supporting the strategy's goal of a unified financial ecosystem.

These efforts by DFI alumni are pivotal in achieving the goals set by the Digital Ethiopia 2025 strategy, have accelerated progress toward Ethiopia's vision of a digitally inclusive economy, where interoperable systems like IIPS empower individuals, merchants, and agents to participate fully in the financial sector.

For more details, please refer to Annex 1: List of identified DFI alumni and their contributions to developing the IIPS related initiative.

6. Collaboration and Partnerships

DFI alumni have been pivotal in advancing Ethiopia's IIPS initiatives, leveraging insights from the IIPS training to foster partnerships, address capacity gaps, and champion interoperability. Their contributions include:

- **Facilitating Stakeholder Collaboration:** Alumni applied principles from the IIPS training to negotiate partnerships across financial institutions, telecom providers, fintechs, and government bodies, ensuring alignment with national goals like financial inclusion and digital transformation.
- **Strengthening Regulatory Frameworks:** By working with the National Bank of Ethiopia (NBE) and the Ministry of Innovation and Technology, alumni helped shape policies that enforce ISO 20022 standards for QR payments and mandate participation in interoperable systems.
- **Empowering Underserved Communities:** Alumni supported initiatives like Sharia-compliant banks' sponsorship of Microfinance, enabling rural MFIS to join the national payment ecosystem and expanding access for low-income populations.

Key Partnerships Fuelling IIPS Success

1. **Government Collaboration:**
   National Payment Gateway (NPG): EthSwitch integration with the Ministry of Trade and Industry (MOTI) streamlines tax collection and trade license management via NPG platform.

Regulatory Alignment: The NBE's mandate for digital government services and ISO 20022 compliance ensures seamless integration of ministries and agencies into the IIPS. Alumni played a key role in advocating for these standards.

Policy Enablement: The government's digitalisation framework, supported by alumni input, has unified stakeholders and accelerated product development (e.g., interoperable QR codes).

2. **Private Sector and Financial Institutions**

   Banks and MFIs: Over 40 banks and financial institutions use the IPS for P2P transfers, with plans to expand participation. Alumni collaborated with SACCOs and cooperative unions to deliver rural digital solutions.

   Fintech Innovation: Alumni partnered with fintechs to develop payment systems, such as simplified merchant onboarding and dynamic QR codes, reducing reliance on multiple payment instruments.

   Telecom Integration: Partnerships with Ethio Telecom and Safaricom enhanced mobile money services, enabling affordable smartphone access to digital financial tools.

   Merchant Adoption: Alumni-led memorandums with supermarkets and payment operators aim to scale instant payment systems, improving customer choice and merchant reach.

3. **Ecosystem and Community Engagement**

   Donor Countrywide Program: Alumni contribute to initiatives like the Micro, Small, and Medium Enterprise Recovery and Resilience **(MESMER) program** (supported by Mastercard Foundation and First Consult), which provides MSMEs with financing, business training, and psychosocial support, targeting youth and women.

   MESMER Program Overview:[38] The MESMER program is a five-year countrywide initiative launched in October 2022. It supports 72,200 enterprises and 410,800 jobs, providing MSMEs with access to finance, business development, psychosocial services, and technical assistance. First Consult and Mastercard Foundation implement the program as part of the Foundation's Young Africa Works strategy. It aims to create dignified work for youth, especially women.

   Financial Literacy: Collaborations with NGOs and donors deliver rural training programs, ensuring end-users can confidently navigate digital payment system.

Future Priorities

- **Expanding Partnerships:** Alumni aim to deepen ties with fintechs, telecoms, and international donors to enhance IIPS scalability.

[38] Mastercard Foundation and First Consult Announce Program to Support 72,000 Micro, Small, and Medium Enterprises - Mastercard Foundation.

- **Inclusive Design:** Focus on user-friendly interfaces and rural agent networks to bridge the urban-rural divide in financial access.
- **Risk Mitigation:** Alumni continue to refine strategies to address cybersecurity and interoperability challenges, ensuring trust in the ecosystem.

Impact of collaborations on IIPS and Financial Inclusion

- **Interoperability:** Alumni-driven collaborations have unified payment systems, enabling real-time transactions across institutions and reducing costs.
- **Inclusion:** By integrating MFIs, SACCOs, and rural cooperatives, alumni have extended financial services to 410,800 jobs and 72,200 enterprises through programs like MESMER.
- **Scalability:** Ethiopia's financial inclusion rate is on track to rise from 46% to 70% by 2027, fueled by alumni-led regulatory reforms and partnerships.

Challenges in the Implementation IIPS in Ethiopia

This table provides a comprehensive analysis of the challenges encountered in implementing Inclusive Instant Payment Systems (IIPS) in Ethiopia. It categorises these challenges across different financial sectors and highlights specific examples, along with proposed solutions.

Category	Challenge Description	Context & Impact	Affected Sector/Use Case	Proposed Solutions
Financial, Digital, and Technological Literacy	Lack of knowledge in digital financial services, especially among rural and underserved populations.	Leads to low adoption rates, dependency on intermediaries, and inefficiencies in system use.	Rural communities, MFIs, Digital Account Users	Large-scale financial literacy programs, training initiatives, and awareness campaigns.
Low Readiness	Lack of infrastructure, technical expertise, and strategic alignment for IIPS adoption.	Slows implementation and prevents financial institutions from integrating digital solutions effectively.	Banks, MFIs, Fintechs	Institutional readiness assessments, phased implementation, and stakeholder training.
Market Resistance	Traditional financial actors and merchants resist digital payments due to fear of disruption and cost concerns.	Slows digital payment adoption, maintains reliance on cash transactions.	Banks, Merchants, Digital Finance Providers	Stakeholder engagement, merchant incentives, and promotion of digital success stories.
Cybersecurity Risks	Lack of security frameworks and fraud prevention measures in digital payment systems.	Results in financial losses and mistrust in digital finance services.	Banks, Fintechs, Digital Payment Users	Implementation of cybersecurity protocols, fraud detection systems, and consumer awareness programs.

Gender Barriers	Limited access to financial services for women due to systemic socio-economic barriers.	Restricts financial inclusion and economic opportunities for women.	Women in rural areas, Digital Financial Services	Tailored financial products, gender-focused training, and policy support.
Limited Expertise	Existing teams trained mainly in traditional banking lack skills in instant payment systems.	Hinders the adoption and effective management of IIPS platforms.	Banks, Fintechs, Payment Operators	Specialised training programs for financial professionals, knowledge-sharing networks.

Vendor Dependency	Excessive reliance on third-party vendors for system development and maintenance.	Causes delays and limits in-house expertise development.	Banks, National Switch, Fintechs	Encouraging in-house IT skill development, reducing reliance on external vendors.
Financial Constraints	High integration costs for digital platforms make adoption difficult for small financial institutions.	Restricts financial inclusion and slows digital transformation.	Banks, National Switch MFIs, Fintechs	Government subsidies, donor funding, and shared infrastructure models.
Stakeholder Collaboration	Lack of coordination between banks, fintechs, and regulators leads to fragmentation.	Slows system integration and reduces efficiency in implementation.	Regulators, Banks, National Switch	Regular collaboration forums, regulatory alignment, and joint fintech initiatives.
Regulatory Delays	Slow approval processes and lack of clear regulations impede project rollout.	Prevents timely implementation of new financial services and deters innovation.	Regulators, Banks, Fintechs	Streamlined approval frameworks, policy reforms, and engagement with regulators.
Marketing and Awareness	Low awareness and inadequate marketing efforts hinder digital payment adoption.	Results in low transaction volumes and continued reliance on cash.	Consumers, Banks, National Switch, E-commerce Platforms	Nationwide campaigns, digital literacy programs, and business incentives for digital transactions.
Product Availability	Limited digital products and poor e-commerce integration reduce digital transaction incentives.	Hinders digital payment adoption and restricts consumer choice.	E-commerce, Banks, Fintechs	Investment in e-commerce infrastructure and integration with digital payment platforms.
National ID Coverage	Incomplete digital ID system limits KYC compliance and financial service access.	Increases fraud risks and restricts financial inclusion.	Banks, MFIs, Government Agencies	Expansion of national ID programs and seamless integration with financial service providers.

Infrastructure Limitations	Limited internet and mobile network coverage hinders digital service access.	Reduces financial inclusion and adoption of digital banking services.	Rural Areas, Mobile Network Operators, Banks	Investment in telecom infrastructure and mobile banking penetration.

Human Capital	Shortage of skilled professionals in digital finance, high turnover rates.	Affects sustainability of IIPS initiatives and slows growth.	Banks, National Switch, Fintechs, Payment Service Providers	Workforce training, career incentives, and professional development programs.
Liquidity Issues in Rural Areas	Agency banking faces persistent cash flow problems, limiting transactions.	Reduces reliability and discourages consumers from adopting digital services.	MNOs, Banks, MFIs, Agency Banking, Rural Financial Services	Working capital solutions for agents, enhanced cash distribution mechanisms.
Technology and Human Resources	Limited IT infrastructure and trained personnel slow service scaling.	Prevents seamless customer onboarding and widespread adoption.	Banks, MFIs, Telecom Providers	Investment in technology, human resource training, and system automation.
Government and NGO Support	Limited engagement from the government and NGOs in supporting digital literacy and agency banking.	Slows financial inclusion and adoption rates.	Regulators, NGOs, Financial Institutions	Stronger policy initiatives, public-private collaborations, and literacy programs.
Selective Lending Criteria	Limited funding forces strict loan eligibility requirements.	Excludes many small-scale entrepreneurs and rural customers.	Banks, MFIs	Flexible credit scoring models, innovative lending solutions.
Infrastructure Issues	Network issues and limited internet access affect digital banking operations.	Creates friction in user experience and limits accessibility.	Banks, Telecom Providers	Investment in mobile banking and USSD-based solutions.
Integration Issues	Banks face difficulties integrating IPS due to differences in core banking systems.	Delays rollout and increases costs of implementation.	Banks, National Switch (EthSwitch)	Alignment with ISO 20022 standards, streamlined onboarding processes.

Testing Environment Limitations	Use of the same environment for testing and live transactions affects product readiness.	Results in unstable rollouts and security vulnerabilities.	Banks, National Switch, Fintechs, Payment Service Providers	Dedicated testing environments, improved quality assurance measures.
Scalability and Effectiveness	Current IPS schemes are concentrated in urban areas, excluding rural populations.	Widens the financial inclusion gap between cities and rural regions.	Banks, Government, NGOs	Expansion of digital infrastructure, targeted inclusion programs.

Opportunities for Advancing IIPS in Ethiopia

This table provides a comprehensive analysis of the opportunities for advancing Inclusive Instant Payment Systems (IIPS) in Ethiopia. It categorises key opportunities across various financial sectors, highlighting specific examples and strategic solutions.

Opportunity Category	Description	Affected Sector/Use Case	Strategic Solutions
Enhancing Interoperable Payment Systems	Expansion of interoperable payment solutions such as mobile wallets and QR code systems.	Banks, National Switch, Fintechs, Mobile Network Operators, Payment Instrument Issuer	Investment in infrastructure, regulatory support, and market-wide adoption of standardised payment frameworks.
Digitising Microcredit and Microlending Services	Use of technology to streamline microcredit and lending processes, enhancing accessibility.	Microfinance Institutions (MFIs), Digital Lenders, Banks	Integration of credit-scoring algorithms, mobile lending apps, and financial literacy programs.
Fostering Stakeholder Collaboration	Partnerships between financial institutions, regulators, and private sector players to drive adoption.	Regulators, Banks, Fintechs, Payment System Operators	Regular industry forums, regulatory sandboxes, and joint financial inclusion initiatives.
Leveraging International Support and Funding	Accessing funding from organisations such as Gates Foundation and ADFI to strengthen payment system capabilities.	Banks, Development Partners, Regulatory Bodies, Micro Finance Institutions (MFIs)	Proposal development for funding, capacity-building programs, and global networking initiatives.

Scaling Digital Infrastructure	Expansion of mobile networks, digital platforms, and last-mile financial services.	Telecommunications, Banks, Payment System Operators, Mobile Network Operator (MNO)	Government-private sector collaborations, increased investment in connectivity.
Government and Regulatory Support	Policies and incentives promoting digital payments and tax reliefs for financial service providers.	Regulators, Banks, Government Agencies	Advocacy for favourable regulations, tax waivers for digital transactions.
Financial Inclusion and Digitalisation	Implementation of mobile banking, internet banking, and digital payment solutions.	Banks, Mobile Network Operator (MNO), Digital Payment Providers, Unbanked Communities	Mobile-first strategies, enhanced user experiences, digital literacy programs.
Untapped Market Potential	Large unbanked populations, especially in rural areas, offer growth opportunities.	Rural Communities, Small Businesses, Cooperatives, Micro Finance Institutions (MFIs)	Developing targeted financial products, localised outreach campaigns.
IT Infrastructure Expansion	Growth in internet service providers and telecom services improving digital payments.	Telecommunications, Digital Service Providers	Investment in fiber optics, mobile penetration strategies.
Skilled Workforce	Ethiopia has an emerging pool of skilled professionals for fintech and digital services.	Tech Startups, Banks, Fintechs	Upskilling programs, incentives for technology professionals.
Digital Strategy Alignment	National digital strategy aligning with Ethiopia's financial inclusion goals.	Government Agencies, Financial Institutions	Integration of digital finance initiatives into national economic plans.
Bridging Financial Inclusion Gaps	Using IPS to ensure gender-inclusive financial services and secure data protection.	Women, Rural Communities, Underserved Groups	Tailored financial literacy programs, gender-responsive financial products.

Technological Advancements in Banking	Implementation of AI, blockchain, and other digital tools to enhance banking services.	Banks, Digital Lenders, Fintechs	Research & development funding, regulatory frameworks supporting innovation.
Interoperable QR Payments	Government-mandated QR payments expanding digital transaction accessibility.	Retailers, SMEs, Payment Service Providers	Merchant education programs, seamless QR integration into banking apps.
Holistic Digital Banking Transformation	Moving banks towards a fully digital model within five years.	Commercial Banks, Digital Banks	Phased implementation of digital banking solutions, regulatory support.
Financial Inclusion and Economic Growth	Digital payments supporting small businesses and economic growth.	Small Businesses, E-commerce Platforms, Government Agencies	Integration of digital payment systems with MSME financing models.
Youth Population Engagement	High adoption potential among Ethiopia's young, tech-savvy population.	E-commerce, Mobile Banking, Fintech Startups	Financial literacy programs targeted at youth, gamification of digital finance.
Mobile Penetration Growth	5G and mobile adoption expanding the reach of digital payments.	Telecom Operators, Digital Banks, Fintechs	Mobile-first digital finance strategies, investment in mobile infrastructure.
Social Media & Digital Payments	Growing use of social media platforms as e-commerce and financial service channels.	Social Media Platforms, E-commerce, Digital Payment Providers	Integration of financial services into social platforms, seamless checkout systems.
Government-led Digitalisation Programs	Programs such as the Ethiopian Coders Initiative promoting digital transformation.	Government, Private Sector, Startups	Skills development programs, incentivising digital business models.
Regulatory Support for Fintechs	Ethiopia's financial regulators encouraging fintech innovation.	Fintech Startups, Banks, Regulatory Bodies	Regulatory sandboxes, fast-tracked licensing for innovative solutions.

Seamless IPS Integration	Instant Payment Systems providing a unified financial ecosystem.	Banks, National Switch, Payment Service Providers, Mobile Money Operators	Technical support for banks integrating IPS, shared APIs for fintech collaborations.
Enhanced Cash Flow Management	Real-time payment updates benefiting businesses and financial institutions.	SMEs, Large Enterprises, Banking Sector, National Switch	Automated settlement systems improved financial planning tools.
Cost Reduction via Digital Transactions	Cashless transactions reducing operational costs for businesses and banks.	Retail, SMEs, E-commerce	Encouraging digital payments with incentives for merchants and consumers.
Scalability of Digital Payment Systems	IPS and digital wallets enabling scalable financial solutions.	Banks, Fintechs, Regulatory Bodies	Ensuring multi-currency support, fraud management frameworks.

Security Enhancements in Payments	Greater focus on protecting customer data and digital transactions.	Banks, National Switch, Payment Service Providers, Consumers	End-to-end encryption, biometric verification, AI-driven fraud detection.
Fintech-driven Innovation	New payment schemes such as bulk payments and request-to-pay systems.	National Switch, Banks, MFIs, PIIs, PSOs, Fintechs, Digital Banks, E-commerce Platforms	Promoting fintech collaborations, regulatory compliance support.
Support for Indirect Participants	Integration of mobile money operators, post offices, and rural financial providers.	Government Agencies, Mobile Money Operators, MFIs, Cooperatives, Rural Finance Institutions	Technical capacity-building, partnerships with financial service providers.

Conclusion

The integration of Inclusive instant payment systems (IIPS) into Ethiopia's financial landscape has catalysed transformative changes, driving greater financial inclusion, gender equity, and economic growth. DFI's capacity-building programs, including the impactful efforts of its alumni, have empowered professionals to spearhead initiatives such as agency banking, interoperable QR payments, and blockchain-based solutions, extending financial access to underserved populations. These efforts have addressed critical challenges like limited access to financial services, systemic gender disparities, and rural financial exclusion. Additionally, the strategic alignment of Ethiopia's financial inclusion policies with national priorities has fostered a conducive environment for innovation, encouraging collaboration across public and private sectors. Despite persistent challenges, such as regulatory delays, cybersecurity risks, and market resistance, the progress achieved underscores Ethiopia's potential to achieve its financial inclusion targets and set a benchmark for other developing economies.

Ethiopia’s commitment to bridging financial disparities is evident through policy reforms, technological integration, and strategic partnerships. With a focus on inclusivity and innovation, the financial sector aims to empower underserved populations and drive sustainable economic growth.

Recommendations

By developing and implementing inclusive policies, meeting financial inclusion challenges, and fostering collaboration with key stakeholders, the National Bank of Ethiopia's commitment to adapting its policies and regulatory reforms with changing times is commendable. However, challenges and gaps persist and addressing them through well-designed training programs is crucial to promoting an inclusive, sustainable, and stable financial system. These suggestions and recommendations draw upon the lessons learned from the most impactful DFI courses, Ethiopia's NFIS priority areas, and the needs of market participants.

Category	Initiative	Details
Financial Inclusion and SME Development	SME Finance	Develop curated training programs for policymakers and regulators to address SME financing gaps, informal sector challenges, and institutional coordination issues.
	Women's Financial Inclusion	Promote gender mainstreaming in policies and encourage Ethiopian officials to participate in adapted DFI Gender Equality Changemakers Programme.
	Expanding Financial Products	Encourage the development of innovative financial products tailored to underserved groups, such as micro-loans, 'buy-now-pay-later' services, and credit products for small businesses and farmers.
	Encouraging Private Sector Innovation	Incentivise private sector players to develop scalable, contextually relevant financial inclusion solutions. Ensure alignment with regulatory frameworks.
Digital Transformation and Infrastructure	Green Finance	Build capacity on green finance, green taxonomies, and SMEs' green financing to support sustainable development and environmental protection.
	Scaling Infrastructure and Technology Solutions	Expand digital infrastructure in rural and remote regions, focusing on technologies like USSD and biometric tools for secure and inclusive access.
	Advancing Digital Literacy Programs	Launch localised digital and financial literacy programs using gamification and educational campaigns to promote consistent usage.
Consumer Protection and Regulatory Frameworks	Consumer Protection for DFS	Develop consumer protection programs for digital financial services to enhance trust, promote healthy market competition, and ensure customer security.

	Cybersecurity and Consumer Protection	Establish robust cybersecurity frameworks to build consumer trust and introduce user awareness training programs for safe digital practices.
	Government and Policy Advocacy	Advocate for agile policy reforms and streamlined regulatory processes to accelerate financial inclusion and incentivise financial institutions to adopt interoperable systems.
Capacity Building and Stakeholder Engagement	Enhancing Stakeholder Coordination	Foster stronger collaboration between regulators, financial institutions, and fintech providers through regular stakeholder forums and advisory panels.
	Promoting Inclusivity Through Gender-Focused Policies	Develop comprehensive gender-focused strategies addressing systemic barriers, such as access to credit and digital literacy, while promoting women's leadership in financial sectors.
	Monitoring Impact and Scaling Successful Models	Implement continuous monitoring and evaluation systems to assess the effectiveness of financial inclusion initiatives and scale up successful models.
	Leveraging Communities of Practice (CoPs)	Strengthen CoPs to enhance knowledge sharing and professional development among alumni and industry peers, fostering collaboration and innovation.

Annexes

1. List of Identified DF Alumni and their Contributions to Ethiopian IIPS

Name	Amensisa Korea
Position	MFI Professional/ Chief Digital Transformation and Product Officer
Organisation	Digaf Micro Finance Institutions
Country	Ethiopia
Professional Experience	10+ years of experience in the digital banking industry and MFI
What? (Contribution)	DFI alumni working in Microfinance Institutions (MFIs) are implementing innovative agency banking solutions that promote financial inclusion by providing various loan options to informal businesses and youth, reducing unemployment. They are also developing digital banking solutions that allow clients to onboard themselves, apply for loans, and access secure loan options. The agency banking model trains local community members as agents, creating job opportunities and expanding service coverage in rural areas. Additionally, the solutions include AI-based credit scoring, gamification, and interactive learning, enhancing financial services and accessibility for rural and urban communities.
How DFI contributed?	The IIPS training from DFI significantly impacted Amensisa's professional journey, helping him transition from traditional to digital banking. This training enabled him to implement innovative and scalable financial solutions at DIGAF Microfinance, targeting under-banked and underserved communities, and addressing financial exclusion. The training equipped Amensisa with the skills to overcome challenges such as cybersecurity risks, gender barriers, and liquidity issues. It also provided him with knowledge about real-time transactions, cost-efficient solutions, and eliminating intermediaries, which were crucial for developing new banking solutions and agency banking models. He gains with the knowledge and skills to implement innovative digital banking solutions, including secured and unsecured loans, payday loans, and salary advance loans, which are crucial for financial inclusion. Additionally, the training broadened his technological competencies, exposing him to advanced technologies like AI and APIs in payment systems. This has allowed him to contribute effectively to financial inclusion, economic growth, and digital transformation in Ethiopia.
So what? (Significance)	Amensisa's contributions to digital financial inclusion through DIGAF Microfinance are significant. By implementing innovative digital banking solutions, he has provided financial services to under-banked and underserved communities, promoting economic growth and reducing poverty. This shift to digital banking ensures that DIGAF Microfinance remains competitive in a rapidly evolving

	financial sector. The digital and agency banking solutions offer instant, accessible financial services, such as secured and unsecured loans, payday loans, and salary advance loans, which cater to the immediate needs of customers. This convenience enhances customer satisfaction and loyalty. By supporting youth, women, and informal businesses, these initiatives have significantly contributed to the local economy, helping individuals manage cash flow and invest in growth opportunities. The use of advanced technologies like AI and APIs in payment systems represents a major technological advancement in Ethiopia, modernising the microfinance sector and setting a precedent for other institutions. Amensisa's work exemplifies how digital financial inclusion can transform traditional microfinance, making financial services more accessible, efficient, and inclusive.

Name	Tesfaye Admassie
Position	Banking Professional/ Manager, Quality Assurance and Technical Support
Organisation	Bank of Abyssinia
Country	Ethiopia
Professional Experience	15 years of experience in the banking industry
What? (Contribution)	DF alumni working in banks are implementing innovative digital banking solutions that enhance financial inclusion and competitiveness. For example, at the Bank of Abyssinia, they have developed a digital bank called Apollo, which performs all traditional banking functions through digital technology. This includes opening accounts instantly, providing microloans without collateral, and enabling transactions through mobile apps. The digital bank is interoperable with other financial institutions via EthSwitch, promoting inclusiveness by serving the unbanked population. Additionally, they are collaborating with various partners, including NGOs and international organisations, to provide seed money and loans to underserved communities, thereby expanding their customer base and increasing financial accessibility.
How DFI contributed?	He expressed gratitude for the opportunity to take DFI's courses, which provided him with a comprehensive understanding of IIPS. Through DFI, Tesfaye gained valuable knowledge about digital banking and financial inclusion. This education enabled him to contribute effectively to the development and operation of Apollo, a digital bank within the Bank of Abyssinia. The courses helped him understand the intricacies of digital banking, customer support, and the importance of inclusiveness in financial services. Tesfaye's work involves managing customer inquiries and technical support for Apollo, which offers various digital banking services, including account opening, transactions, and microloans. The knowledge acquired from DFI's courses has been instrumental in his ability to support and

	improve these services, ensuring they meet the needs of a diverse customer base. Overall, DFI's contribution to Tesfaye's professional growth has been significant, equipping him with the skills and knowledge necessary to drive financial inclusion and digital transformation in Ethiopia.
So what? (Significance)	Tesfaye's contributions to digital financial inclusion through the Apollo digital bank are significant. By providing financial services to the unbanked, particularly those who cannot meet traditional banking requirements, he has promoted economic growth and poverty reduction. The shift to digital banking ensures the bank's competitiveness in a fintech-driven market, essential for its survival and growth. The Apollo platform offers instant, accessible financial services like microloans without collateral, enhancing customer satisfaction and loyalty. With over 500 million loans provided to more than 2 million customers, the project has significantly supported the local economy, aiding small businesses and individuals in managing cash flow and investing in growth opportunities. The use of mobile apps and USSD channels for banking services represents a major technological advancement in Ethiopia, modernising the banking sector and setting a precedent for other institutions. Tesfaye's work exemplifies how digital financial inclusion can transform traditional banking, making it more accessible, efficient, and inclusive.

Name	**Martha Hailemariam**
Position	NBE Professional/ Advisor to Vice Governor, Financial Institutions Supervision
Organisation	National Bank of Ethiopia
Country	Ethiopia
Professional Experience	27+ years of experience in the National Bank of Ethiopia (NBE)
What? (Contribution)	Martha has played a key role in establishing a regulatory sandbox to foster innovative payment systems, enhancing financial inclusion through digitalisation and national IDs. She has addressed capacity challenges at the central bank by implementing a human capital transformation strategy and organising training programs with institutions like Cambridge University and the IMF, improving skills and knowledge for better implementation of instant payment systems. Martha has facilitated collaborations with international partners such as UNCDF and UNDP to improve financial inclusion for SMEs and unbanked regions, leading to increased digital payment transactions and greater financial sector integration. She has also been involved in developing and implementing the National Bank's three-year strategy to increase financial inclusion from 46% to 70% by 2027, and advancing the Digital Ethiopia 2025 initiative, emphasising digitalisation across various sectors. Additionally, Martha has contributed to the development of agency banking, providing licenses to payment fintech's and mobile operators to deepen

	financial inclusion for SMEs and underserved areas, aligning with broader goals of financial inclusion and digital transformation in Ethiopia.
How DFI contributed?	Martha said DFI has significantly contributed to Ethiopia's financial sector by providing scholarships and training on instant payment systems, enhancing process and design knowledge, and supporting SMEs and exportable goods. This training has improved the capacity of professionals at the National Bank of Ethiopia and EthSwitch, facilitating the implementation of digital payment solutions. Additionally, DFI's efforts have laid the groundwork for future capacity building and the development of Ethiopia's digitalisation policy, driving financial inclusion and digital transformation in the country.
So what? (Significance)	Martha's contributions, supported by the DFI initiative, have had a profound impact on Ethiopia's financial sector. By implementing IIPS, she has significantly advanced financial inclusion, particularly for SMEs and underserved communities. The establishment of a regulatory sandbox and the integration of national IDs have fostered innovation and enhanced fraud prevention. Her efforts in capacity building and international collaborations have improved the skills and knowledge within the National Bank of Ethiopia, enabling better implementation of digital payment solutions. These initiatives align with Ethiopia's broader goals of digital transformation and economic growth, positioning the country as a leader in financial inclusion and digitalisation in the region. Martha's work exemplifies how targeted training, and strategic initiatives can drive substantial progress in developing a modern, inclusive financial ecosystem.

Name	Beza Mamo
Position	National Switch Professional/ Director Payment Application
Organisation	EthSwitch S.C.
Country	Ethiopia
Professional Experience	11+ years of experience in the national switch and Tech Company
What? (Contribution)	Beza has played a pivotal role in advancing Ethiopia's digital payment infrastructure through his work at EthSwitch. As the Director of Payment Applications, he has overseen the development and implementation of several key platforms, including the Card Switch, Real-Time Payments (RTP), Instant Payment System (IPS), and the National Payment Gateway (NPG). His efforts have facilitated interoperability among financial institutions, enabling seamless transactions across ATMs, P2P transfers, and QR payments. Beza has also driven the integration of shared wallets and reconciliation systems, enhancing the efficiency and security of digital payments. By promoting innovative approaches such as credit scoring platforms and sandbox environments for fintechs, he has fostered a culture of innovation and collaboration within the financial sector. Additionally, Beza has addressed capacity challenges by advocating for intensive training and marketing

	campaigns, ensuring that both financial institutions and the public are well-informed about the benefits of digital payments. His work has significantly contributed to Ethiopia's broader goals of financial inclusion and digital transformation, positioning the country as a leader in the adoption of modern payment systems.
How DFI contributed?	DFI has significantly contributed to Beza Mamo's professional development and the advancement of Ethiopia's digital payment systems. Through comprehensive courses on digital payments, DFI equipped Beza with a deep understanding of global payment trends, interoperability, and innovative payment solutions. These courses provided insights into market-led payment strategies, the integration of AI in finance, and the implementation of real-time payment systems. This knowledge enabled Beza to effectively oversee the development of key platforms at EthSwitch, such as the Card Switch, Real-Time Payments (RTP), and the Instant Payment System (IPS). Additionally, DFI's training on regulatory compliance and stakeholder collaboration has helped Beza address capacity challenges and foster a culture of innovation within Ethiopia's financial sector. This support has been instrumental in driving Ethiopia's financial inclusion and digital transformation initiatives.
So what? (Significance)	Beza Mamo's contributions have had a significant impact on Ethiopia's financial sector, driving the country's digital transformation and financial inclusion efforts. By implementing key platforms like the Card Switch, Real-Time Payments (RTP), and the Instant Payment System (IPS), Beza has enabled seamless and secure digital transactions across the country. His work has facilitated interoperability among financial institutions, making digital payments more accessible and efficient for both urban and rural populations. The integration of innovative solutions, such as credit scoring platforms and sandbox environments for fintechs, has fostered a culture of innovation and collaboration within the financial sector. These advancements have not only improved the efficiency of financial transactions but also positioned Ethiopia as a leader in adopting modern payment systems. Beza's efforts have laid a strong foundation for achieving Ethiopia's broader goals of financial inclusion and digital transformation, ultimately contributing to the country's economic growth and development.

Name	Elias Girma
Position	Bank Professional/ Manager, Digital Channels
Organisation	Hijra Bank S.C.
Country	Ethiopia
Professional Experience	9+ years of experience in the banking industry and national switch
What? (Contribution)	Eliyas Girma has significantly advanced Hijra Bank's digital transformation by integrating digital banking technologies and leading the adoption of interoperable QR payments. He is a part of the HalalPay wallet system development and

	expanded the bank's reach through agency banking. Eliyas facilitated the sponsorship of microfinance institutions, enabling their participation in the national transfer system. He also drove technological integration for secure transactions and improved liquidity management. His efforts in fostering partnerships with EthSwitch and collaboration have enhanced the bank's digital payment capabilities, contributing to financial inclusion and economic growth in Ethiopia.
How DFI contributed?	Through its comprehensive courses, DFI provided Eliyas with valuable insights into global payment trends, regulatory compliance, and innovative payment solutions. This knowledge enabled him to effectively integrate digital banking technologies, such as mobile banking and interoperable QR payments, into Hijra Bank's operations. DFI's training also equipped Eliyas with the skills to develop the HalalPay wallet system and improve liquidity management. Additionally, the courses emphasised the importance of financial inclusion and collaboration, guiding Eliyas in fostering partnerships and supporting microfinance institutions. Overall, DFI's contributions have been instrumental in driving Hijra Bank's digital transformation and enhancing financial inclusion in Ethiopia.
So what? (Significance)	Eliya’s contributions have had a significant impact on Hijra Bank and the broader financial landscape in Ethiopia. By integrating digital banking technologies and adopting interoperable QR payments, he has enhanced the accessibility and affordability of financial services for underserved populations, particularly those adhering to Sharia principles. His development of the HalalPay wallet system and expansion through agency banking have furthered financial inclusion, enabling more people to participate in the digital economy. Additionally, Eliyas's efforts in sponsoring microfinance institutions and improving liquidity management have strengthened the financial infrastructure, promoting economic stability and growth. These initiatives align with Ethiopia's goals of digital transformation and financial inclusion, positioning Hijra Bank as a leader in innovative and inclusive financial services.

Name	Dagem Kasahun
Position	Bank Professional/ Shared Service Officer 2
Organisation	EthSwitch S.C.
Country	Ethiopia
Professional Experience	10+ years of experience in the national switch and university
What? (Contribution)	Dagem's contributions to the Instant Payment Systems (IPS) project include successfully implementing and testing various use cases like single credit transfer and QR payments, managing the project in phases with a current focus on phase two, collaborating with banks for integration, and highlighting the main objectives of the IPS project, including fast payments, interoperability, simplicity, security, low cost, accessibility, and innovation. He also addresses challenges related to

	integration, service provider delays, technology weaknesses, and regulatory issues through initiatives like training, technology solutions, and financial support, ensuring the successful deployment of IPS with multiple use cases and benefits for various stakeholders.
How DFI contributed?	DFI significantly contributed to Dagem Kasahun's development of Instant and Inclusive Payment System (IIPS) initiatives, projects, and policies by providing comprehensive and engaging courses. Dagem stated the IIPS courses covered essential topics such as instant payment and inclusion payment methods, solutions, and stakeholders. So, DFI addressed critical aspects of payment systems, including instant fund availability, enhanced customer experience, operational efficiency, and advanced risk management. The training equipped Dagem with relevant and practical knowledge, enabling him to implement state-of-the-art monitoring and prevention tools within the IPS platform. This comprehensive education supported Dagem in enhancing his skills and knowledge, ultimately contributing to the successful development and implementation of IIPS-related projects.
So what? (Significance)	The significance of Dagem's work on the Instant Payment Systems (IPS) project lies in its transformative impact on the financial landscape. By implementing and testing various use cases such as single credit transfer, QR payments (both static and dynamic), and request to payment (R2P), Dagem has facilitated faster, more secure, and efficient payment methods. This project, currently in its second phase, integrates multiple banks and financial institutions, enhancing interoperability and accessibility. The IPS project aims to provide instant fund availability, improve liquidity management, and reduce operational costs, thereby promoting financial inclusion and digital transformation. The successful deployment of these systems not only benefits financial institutions but also end-users, merchants, and the broader economy by offering innovative, low-cost, and secure payment solutions.

Name	Tsegaye Tamiru
Position	Payment Instrument Issue Professional/ Chief Technology Officer (CTO)
Organisation	Kacha Digital Financial Service S.C.
Country	Ethiopia
Professional Experience	17 years of experience in digital financial solutions working in bank, Ethswitch, DFS
What? (Contribution)	Tsegaye has made significant contributions to the development and implementation of inclusive payment systems, particularly through his work with EthSwitch and various IPS (Instant Payment Systems) projects. His efforts have been crucial in advancing financial inclusion and digitalisation in Ethiopia. Tsegaye's experience spans from the inception and UAT (User Acceptance Testing) stages of IPS projects to implementing key features like irrevocability and manual dispute resolution, which have significantly reduced failure rates in P2P systems. His exposure to IPS courses and scholarships has equipped him with valuable

	knowledge and practices that he has applied to various digital payment systems, including mobile banking, internet banking, and card-related projects. His work has also involved collaborating with multiple stakeholders, including banks, MFIs, SACOs, and telecom providers, to enhance financial access and inclusion for underserved communities. Through his role as CTO at Kacha, Tsegaye continues to drive innovations in digital lending, saving, and remittance systems, contributing to Ethiopia's broader financial inclusion and digital transformation goals.
How DFI contributed?	DFI played a pivotal role in providing the IIPS course, which significantly contributed to Tsegaye's professional development. Through a scholarship, Tsegaye gained extensive knowledge and exposure to various IPS principles, guidelines, and best practices. The course included diverse testimonials, test cases, and showcases from different regions and sectors, which enriched his understanding and ability to implement IPS projects effectively. This education enabled him to address challenges in digital payment systems, such as reducing failure rates and implementing dispute resolution mechanisms, ultimately enhancing the efficiency and reliability of payment systems at EthSwitch and beyond.
So what? (Significance)	Tsegaye's work on inclusive payment systems, particularly through his involvement with EthSwitch and the implementation of Instant Payment Systems (IPS), highlights the significant strides being made towards financial inclusion and digitalisation in Ethiopia. By integrating principles of IPS, such as irrevocability and manual dispute resolution, Tsegaye and his team have managed to reduce legacy P2P failure rates to below 1%, showcasing the effectiveness of these systems. His efforts in digital lending, saving, and remittance projects, along with collaborations with various financial institutions and stakeholders, underscore the transformative impact of these initiatives on underserved communities. The standardisation and interoperability of QR payments further enhance the user experience, making financial transactions more accessible and efficient. Overall, Tsegaye's contributions are pivotal in advancing Ethiopia's financial inclusion strategy and digital transformation goals, ensuring that even the most remote and underserved populations can benefit from modern financial services.

Name	**Getnet Shimels Tafese**
Position	Tech industry Professional/ Tech Head
Organisation	3BLTech
Country	Ethiopia
Professional Experience	12 years of experience in the Tech industry
What? (Contribution)	Getnet has made significant contributions to the tech industry, particularly in IT project management, with over 12 years of experience. Currently, he works as a consultant for a software development company, managing the development of

	various applications. His expertise spans multiple sectors, including education, manufacturing, and finance. Notably, he has been involved in IT infrastructure and core banking deployment projects in the microfinance sector. Presently, he is engaged in digital payment system projects, focusing on business assessment and IT infrastructure. His work aims to enhance financial inclusivity and digital finance innovation through mobile banking, blockchain integration, and USSD services, particularly targeting rural populations.
How DFI contributed?	DFI played significantly contributed to Getnet's professional development by providing the Instant Inclusive Payment System (IIPS) course. This course offered him a comprehensive understanding of the IPS framework, which he previously only knew in theory. The course equipped him with practical insights into how IPS operates within different country contexts, enhancing his ability to navigate and implement IPS projects effectively. It also provided him with a clear roadmap and a better grasp of the governance and operational aspects of IPS, enabling him to make informed decisions and propose innovative solutions in his projects. The knowledge gained from the IIPS course has been instrumental in his role, particularly in understanding the integration of various technologies and the collaboration with stakeholders to advance financial inclusion and digital finance initiatives.
So what? (Significance)	Getnet Shimels' extensive experience in IT project management and his current role in developing digital payment systems highlight the critical importance of integrating technology with financial services to enhance financial inclusion. His work on projects involving mobile banking, USSD services, and blockchain technology demonstrates a commitment to making financial services accessible to underserved populations, particularly in rural areas. By leveraging innovative technologies and forming strategic partnerships with donor organisations and banks, these initiatives aim to bridge the gap in financial services, fostering economic growth and stability. This approach not only addresses immediate financial needs but also contributes to the broader goals of digital transformation and financial inclusivity in Ethiopia.

Name	**Yemisirach Taye Feleke**
Position	Fintech company Professional/ Sales Development Lead
Organisation	Arif-Pay
Country	Ethiopia
Professional Experience	10 years of experience in the Fintech company
What? (Contribution)	Yemisirach has made significant contributions to the financial sector in Ethiopia, particularly in the realm of digital financial services. With nearly a decade of experience, she has specialised in mobile money and point of sale use cases. Recently, she transitioned to a fintech company where she has been instrumental

	in implementing QR payment systems as per the National Bank's requirements. Her work involves onboarding merchants, training them, deploying QR codes, and assessing market reception. Yemisirach's efforts have been crucial in driving the adoption of digital payments, enhancing the seamless payment experience for both merchants and clients, and fostering collaboration among stakeholders to innovate and improve the digital payment landscape in Ethiopia.
How DFI contributed?	DFI played a pivotal role in Yemisirach's professional development by providing the Instant and Inclusive Payment Systems (IIPS) course. This course equipped Yemisirach with essential knowledge and skills, enabling her to understand the intricacies of IIPS, including its deployment and impact on digital payments and financial inclusion. The comprehensive course materials, discussions with peers, and practical exercises helped Yemisirach grasp the concepts and challenges associated with IIPS. This preparation allowed her to contribute effectively to her company's projects, particularly in implementing QR payment systems and fostering financial innovation in Ethiopia. The DFI course has thus been instrumental in shaping Yemisirach's expertise and enhancing her ability to drive digital transformation in the financial sector.
So what? (Significance)	Yemisirach's extensive experience in the financial sector, particularly in mobile money and digital financial services, underscores her deep understanding of Ethiopia's evolving payment landscape. Her recent involvement in implementing QR payment systems highlights the significance of her work in driving digital payment innovation. By actively participating in the QR, IPS scheme, Yemi is contributing to the transformation of payment processes from P2P to C2B (customer-to-business), enhancing the efficiency and inclusivity of digital transactions. Her efforts in onboarding merchants, training, and market assessment are crucial in ensuring the successful adoption of these new payment methods. This work not only supports financial innovation but also fosters collaboration among key stakeholders, including the National bank of Ethiopia and EthSwitch, to create a more integrated and effective digital payment ecosystem in Ethiopia.

Name	**Daniel Yohannes**
Position	Consultant
Organisation	eMcREY
Professional Experience	14 years in banking, including 10 years in digital banking
Specialisation	Digital payments, fintech integration, and mobile banking
Country	Saudi
Notable Projects	Work on TIPS in Tanzania and QR-based integration projects in Ethiopia

What? (Contribution)	Designed systems ensuring interoperability and financial inclusion. Developed interoperable QR code solutions for mobile wallets and banking. Focused on wallet-based payment systems to include unbanked populations. Transitioned physical cards to digital tokens for enhanced payment security. Proposed innovative applications for mobile wallets in various sectors, such as parking and restaurants.
How DFI contributed?	The IIPS training provided comprehensive insights into designing, implementing, and managing instant payment systems. It emphasised interoperability, inclusivity, and advanced digital payment strategies. The course facilitated a deeper understanding of use case development, regulatory compliance, and stakeholder collaboration, enabling Daniel to apply these principles effectively in his projects.
So what? (Significance)	Promoted financial inclusion and digital transformation in Ethiopia and Tanzania. Reduced transaction processing times through instant payment systems. Introduced advanced digital solutions, such as interoperable QR codes, fostering innovation. Enabled seamless payment options for rural and urban populations through wallet integration. Strengthened cooperation between banks, fintech companies, and regulators.

Name	**Tsedale G/Egziabher**
Position	Director of Business Analysis and Digital Transformation
Organisation	EthSwitch
Professional Experience	10+ years of experience leading major Project and initiatives at the national level
Country	Ethiopia
What? (Contribution)	Led the development and implementation of Ethiopia's first Instant Interoperable Payment System (IPS), overseeing key features such as account verification, push payments, and real-time settlement. Facilitated seamless interoperability between financial institutions, promoted collaboration among stakeholders, and organised capacity-building workshops to enhance system adoption and usage.
How DFI contributed?	The training equipped Tsedale with methodologies for phased implementation, stakeholder engagement, and regulatory alignment. Lessons from the course helped refine the soft go-live approach and manage cross-functional collaboration effectively.
So what? (Significance)	Enhanced financial inclusion by enabling real-time, low-cost digital payments. Reduced reliance on expensive physical payment instruments like ATMs and POS terminals. Strengthened Ethiopia's digital transformation agenda and set a precedent for similar projects in Africa.

Name	Henok Seyoum
Position	Manager, Digital Banking Development
Organisation	Siinqee Bank
Professional Experience	Over 10 years of experience in Digital and e-banking services
Country	Ethiopia
What? (Contribution)	Promoted digital micro-lending services by fostering collaborations between financial institutions. Tackled operational, compliance, and credit risks through the development of standardised frameworks. Advocated for digital literacy initiatives to enhance loan repayment rates and drive sustainable growth in the sector.
How DFI contributed?	The course underscored the importance of interoperability and stakeholder collaboration. Henok applied these principles to negotiate mutual benefits among diverse financial institutions and develop risk mitigation strategies.
So what? (Significance)	Improved access to credit for underserved populations. Strengthened trust in digital lending systems. Contributed to a secure, interoperable financial ecosystem that fosters economic growth.

Name	Elmodad Elias
Position	Clearing and Settlement Division Manager
Organisation	Premier Switch Solution
Professional Experience	15+ years in the banking industry
Country	Ethiopia
What? (Contribution)	Played a key role in designing and implementing secure, efficient clearing and settlement frameworks for instant payment systems. Enhanced collaboration between financial institutions to improve system reliability and promoted the adoption of standardised processes across member institutions.
How DFI contributed?	The training provided Elmodad with in-depth knowledge of instant payment systems and clearing processes. It enabled him to align his projects with best practices in financial technology and regulatory compliance.
So what? (Significance)	Enhanced the efficiency and transparency of payment systems, reducing processing times and costs. Strengthened trust and collaboration among financial institutions. Contributed to the growth of a robust financial infrastructure in the region.

Name	Yoseph Endale
Position	Director, Marketing Department
Organisation	EthSwitch
Professional Experience	Over 20 years of experience in business development and marketing within the financial sector.
Country	Ethiopia
What? (Contribution)	Spearheaded marketing campaigns for EthSwitch's national payment initiatives and product branding. Developed strategies to boost awareness and adoption of EthSwitch's services, focusing on financial inclusion through digital payment systems. Increased user engagement by highlighting the advantages of interoperability and instant payments.
How DFI contributed?	The training offered Yoseph a clear understanding of the technical aspects of payment systems, enabling him to craft effective marketing messages. It also provided insights into customer behavior and digital transformation strategies.
So what? (Significance)	Increased public trust and adoption of EthSwitch's services. Strengthened the position of EthSwitch as a leader in national digital payment solutions. Played a key role in advancing financial inclusion and digital literacy in Ethiopia.

2. List of Interviewees and Interview Handout

Tier	Name	Position	Organisation	Gender
3	Amensisa Korie	Chief Digital Transformation and Product Officer	Digaf Microfinance S.Co	Male
3	Tesfaye Admassie	Manager, Quality Assurance and Technical Support in Contact Center Department	Bank of Abyssinia	Male
1	Martha Hailemariam	Advisor to Vice Governor, Financial Institutions Supervision	National Bank of Ethiopia	Female
1	Beza Mamo	Director Payment Application	Ethswitch	Male
3	Elias Girma	Manager, Digital Channels	Hijra Bank S.C	Male
3	Getnet Shimels Tafese	Tech Head	3BLTech	Male
3	Dagem Kasahun	Shared Service Officer 2	Ethswitch	Male
1	Tsegaye Tamiru	CTO	Kacha DFS	Male
1	Yoseph Endale	Director Marketing Department	EthSwitch	Male
1	Henok Seyoum	Manager	Bank	Male
1	Tsedale Gebreegziabher Woldegiorgis	Director, Business Analysis and Digital Transformation	EthSwitch S.C.	Female
2	Yemisirach Taye Feleke	Sales Development Lead	Arifpay	Female

1	Daniel Yohannes Fanta	Senior Consultant	Consultant DFI	Male
1	Elmodad Elias	Manager, Clearing and Settlement	Premier Switch Solutions S.C	Male

3. Interview Guide: Exploring IIPS-Related Projects

Thank you for agreeing to participate in this interview. The goal of this discussion is to gain deeper insights into your work on Instant Inclusive Payment Systems (IIPS)-related projects and explore how your experience with the IIPS courses has influenced your professional journey. This interview builds on the responses you provided in the survey, focusing on project-specific details and your professional insights. The interview will take approximately 30–40 minutes. Your responses will remain confidential and will be used solely for the purpose of this case study.

Section 1: Project Details

1. Could you provide more detailed insights into the specific IIPS-related projects you are currently working on?
2. Could you elaborate in more detail on the primary focus or objective of these projects (e.g., financial inclusion, digital finance innovation, policy reform)?
3. Could you elaborate on the innovative approaches, technologies, or strategies you have implemented in these projects? (If applicable)

Section 2: Partnerships and Collaboration

4. What types of partnerships (e.g., government, private sector, NGOs) have been crucial to the success of your projects?
5. How do these collaborations enhance the effectiveness or scalability of your initiatives?

Section 3: Challenges and Solutions

6. Have you encountered any significant challenges in your IIPS-related work? If so, how have you addressed them?
7. Are there any gaps in resources, tools, or support that have limited your project's success?

Section 4: Impact Assessment

8. Can you share any measurable outcomes or preliminary impacts of your IIPS projects on your target audience or stakeholders?
9. How do you see these projects contributing to broader goals, such as financial inclusion or digital transformation, in your organisation, region or country?

Section 5: Reflections

10. In your opinion, what are the key opportunities for advancing IIPS in your organisation, region or country?
11. Could you elaborate on how the IIPS courses you completed have supported you in developing these IIPS-related initiatives, projects, or policies?
12. Is there anything you would recommend to improve the relevance or impact of the IIPS courses for professionals like you?

4. List of Acronyms

A2A	Account to Account
A2W	Account to Wallett
AEDFP	Association of Ethiopian Digital Finance Practitioners
ACH	Automated Clearing House
ATMs	Automated Teller Machines
BDS	Business Develop Services
CBE	Commercial Bank of Ethiopia
CBS	Core Banking System
CDFP	Certified Digital Finance Practitioner
CoP	Community of Practice
DFI	Digital Frontiers Institute
DFS	Digital Financial Services
DFSP	Digital Financial Services Providers
ETB	Ethiopian birr
EATS	Ethiopian Automated Transfer System
FSP	Financial Service Providers
GDP	Gross Domestic Product
IGAD	Intergovernmental Authority on Development
IIPS	Inclusive instant payment systems
IPS	Instant Payment System
ITU	International Telecommunication Union
KYC	Know Your Customer
MESMER	Medium Enterprise Recovery and Resilience
MMA	Mobile Money Account
M&E	Monitoring and Evaluation
MFIs	Microfinance institutions
MOTI	Ministry of Trade and Industry
NBE	National Bank of Ethiopia
NDPS	National Digital Payment Strategy
NFIS-II	National Financial Inclusion Strategy-II (2021-2025)
NPG	National Payment Gateway
NPS	National Payment System
ONPS	Oversight of the National Payment System

SME	Small and Medium Enterprises
P2M	Person to Merchant
PII	Payment Issuer Instrument
PoS	Point of Sale
P2P	Person-to-Person
P2M	Person-to-Merchant
PSO	Payment System Operator
QR	Quick Response
RBM	Results-Based Management
RTPS	Real-Time Payment Systems
RTGS	Real-Time Gross Settlement
SACCOs	Savings and Credit Cooperatives
SIIPS	State of Inclusive Instant Payment System
W2A	Wallet to Account
W2W	Wallet to Wallet

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6. DFI Ethiopia Alumni 2016-2024 Demographics

DFI Alumni across all programmes: CDFP, IIPS, DFIS, GEC 2016-2024

Country	Gender	Total Enrolled	% of Total Enrolled	Total Participants	% of Total Participants	Unique Participants	% of Unique Participants	Total Passed	% of Total Passed
Ethiopia	Female	626	23.5%	366	21.8%	149	25.4%	296	22.0%
	Male	2,026	76.0%	1,305	77.7%	436	74.4%	1,039	77.3%
	Rather not say and Unknown	15	0.6%	9	0.5%	1	0.2%	9	0.7%
	Total	**2,667**	**100.0%**	**1,680**	**100.0%**	**586**	**100.0%**	**1,344**	**100.0%**

DFI IIPS Alumni 2016-2024

Country	Gender	Total Enrolled	% of Total Enrolled	Total Participants	% of Total Participants	Unique Participants	% of Unique Participants	Total Passed	% of Total Passed
Ethiopia	Female	125	20.2%	110	19.6%	59	20.8%	82	20.2%
	Male	495	79.8%	451	80.4%	224	79.2%	324	79.8%
	Total	**620**	**100.0%**	**561**	**100.0%**	**283**	**100.0%**	**406**	**100.0%**

DFI all Programme Alumni by Sector and Seniority

Country	Sector	Seniority	Total Enrolled	% of Total Enrolled	Total Participants	% of Total Participants	Unique Participants	% of Unique Participants	Total Passed	% of Total Passed	All	Known
Ethiopia	Development	Executive	56	19.3%	29	15.8%	3	5.7%	24	15.4%		
		Senior Professional or Consultant	119	41.0%	90	48.9%	21	39.6%	79	50.7%		
		Middle Management	74	25.5%	44	23.9%	17	32.1%	36	23.1%		
		Junior	33	11.4%	17	9.2%	8	15.1%	13	8.3%		
		Unknown	8	2.8%	4	2.2%	4	7.5%	4	2.6%		
		Total	290	100%	184	100%	53	100%	156	100%	11%	13%
	Private	Executive	184	13.3%	121	13.0%	33	12.5%	92	12.3%		
		Senior Professional	469	33.9%	329	35.5%	89	33.6%	260	34.7%		
		Middle Management	431	31.2%	305	32.9%	85	32.1%	259	34.5%		
		Junior	267	19.3%	158	17.0%	53	20.0%	126	16.8%		
		Unknown	30	2.2%	15	1.6%	5	1.9%	13	1.7%		
		Total	1,381	100%	928	100%	265	100%	750	100%	52%	62%
	Public	Executive	31	5.6%	22	6.5%	4	3.2%	14	5.3%		
		Senior Professional or Consultant	228	41.2%	141	41.8%	50	39.7%	114	43.3%		
		Middle Management	214	38.6%	114	33.8%	45	35.7%	84	31.9%		
		Junior	76	13.7%	57	16.9%	25	19.8%	48	18.3%		
		Unknown	6	1.1%	3	0.9%	2	1.6%	3	1.1%		
		Total	555	100%	337	100%	126	100%	263	100%	21%	25%
	Unknown	Executive	3	0.7%	3	1.3%	1	0.7%	3	1.7%		
		Senior Professional	6	1.3%	6	2.6%	6	4.2%	4	2.3%		
		Middle Management	11	2.5%	10	4.3%	8	5.6%	7	4.0%		
		Junior	23	5.2%	18	7.8%	10	7.0%	15	8.6%		
		Unknown	398	90.2%	194	84.0%	117	82.4%	146	83.4%		
		Total	441	100%	231	100%	142	100%	175	100%	17%	0%
	Total		2,667	100.0%	1,680	100.0%	586	100.0%	1,344	100.0%	100%	100%

DFI IIPS Alumni by Sector and Seniority

Country	Sector	Seniority	Total Enrolled	% of Total Enrolled	Total Participants	% of Total Participants	Unique Participants	% of Unique Participants	Total Passed	% of Total Passed	All	Known
Ethiopia	Development	Executive	7	14.9%	7	15.6%	1	6.7%	6	15.8%		
		Senior Professional or Consultant	20	42.5%	19	42.2%	6	40.1%	17	44.7%		
		Middle Management	14	29.8%	13	28.9%	5	33.3%	10	26.3%		
		Junior	6	12.8%	6	13.3%	3	20.0%	5	13.2%		
		Total	47	100%	45	100%	15	100%	38	100%	8%	9%
	Private	Executive	58	15.2%	50	14.4%	20	13.0%	33	13.3%		
		Senior Professional	125	32.8%	112	32.3%	47	30.5%	80	32.1%		
		Middle Management	133	34.8%	124	35.7%	56	36.4%	93	37.3%		
		Junior	66	17.3%	61	17.6%	31	20.1%	43	17.3%		
		Total	382	100%	347	100%	154	100%	249	100%	62%	70%
	Public	Executive	7	6.8%	7	8.0%	1	2.6%	5	8.2%		
		Senior Professional	33	32.0%	28	31.7%	13	33.4%	19	31.1%		
		Middle Management	33	32.0%	26	29.5%	12	30.8%	17	27.9%		
		Junior	30	29.1%	27	30.7%	13	33.3%	20	32.8%		
		Total	103	100%	88	100%	39	100%	61	100%	17%	19%
	Unknown	Junior	4	4.5%	4	4.9%	3	4.0%	3	5.2%		
		Middle Management	4	4.5%	3	3.7%	3	4.0%	0	0.0%		
		Senior	2	2.3%	2	2.5%	2	2.7%	1	1.7%		
		Unknown	78	88.6%	72	88.9%	67	89.3%	54	93.1%		
		Total	88	100%	81	100%	75	100%	58	100%	14%	16%
	Total		620	100.0%	561	100.0%	283	100.0%	406	100.0%		

DFI all Programme Alumni by Sector and Gender

Country	Sector	Gender	Total Enrolled	% of Total Enrolled	Total Participants	% of Total Participants	Unique Participants	% of Unique Participants	Total Passed	% of Total Passed	All	Known
Ethiopia	Development	Female	69	23.8%	36	19.6%	19	35.8%	28	17.9%		
		Male	221	76.2%	148	80.4%	34	64.2%	128	82.1%		
		Total	290	100%	184	100%	53	100%	156	100%	11%	11%
	Private	Female	286	20.7%	178	19.2%	56	21.1%	144	19.2%		
		Male	1,085	78.6%	741	79.8%	208	78.5%	597	79.6%		
		Rather not say	10	0.7%	9	1.0%	1	0.4%	9	1.2%		
		Total	1,381	100%	928	100%	265	100%	750	100%	52%	52%
	Public	Female	130	23.4%	82	24.3%	33	26.2%	68	25.9%		
		Male	425	76.6%	255	75.7%	93	73.8%	195	74.1%		
		Total	555	100%	337	100%	126	100%	263	100%	21%	21%
	Unknown	Female	141	32.0%	70	30.3%	41	28.9%	56	32.0%		
		Male	295	66.9%	161	69.7%	101	71.1%	119	68.0%		
		Rather not say & unknown	5	1.2%	0	0.0%	0	0.0%	0	0.0%		
		Total	441	1	231	1	142	1	175	1	17%	17%
	Total		2,667	100.0%	1,680	100.0%	586	100.0%	1,344	100.0%		

DFI IIPS Programme Alumni by Sector and Gender

Country	Sector	Gender	Total Enrolled	% of Total Enrolled	Total Participants	% of Total Participants	Unique Participants	% of Unique Participants	Total Passed	% of Total Passed	All
Ethiopia	Development	Female	4	8.5%	4	8.9%	2	13.3%	3	7.9%	
		Male	43	91.5%	41	91.1%	13	86.7%	35	92.1%	
		Total	47	100%	45	100%	15	100%	38	100%	8%
	Private	Female	78	20.4%	69	19.9%	32	20.8%	50	20.1%	
		Male	304	79.6%	278	80.1%	122	79.2%	199	79.9%	
		Total	382	100%	347	100%	154	100%	249	100%	62%
	Public	Female	25	24.3%	21	23.9%	10	25.6%	16	26.2%	
		Male	78	75.7%	67	76.1%	29	74.4%	45	73.8%	
		Total	103	100%	88	100%	39	100%	61	100%	17%
	Unknown	Female	18	20.5%	16	19.8%	15	20.0%	13	22.4%	
		Male	70	79.5%	65	80.2%	60	80.0%	45	77.6%	
		Total	88	100%	81	100%	75	100%	58	100%	14%
	Total		620	100.0%	561	100.0%	283	100.0%	406	100.0%	

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