

Digital identity and social cash transfers

December 2019

Copyright © 2019 GSM Association



The GSMA represents the interests of mobile operators worldwide, uniting more than 750 operators with almost 400 companies in the broader mobile ecosystem, including handset and device makers, software companies, equipment providers and internet companies, as well as organisations in adjacent industry sectors. The GSMA also produces the industry-leading MWC events held annually in **Barcelona**, **Los Angeles** and **Shanghai**, as well as the **Mobile 360 Series** of regional conferences.

For more information, please visit the GSMA corporate website at **www.gsma.com**

Follow the GSMA on Twitter: **@GSMA**

Digital Identity

The GSMA Digital Identity Programme is uniquely positioned to play a key role in advocating and raising awareness of the opportunity of mobile-enabled digital identity and life-enhancing services. Our programme works with mobile operators, governments and the development community to demonstrate the opportunities, address the barriers and highlight the value of mobile as an enabler of digital identification.

For more information, please visit the GSMA Digital Identity website at **www.gsma.com/digitalidentity**

Follow GSMA Mobile for Development on Twitter: **@GSMAm4d**



This document is an output of a project funded by UK aid from the Department for International Development (DFID), for the benefit of developing countries. The views expressed are not necessarily those of DFID.

Authors:
Matt Wilson, Senior Insights Manager, GSMA
Samantha Lynch, Senior Knowledge Manager, GSMA

Contents

Introduction 2

Digital identification and mobile 6

Selection and enrolment of beneficiaries 8

Verifying beneficiary identities 14

Looking forward 20



Introduction

Over the last three decades the percentage of the world's population living in extreme poverty has fallen drastically, from 36 per cent in 1990 to 8.6 per cent in 2018.[1] However, this progress has been uneven: one out of every five children lives in extreme poverty, as do 17 per cent of those living in rural areas – a rate that's three times higher than urban dwellers.[2] Furthermore, in 2015 more than 50 per cent of the people living in extreme poverty were located in Sub-Saharan Africa, and the World Bank estimates this will increase to nearly 90 per cent by 2030.[3]

Poverty is complex and multidimensional, but is often caused or exacerbated by a lack of education or employment opportunities, social exclusion, poor health, natural disasters, conflict or other personal vulnerabilities. These, in turn, prevent individuals from accessing good schools, regular meals, quality health care, electricity, safe water and other critical services. 'Moreover,' says the World Bank,[4] 'for those who have been able to move out of poverty, progress is often temporary: economic shocks, food insecurity and climate change threaten to rob them of their hard-won gains and force them back into poverty'.

Ending poverty in all of its forms is the first of the UN's Sustainable Development Goals (SDGs), which also sets specific targets to implement nationally-appropriate social protection systems and measures for all, and to achieve substantial social protection coverage among the poor and the vulnerable by 2030. Today, however, 55 per cent of the world's population has no access to any form of social protection.[5] Rates of exclusion are highest in the African and Asia Pacific regions, where 82 per cent and 61 per cent of the population, respectively, do not have access to social protection (*see Figure 1*).

1. ODI (2018) 'New projections show extreme poverty is falling – but not fast enough'
2. https://www.un.org/sustainabledevelopment/poverty/
3. https://www.worldbank.org/en/news/video/2018/10/17/new-ways-of-looking-at-poverty
4. https://www.worldbank.org/en/topic/poverty/overview
5. https://www.un.org/sustainabledevelopment/wp-content/uploads/2016/08/1.pdf



Broadly speaking, social protection systems are designed to help individuals or households cope with financial crises and shocks, find jobs, improve productivity, invest in the health and education of their children, and be cared for in old age.[6] Social benefit payments – which are commonly referred to as social cash transfers – are one component of social protection systems, and are used to provide regular and predictable financial support to the poor and vulnerable. Other common types of social safety net programmes include school feeding programmes, in-kind transfers, public works and fee waivers.

In 2015 every country in the world had at least one social protection programme in place, and the average developing country had about 20 programmes.[7] The World Bank's ASPIRE database,[8] which collates data from 142 countries on social assistance, social insurance and labour market programmes, finds that 37 per cent of the global population benefitting from social safety net programmes in 2015 received cash-based transfers. That year, 40 (out of 48) African countries had unconditional cash transfer programmes in place, and 12 countries in the region had introduced conditional cash transfer programmes.[9] Many countries are rapidly expanding the coverage of their flagship social safety net programmes: in Tanzania, the Productive Safety Net Program expanded from covering two per cent to 10 per cent of the population between 2014 and 2016, and in Senegal the National Cash Transfer Program expanded from three per cent to 16 per cent of the population in four years.[10]

6. https://www.worldbank.org/en/topic/socialprotection/overview
7. World Bank (2015) 'The State of Social Safety Nets 2015'
8. http://datatopics.worldbank.org/aspire/home. As of November of 2017, the ASPIRE database included administrative spending data for 124 developing and transition countries and economies, and administrative data on the number of beneficiaries of the largest programs for 142 countries.
9. Conditional cash transfer programmes provide money, typically to poor households, on the condition that they fulfil specific behavioural conditions, such as making regular visits to a health facility, receiving vaccinations, or ensuring their children attend school.
10. World Bank (2018) 'The State of Social Safety Nets 2018'



In 2018 social cash transfer programmes accounted for over half of all social protection spending worldwide.[11] They are increasingly considered to be one of the most cost-effective and adaptable components of social protection systems, have been found to contribute positively to local economies, and (in the case of unconditional cash transfers) provide beneficiaries with greater autonomy over how to utilise the financial support they receive.[12] According to the World Bank's 2018 report on The State of Social Safety Nets, household survey data shows that approximately 36 per cent of households receiving social cash transfers were able to escape absolute poverty.[13]

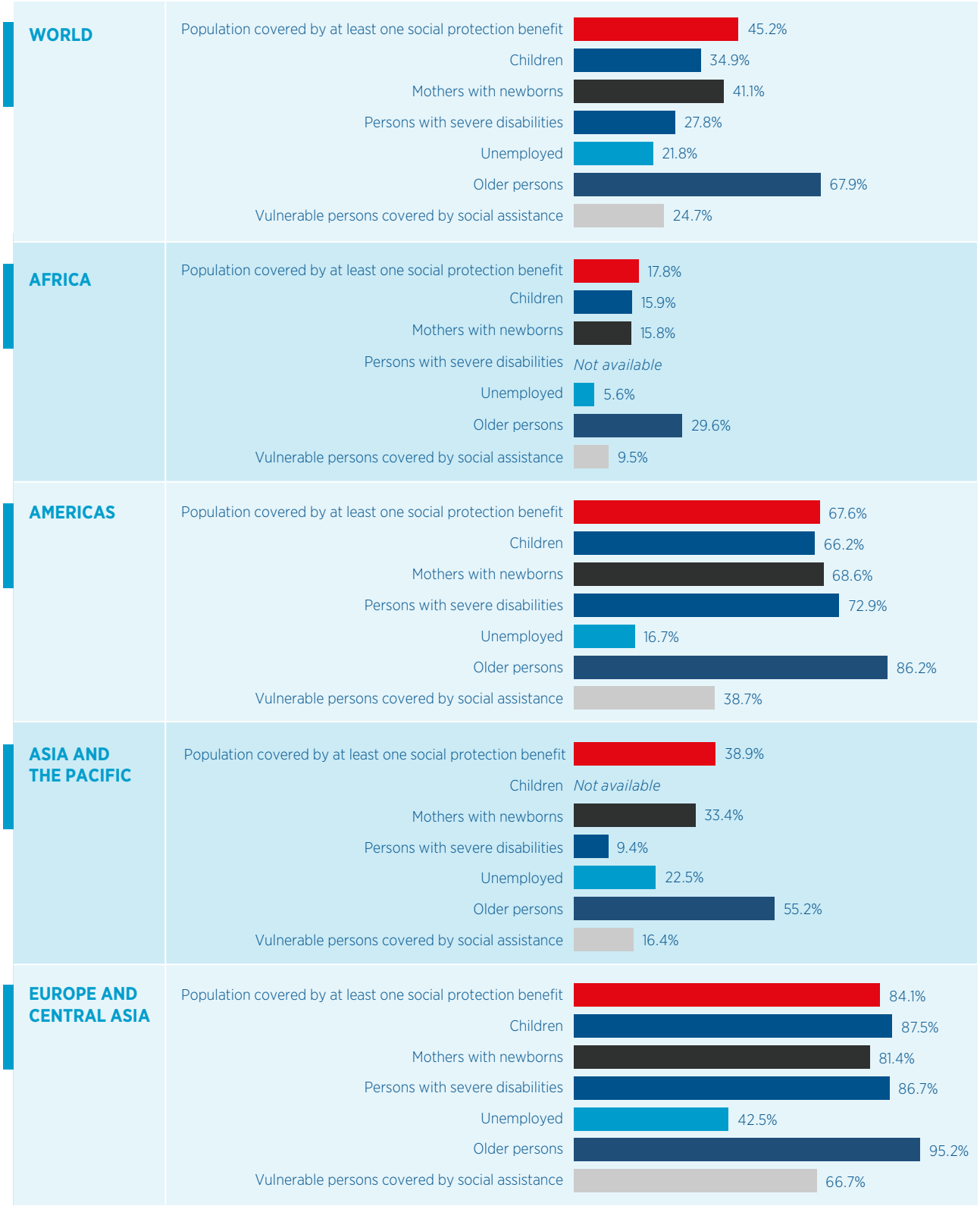
The targeting of social protection is generally pro-poor, and conditional cash transfers are found to be the best-targeted programmes – in some cases devoting as much as 50 per cent of benefits to the poorest quintile of the population.[14] However, ASPIRE data also underscores that low-income countries are the least able to direct resources to those who need them most: only one-tenth of the poorest quintile in Sub-Saharan Africa and one-fifth of the poorest quintile in Asia have access to social safety nets.[15] Often, the poorest segments of society are excluded from these programmes because of challenges related to enroling, identifying and communicating with beneficiaries.

11. World Bank (2018) 'The State of Social Safety Nets 2018'
12. Overseas Development Institute (2018) 'The Political Economy of Cash Transfer Programmes in Brazil, Pakistan and the Philippines'
13. World Bank (2018) 'The State of Social Safety Nets 2018'
14. World Bank (2015) 'Social Safety Nets Expand in Developing Countries, But Majority of the Poorest Still Lack Coverage'
15. World Bank (2018) 'The State of Social Safety Nets 2018'

Figure 1

Source: ILO World Social Protection Report, 2017-19[16]

Percentage of population covered by at least one social protection benefit, global and regional estimates by population group



16. International Labour Office (2017) 'World Social Protection Report 2017–19: Universal social protection to achieve the Sustainable Development Goals'



Digital identification and mobile

The efficient implementation of social protection systems – and particularly social cash transfers – requires new digital tools that facilitate the efficient selection and enrolment of beneficiaries and the targeted and transparent delivery of funds. Effective methods of verifying beneficiary identities are essential to these processes; however, several issues are likely to hinder this.

In many developing countries access to official forms of identification – such as birth certificates or national identity documents – remains low, particularly among the poorest, oldest and most remote segments of society. Data from the World Bank's Identity for Development (ID4D) programme shows that one billion people worldwide currently lack an official proof of identity, with almost half of the world's unregistered population living in Sub-Saharan Africa.[17] Furthermore, as of December 2018, an estimated 150 governments impose proof of identity requirements on individuals wishing to use mobile services – a policy that requires mobile operators to check and record their customers' identity documents before selling or activating their SIM card. GSMA estimates that 456 million people across the 90 countries where mobile money services are available still face a risk of financial exclusion due to their inability to meet the Know Your Customer (KYC) requirements for opening mobile money accounts in their own names.[18] Therefore, in places where ownership of official identity is not widespread, social cash transfer programmes are likely to face challenges determining which members of society are most in need of assistance, and will also be less able to deliver cash through digital channels.

In addition to this, many social cash transfer programmes require beneficiaries to validate their identity in-person, often at multiple stages in the cash disbursement process. These processes are typically more expensive and less efficient than remote, digital methods of identity verification – for

17. See: ID4D 2018 Dataset
18. GSMA (2019) 'Access to Mobile Services and Proof of Identity'



both the beneficiary and the organisation delivering the cash transfer. On the other hand, when cash transfer programmes become digitised, it can be more difficult for organisations to accurately confirm whether the intended beneficiary has actually utilised the cash – for instance, if funds delivered to a young woman's bank account or mobile money wallet will ultimately be used by her or another family member. Considering these challenges, it is no surprise that a recent report from McKinsey advocates that digital approaches to identification will enable individuals to unlock greater value and benefit as they interact with government and other organisations, and could help save about 110 billion hours through streamlined e-government services, including social protection and direct benefit transfers.[19]

Governments and other organisations delivering social cash transfers are recognising the benefits of digital identification at the same time the number of unique mobile subscribers (globally) has surpassed the five billion mark.[20] As a result, the transformative potential of mobile technology has been identified as a key opportunity to accelerate the scale and reach of inclusive digital identity systems that empower citizens, protect privacy and stimulate economic and social development. No other technology has the reach, capability and integration in daily life to offer a solution to this global challenge and provide public and private sector entities with efficient ways to reach the most underserved.

In this case study, we highlight two opportunities for mobile-enabled identification services to benefit social cash transfer programmes: by facilitating the selection and enrolment of beneficiaries, and by validating beneficiary identities before and after cash disbursement.

19. McKinsey (2019) 'Digital identification: A key to inclusive growth'
20. The Mobile Economy: Sub-Saharan Africa 2019, GSMA (2019)



Selection and enrolment of beneficiaries

The management of social protection systems are supported by social registries, which provide a record of all individuals or households that are potentially eligible for social benefits. As *information systems*, registries fulfil a vital operational role by ensuring that programme administrators collect relevant information and documentation from potential beneficiaries, enter and manage individual or household information in a systematic way, and cross-check or update information for consistency and accuracy.[21] As *inclusion systems*, they help ensure that potential beneficiaries are aware of when and where they can register for potential inclusion, the information and documentation they will need to provide, and when they will be notified of eligibility and enrolment decisions.[22]

21. World Bank (2017) 'Social Registries for Social Assistance and Beyond: A Guidance Note & Assessment Tool'
22. World Bank (2017) 'Social Registries for Social Assistance and Beyond: A Guidance Note & Assessment Tool'



Investment in social registries has grown considerably in recent years – as of 2015, social registries were present or being created in at least 47 countries, including 30 in low- and lower-middle-income countries.[23] Brazil's Cadastro Único database contains data for over 25 million families, and according to the ILO, 'has facilitated the development of in-depth knowledge about the poor population, greatly improving the ability of local and central governments to formulate and implement appropriate policies for the poor'.[24] The database has standardised the criteria and tools that all social protection programmes in Brazil use to select their beneficiaries, and provides a common delivery mechanism for cash disbursement.

In Rwanda, eligibility for most safety net programmes is based on a household's Ubudehe category score. Launched in 2001, the Ubudehe social register facilitates 'Participatory Poverty Assessment' by allowing local communities to analyse the poverty characteristics of their residents and determine which households are in most need of targeted support.[25] Periodic surveys are used to record the composition of each household and their identities (National Identity Numbers for everyone age 16 and above); a basic set of socioeconomic variables related to shelter, food, and occupation of household members; and the household's Ubudehe score. Scores of 1, 2, 3, or 4 correspond to four income and poverty categories, with the lowest scores the poorest and most vulnerable households, making targeting for safety nets fairer and more accurate. The Ubuhede and the National Population Registry are now being harmonised to improve their value and reinforce the overall identity ecosystem.[26]

23. World Bank (2015) 'The State of Social Safety Nets 2015'
24. ILO (2014) 'Cadastro Único - Operating a registry through a national public bank'
25. Fidèle, K. and Laminne de Bex, A. 'Innovation developed in Rwanda to support social protection interventions'
26. World Bank (2016) 'ID4D Country Diagnostic: Rwanda'

Table 1

Selected examples of social and beneficiary registries in operation or development

● **Operational social and beneficiary registries**

● **Social and beneficiary registries in development**

Country	Name	Number of people registered	Description
BRAZIL	Cadastro Unico	**67 million**	The Cadastro Único database covers more than one third of Brazil's population and supports 20 social protection programmes. It targets Brazil's vulnerable population, which is defined as families who earn $3 per day. The federal bank, Caixa, was chosen to operate the single registry due to its large network of agencies (including national lottery shops), its experience with managing large databases, and its ability to handle nearly 14 million monthly payments.[27]
CHILE	Registro Social de Hogares (RSH)	**12.4 million**	Over 80 social programmes are integrated into the overall social protection strategy through the RSH, which contains all information on the state's provisions to beneficiary households and coordinates across ministries and levels of government. A tailored software application (and using the national ID RUN number as a unique identifier) links RSH to many databases belonging to public entities through the internet, providing up-to-date information 72 per cent of Chile's population.[28]
INDONESIA	Basis Data Terpadu (BDT) (translated as Unified Database, UDB).	**93 million**	The BDT collects data through a census survey of households pre-identified as poor. It integrates data collection and eligibility determination across selected social assistance programmes and a community health insurance scheme, and is increasing integration with national ID database. The database now covers 93 million individuals located in 82,464 villages nationwide, making it one of the largest databases of its kind in the world.[29]
KENYA	Integrated Registry of Beneficiaries	**3.7 million**	The Single Registry enables the government of Kenya to link together the management information systems of its five major social protection schemes. The Single Registry – which offers a publicly available online version sharing aggregate data trends – acts as a single point of reference to give an overview of who is receiving, what type of assistance (and how much), where the assistance is received, and when the assistance is transferred.[30]
RWANDA	Ubudehe Social Register	**2.5 million**	Eligibility for most safety net programmes in Rwanda is based on a household's Ubudehe category score. Periodic social surveys, conducted at the village level, are used to publicly attribute to each household a score of 1, 2, 3, or 4 corresponding to the four income and poverty categories. This identifies the poorest and most vulnerable households that need income support, making targeting for safety nets fairer and more accurate.[31]

27. ILO (2014) 'Cadastro Único - Operating a registry through a national public bank'
28. DFAT (2017) 'Integrating Data and Information Management for Social Protection: Social Registries and Integrated Beneficiary Registries'
29. DFAT (2017) 'Integrating Data and Information Management for Social Protection: Social Registries and Integrated Beneficiary Registries'
30. DFAT (2017) 'Integrating Data and Information Management for Social Protection: Social Registries and Integrated Beneficiary Registries'
31. World Bank (2016) 'ID4D Country Diagnostic: Rwanda'

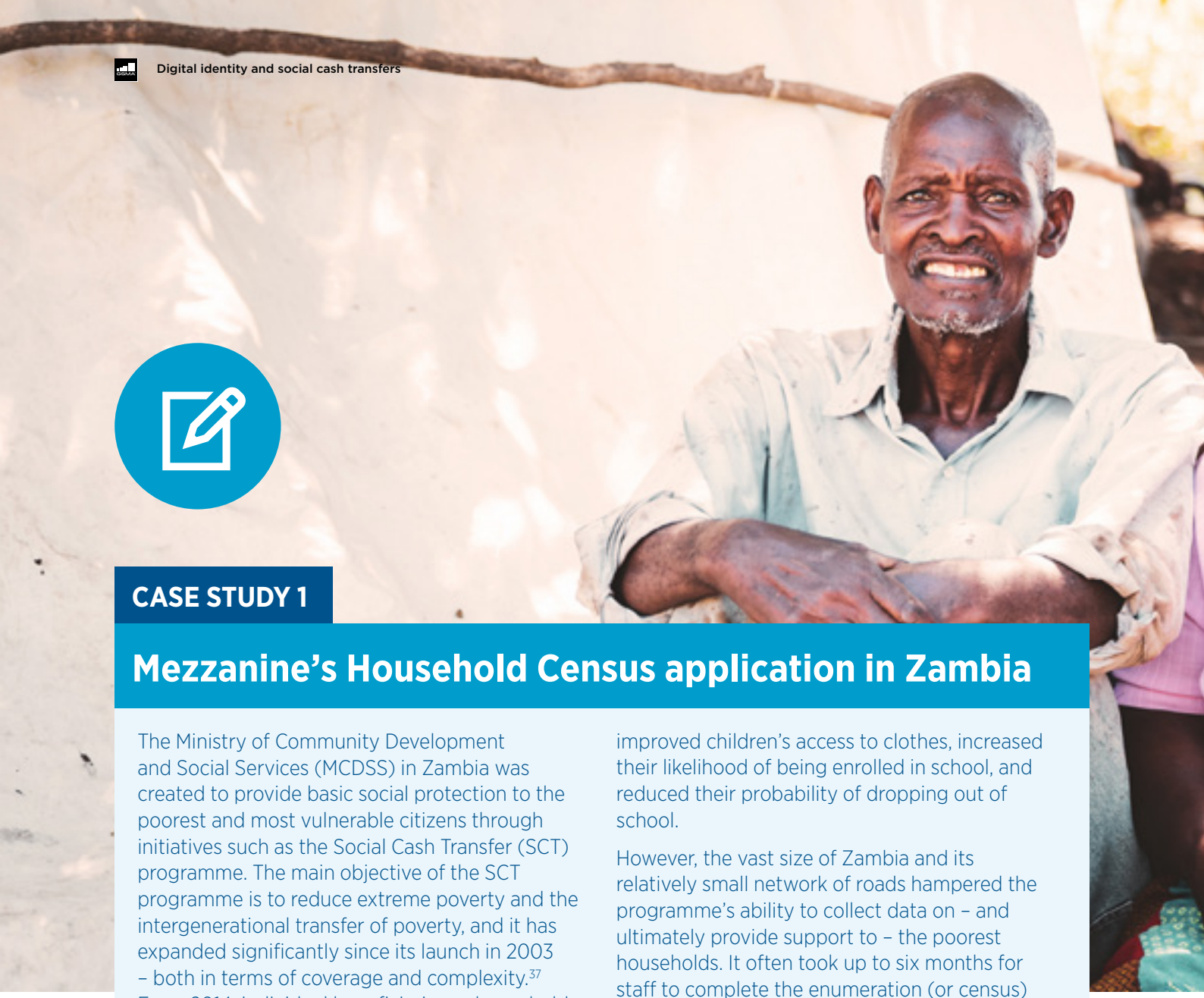
● **Operational social and beneficiary registries**

● **Social and beneficiary registries in development**

Country	Name	Number of people registered	Description
GHANA	Ghana National Household Registry (GNHR)		The GNHR was created to ensure that a larger share of social protection interventions foes to the extremely poor and vulnerable. It will provide a common targeting mechanism to help identify potential beneficiaries; facilitate the classification of potential beneficiary households for social programmes in an objective and equitable manner; and support inter-institutional coordination. Data collection is ongoing.[32]
MALAWI	Unified Beneficiary Registry (UBR)		The UBR provides a single source of information on households eligible for social support services. It is expected to strengthen the coordination of social support programmes and ease the challenges encountered in the targeting of beneficiaries, which have resulted in higher inclusion and exclusion errors in past interventions. The UBR is expected to facilitate processes for the registration of potential beneficiaries, as well as targeting and data-sharing mechanisms, among social support programme implementers to ensure that the right beneficiaries receive social support services at the right place and time.[33] Data collection is ongoing, and as of June 2019 has reportedly been completed in six of 16 districts.[34]
ZAMBIA	Single Registry of Beneficiaries		The integrated Registry of Beneficiaries links six key safety net programmes through a central database which records key information on all beneficiaries and the benefits received. The single registry provides more robust controls on eligibility determination and enrolment of beneficiaries (as well as the periodic updating of information on beneficiaries to ensure they remain eligible), and facilitates rapid identification of beneficiaries for programs that are scaling up or trying to create synergies with complementary interventions to enhance their impact.[35]

In order to comply with human rights standards and principles of non-discrimination, registries must be accessible to poor and vulnerable groups who are the most at risk of being excluded. According to the World Bank, social registries should be characterised by active search and outreach (including through mobile teams and community outreach); simple and user-friendly application procedures; and support to obtain necessary documentation and IDs.[36] With the rapid penetration of mobile devices and mobile coverage, mobile applications are increasingly being used for registering, cross-checking and assessing the eligibility of beneficiaries.

32. See: Ghana National Household Registry
33. See: About the UBR in Malawi
34. Nyasa Times, 12 June 2019. 'Ministry of finance introduces unified social beneficiary registry in Nsanje'. Accessed 10 Sep 2019.
35. See: World Bank project documents (2014)
36. World Bank (2017) 'Social Registries for Social Assistance and Beyond: A Guidance Note & Assessment Tool'



CASE STUDY 1

Mezzanine's Household Census application in Zambia

The Ministry of Community Development and Social Services (MCDSS) in Zambia was created to provide basic social protection to the poorest and most vulnerable citizens through initiatives such as the Social Cash Transfer (SCT) programme. The main objective of the SCT programme is to reduce extreme poverty and the intergenerational transfer of poverty, and it has expanded significantly since its launch in 2003 – both in terms of coverage and complexity.[37] From 2014, individual beneficiaries or households have been entitled to flat monthly payments of ZMW 70; however, due to logistical challenges with disbursement, these are paid bimonthly (amounting to ZMW 140 for each payment).[38]

Impact evaluations of the SCT programme have documented positive effects on household income, depth of poverty, food security, housing and living conditions. The programme has also improved children's access to clothes, increased their likelihood of being enrolled in school, and reduced their probability of dropping out of school.

However, the vast size of Zambia and its relatively small network of roads hampered the programme's ability to collect data on – and ultimately provide support to – the poorest households. It often took up to six months for staff to complete the enumeration (or census) exercise and make the complete set of data available to decision-makers. To address this issue, in 2017 the MCDSS began incorporating mobile technology into the SCT programme's registration and enumeration process by collaborating with a mobile technology developer called Mezzanine.[39]

Through this partnership, MCDSS and Mezzanine developed a new SCT enrolment application with a simplified interface, which immediately

37. https://www.mcdsw.gov.zm/
38. International Policy Centre for Inclusive Growth (2018) 'A brief history of Zambia's Social Cash Transfer Programme'
39. https://www.mezzanineware.com/



reduced errors and much of the time and costs associated with the manual, paper-based data collection process. According to the application can complete a household's registration in under three minutes.[40] Once enumerators have used the mobile application to register household information, the data is submitted electronically to District Social Welfare Officers for validation. Following this, it is automatically imported into the MCDSS management information system, where the Ministry's 'SCT eligibility criteria' is used to determine whether the household is eligible for payments.

Between 2003 and 2016, the paper-based system used by MCDSS was used to collect information on just over 242,000 households. In the first 14 months of Mezzanine's Household Census application going live, enumerators successfully registered over 660,000 households and collected individual data on over two million household members. There are 70 data points that are captured in the mobile application workflow, and in total the database has synchronised more than 55 million data points.[41] Today, the platform is being used by 1,200 enumerators and covers all 108 districts of Zambia.

For the MCDSS, the use of mobile to support data collection has translated into decision-makers having real-time access to vital information; the ability to reach more beneficiary households in a shorter amount of time; and improvements to the turn-around time for beneficiaries to be approved for payments. In the near-term, the data collected could also be used to support the provision of health care and health insurance to vulnerable households covered by the SCT programme, or at national scale.

40. https://www.gsma.com/mobilefordevelopment/programme/mhealth/mobile-enabled-access-to-social-benefits-in-zambia/
41. https://www.mezzanineware.com/from-the-field/2-million-individuals-registered-on-sct



Verifying beneficiary identities

As the GSMA documented in 2017,[42] poverty reduction in India has long been supported through government subsidies aimed at helping the poor access a wide range of basic necessities. However, there is ample evidence that the impact of subsidies on poverty has been negatively affected by 'leakage', with 70 to 85 per cent of total spending not actually reaching the intended beneficiaries. A 2008 report found, for instance, that more than a third (36.7 per cent) of subsidised grain was sold to the non-poor, and 58 per cent was not reaching the intended beneficiaries. Other studies have described how the lack of a robust national identity has had a 'double whammy' on India's ration card system, with an estimated 23 million 'ghost' public distribution cards pushing more than 12 million deserving poor out of the food security umbrella.

In January 2013, the Indian Government introduced a new direct benefit transfer scheme with the explicit aim of addressing these inefficiencies. The new disbursement process ensured that cash was delivered to entry-level bank accounts that were linked to each beneficiary's national ID number (or Aadhaar number). Early evidence suggests that this approach reduced leakage in liquefied petroleum gas (LPG) subsidies by 24 per cent and resulted in very few genuine beneficiaries being excluded. As this scheme is expanded, it is expected that Aadhaar-linked accounts will help other government schemes further improve service delivery, lower corruption and improve collaboration between banks and government ministries.

With more and more governments following India's lead and establishing their own national identity programmes, similar opportunities will emerge for mobile network operators (MNOs) to leverage their existing assets and identity-related practices, such as their regulated SIM registration and KYC processes, to improve how organisations validate the identity of their beneficiaries and ensure the

42. GSMA (2017) 'Aadhaar: Inclusive by Design'



targeted delivery of funds. In all of the countries where SIM registration is mandatory, MNOs have established robust process that allow them to record and store every customers' identification details. In approximately 11 per cent of these countries, MNOs are also required and enabled to validate their customers' identification credentials against a central government database, usually maintained by a government authority or regulator. These processes give a high level of assurance that the registered mobile user 'is who they claim to be', offering new opportunities for mobile to be used as a tool for digital identification.

It is within this context that an increasing number of social cash transfer programmes are exploring how KYC assets from MNOs and other mobile money providers could be leveraged to help reduce leakage in the delivery of funds, increase programme efficiencies, and improve the experience and welfare of beneficiaries. By linking each beneficiary's national ID information to a unique mobile number, mobile platforms can ensure funds are sent accurately, remotely, instantaneously, and effortlessly. Mobile money platforms are also highly transparent (as the process is digitised end-to-end), and are capable of performing high volumes of low-value transactions at low cost.



CASE STUDY 2

Ethiopia's Productive Safety Net Programme

With an estimated population of 110 million, Ethiopia has the second-highest population in Africa and one of the region's fastest growing economies.[43] However, as of 2000 the poverty rate in Ethiopia was estimated to be at 44 per cent[44] and in 2003 an estimated 15 million people were considered food insecure.[45] In response to these persistent challenges, the government convened a number of workshops and consultations to address the issue and, in 2005 the Productive Safety Net Programme (PSNP) was established.[46]

The aim of the PSNP programme is to reduce the social protection system's dependency on food aid, and instead move to a rural-focused cash transfer programme. PSNP is funded by a number of donors,[47] and offers predominantly cash payments to households in exchange for participation in public work activities, such as soil and water conservation measures, arid-land management, and community improvement measures for roads, schools, water, and health centres[48] for a maximum period of six consecutive months in any one year.[49] For those unable to participate in work activities, the cash transfer was unconditional and could be paid for a period of more than six months.

Beneficiaries of PSNP are selected at the local level using set guidelines. Once a list of beneficiaries is compiled, it is submitted to the district level for final approval, and then on to regional offices for spot-checks and validation. In 2005 the government set a target to ensure that five million people left food insecurity through the programme by 2009; today the programme is the largest social protection programme in Africa, and provides aid to an estimated eight million citizens, half of which live in areas affected by drought.[50]

At the outset, the programme faced three key challenges.[51] First, payments were initially delivered to beneficiaries in the form of physical cash, which meant that they were prone to delays as a result of poor weather, poor roads and other difficulties associated with reaching rural beneficiaries. Second, physical cash was difficult to keep track of, and therefore subject to fraud. And third, it was inconvenient and expensive for many beneficiaries to travel long distances to cash collection points.

In 2014 M-BIRR ran a successful pilot for the Tigray Social Cash Transfer Programme,[52] through which the mobile money platform 'M-BIRR' was used to make direct payments to beneficiaries. Founded in 2009, M-BIRR was the first mobile money service in Ethiopia.[53] As the state-owned mobile operator, Ethio Telecom, was not legally allowed to provide financial services, the service was instead initially administered by five micro-finance institutions. As of October 2018, M-BIRR had around 1.2 million registered users,[54] and the service can be used to make deposits, transfers or withdrawals or to pay for purchases and bills[55]

43. See: World Bank. Access August 2019.
44. World Bank (2014) Ethiopia Poverty Assessment
45. Overseas Development Institute (2004) Hunger and Poverty in Ethiopia
46. World Bank (2012) Designing and Implementing a Rural Safety Net in a Low Income Setting: Lessons learned from Ethiopia's Productive Safety Net Program 2005-2009
47. Donors included Canadian Development Agency, UK Department for International Development, Irish Aid, European Commission, Royal Netherlands Embassy, Swedish International Development Cooperation Agency, United States Agency for International Development, World Food Programme and World Bank
48. EU Commission International Cooperation and Development: Ethiopia – Productive Safety Net Programme
49. World Bank (2012) Designing and Implementing a Rural Safety Net in a Low Income Setting: Lessons learned from Ethiopia's Productive Safety Net Program 2005-2009
50. World Bank (June 2019) Human Capital Project: Investing in the People of Ethiopia
51. Abyssinia Business Network (January 2019) M-BIRR e-payment platform supports the neediest Ethiopian Households
52. International Policy Centre for Inclusive Growth (April 2015) Innovative Technology Serving Social Cash Transfers in Remote Rural Areas of Ethiopia,
53. KfW (July 2019) Safe and Cashless Payments
54. KfW (July 2019) Safe and Cashless Payments
55. http://m-birr.com/pricing.html

To address potential issues with rural coverage, and the fact that more than half the population are using basic or feature phones, the service uses USSD technology.[56]

In order to open an M-BIRR account, users are required to visit a financial institution or M-BIRR agent to register their details and show proof of identity (identity documents accepted are a Kebele card,[57] Student or Residence ID card, a passport or a driving licence[58]). While an estimated 38 per cent of adults in Ethiopia lack official identity documents, Kebele cards are acknowledged to be held by most adults as they are issued by local offices and proof of identity takes the form of community endorsement,[59] and with almost 6,500 M-BIRR agents across the country, in shops, petrol stations, cafes and restaurants, the M-BIRR service is easily accessible.[60]

The Tigray Social Cash Transfer Programme was designed to make electronic payments to beneficiaries' accounts each month, and withdrawals can be made at the programme beneficiary's convenience, without any time or date constraints, or associated fees. One of the key benefits of the programme has been convenience: by replacing the five cash disbursement points with a large number of local M-BIRR branches and agents, beneficiaries were given more flexibility to withdraw their cash wherever and whenever is convenient for them. The system also resulted in faster reporting and better auditability, as all electronic transactions were recorded and time-stamped in real time. Importantly, the new service was found to be more secure and minimised the occurrence of theft. Due to the fact that M-BIRR's mandatory KYC process had already been carried out for each household representative (a requirement for opening an account), the risk of fraud and 'ghost households' was drastically reduced.[61] As of January 2019, over 800,000 households received their PSNP payments electronically via M-BIRR, and this figure continues to grow.[62]

In addition to leveraging KYC data, the ubiquity of mobile ownership presents other opportunities for authenticating beneficiary identities, both before and after cash is disbursed. Previous research from the GSMA's Digital Identity programme[63] has found that mobile technology is already being used in multiple ways to provide better access to identity-linked services. For instance, in Rwanda it is only possible for an individual to access the e-government portal, Irembo, if they provide a mobile number that is registered using their National ID.[64] By requiring this, the government ensures that users are able to remotely validate their identity when registering on the platform (through the receipt of a One-Time Password sent to their mobile device); receive SMS notifications whenever their profiles are used to access new services or submit applications; and pay associated service fees using their mobile money wallet. With more governments supporting digitisation initiatives and e-governance service provision more generally, many of end-users interviewed by GSMA over the last three years have said they believe mobile-enabled digital identity solutions were a positive and inevitable part of their future.

There is also emerging evidence that identification services that leverage voice recognition technology hold great promise for supporting cash transfer programmes and improving beneficiaries' experience, especially for vulnerable populations. While not yet widely adopted (compared to other biometric verification methods such as fingerprints and iris scanning), voice verification is potentially a more cost-effective verification tool, as it would not require biometric devices across an MNO's network; it would simply use the mobile phone's microphone to record a beneficiary's voice. Using services such as voice recognition to remotely verify a beneficiary's identity will allow social programmes to reach greater scale, and will also have relevant commercial applications (such as banking, insurance, and health).

56. GSMA Intelligence. Accessed August 2019
57. A Kebele card is a card issued to Ethiopian nationals and shows which Kebele, or district, a person is resident in. Refworld
58. www.mbirr.com
59. World Bank (2017) ID4D Country Diagnostic: Ethiopia
60. KfW (July 2019) Safe and Cashless Payments
61. International Policy Centre for Inclusive Growth (April 2015) Innovative Technology Serving Social Cash Transfers in Remote Rural Areas of Ethiopia
62. Abyssinia Business Network (January 2019) M-BIRR e-payment platform supports the neediest Ethiopian Households
63. See: 'GSMA end-user research: Our top 5 lessons about digital identity'
64. https://irembo.gov.rw/rolportal/en/home



CASE STUDY 3

Primary education stipend, Bangladesh

With a population of close to 165 million, Bangladesh has an estimated 15.5 million children in primary school, and a further 22.8 million in secondary education. In an effort to increase financial inclusion and encourage low-income parents to invest in their children's education, the government introduced the *Mayer Hashi* (Mother Smile) programme in 2017.[65] The programme provided digital payments to 10 million mothers through the mobile banking platform SureCash, with support of the prime minister's office, the Ministry of Primary and Mass Education, Rupali Bank and TeleTalk.

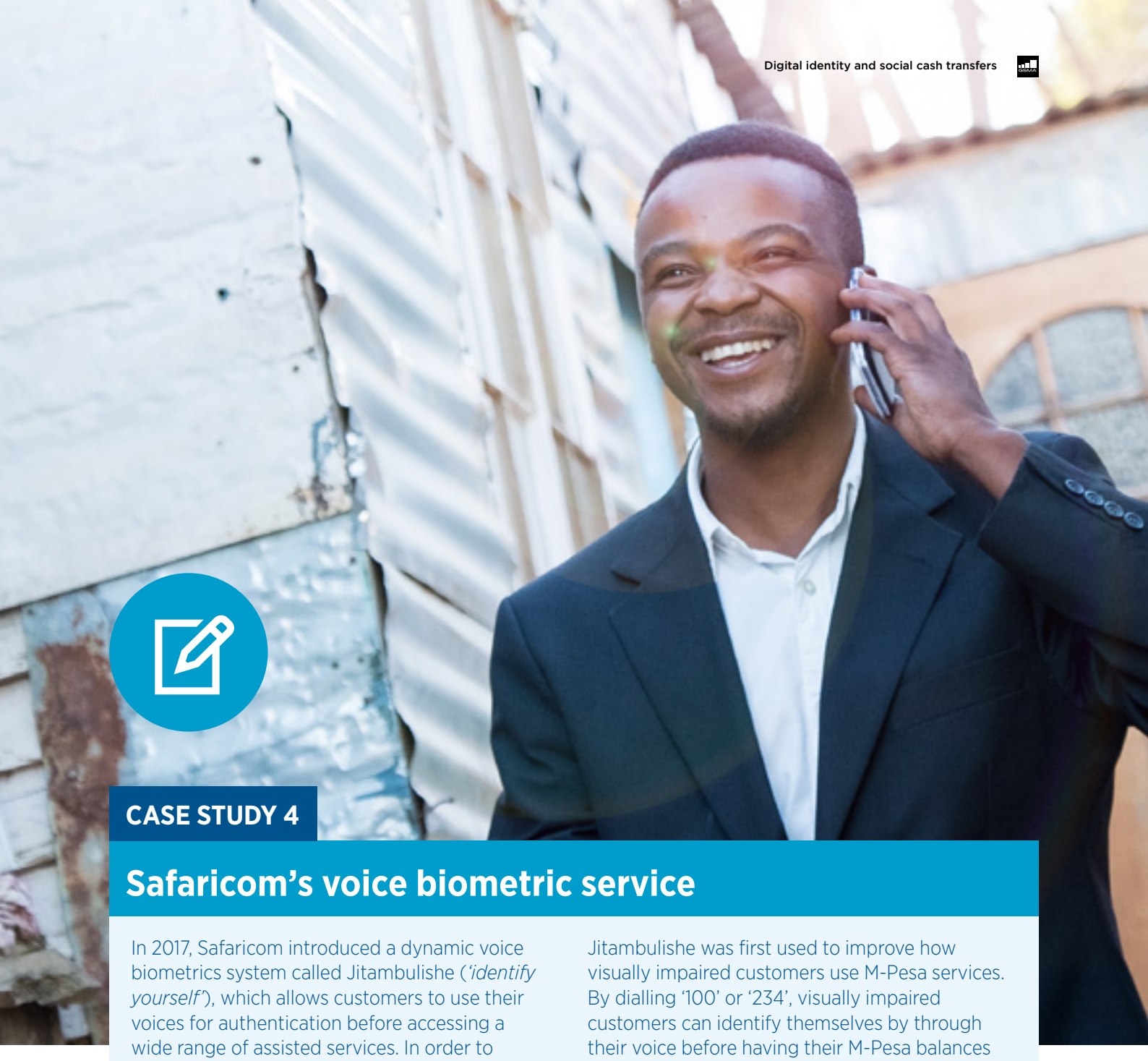
Over 400,000 primary school teachers were used to help mothers who qualified for assistance to fill out the necessary KYC forms and open the required bank or mobile money accounts. Teachers were also used to compile the lists of beneficiaries to be sent to SureCash and, once the lists were scanned and digitised, to verify the information in the beneficiary registry was correct. To compensate teachers for this work, they earned a small fee for each eligible record that was correctly inputted into the SureCash recipient database.

TeleTalk donated two million SIMs to mothers who were enrolled in the programme and ensured that each has a pre-loaded balance of Tk20. Approximately 30 per cent of mothers relied on a male in their household for access to a mobile phone, and surveys conducted with beneficiaries found that mobile phones (or SIM) ownership was key to ensuring that mothers controlled how the cash was used.[66]

The Center for Global Development's analysis of the programme[67] found that digitising payments was a 'win' for headmasters, as it lessened the administrative burden on teachers as well as the risk of allegations of fund mismanagement. The new system was also more convenient for mothers, as it permitted them to withdraw cash through SureCash agents at a time of their choosing, thereby saving them time and costs. The programme also helped nearly seven million mothers open a mobile money account for the first time, helping to close the financial inclusion gender gap. Although most beneficiaries immediately cashed out their stipend, having mobile money accounts opens the possibility that they will use more financial services in the future.

However, the analysis also shows that mothers who could not read or write an SMS message had a less positive opinion of the new system. The ability to do both tasks was associated with: a positive opinion of the new system; being able to withdraw money when wanted or needed; having more control over the stipend; owning a mobile phone. An estimated 45 per cent of mothers were not able to do either, which may pose a challenge for future SMS-based payment and identification services.

65. CGAP (2018) 'How Bangladesh Digitized Education Aid for 10 Million Families'
66. Center for Global Development (2019) 'Primary Education Stipends in Bangladesh: Do Mothers Prefer Digital Payments over Cash?'
67. Center for Global Development (2019) 'Primary Education Stipends in Bangladesh: Do Mothers Prefer Digital Payments over Cash?'



CASE STUDY 4

Safaricom's voice biometric service

In 2017, Safaricom introduced a dynamic voice biometrics system called Jitambulishe (*'identify yourself'*), which allows customers to use their voices for authentication before accessing a wide range of assisted services. In order to register for the service, customers are required to record a pre-specified phrase (in either English or Kiswahili) and confirm either their National Identity Card number or their mobile money M-Pesa PIN.[68] The customer's voice patterns are used to create a unique "voiceprint" (similar in concept to a fingerprint), which is stored as a secure string of numbers and characters. An encryption process ensures that no reverse engineering can be used to use this data fraudulently, and voice recordings are not stored.

Jitambulishe was first used to improve how visually impaired customers use M-Pesa services. By dialling '100' or '234', visually impaired customers can identify themselves by through their voice before having their M-Pesa balances read out to them. Today, individual post-pay and hybrid customers can enrol their voice and Jitambulishe to request their Personal Unblocking Key (PUK) code or unlocking their M-Pesa account. Safaricom plans to gradually introduce more M-Pesa services through the system. Jitambulishe has also reduced the amount of time that call centre staff spend verifying customer identities, greatly improving the quality of service provided to the 300,000 customers who call Safaricom's call centres every day.

68. Safaricom (August 2019) Jitambulishe – Voice Biometrics



Looking forward

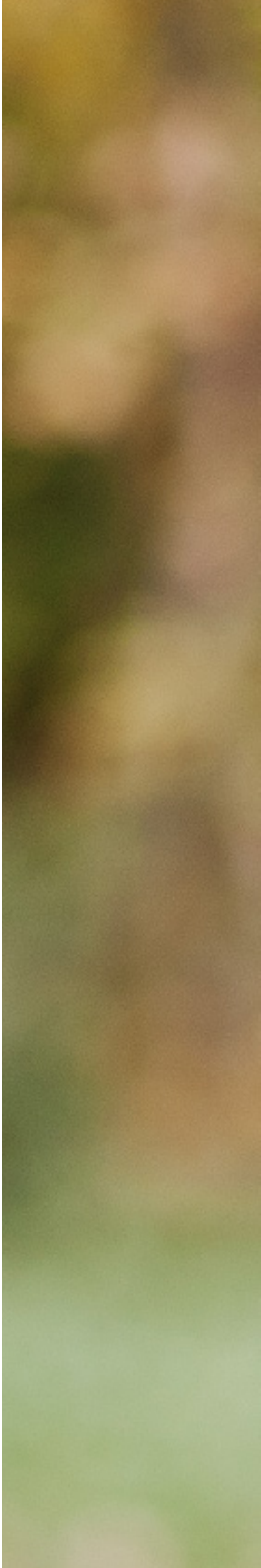
The GSMA's Digital Identity programme is currently working with stakeholders in Zambia to explore how MNOs can support the delivery of social benefit transfers. Initially, this will likely be through the development of an API[69] that allows social benefit programmes to query MNOs' KYC databases and verify the link between each beneficiary's unique ID (such as their national identity number) and mobile number. This will make the mobile number a trusted and reliable way to provide beneficiaries with information and support, and an efficient way to disburse benefits (e.g. cash or vouchers delivered via mobile money). The programme's ultimate vision is to develop new business models for MNOs to provide 'verification as a service', including voice biometrics.

As a complement to this work, our team have recently conducted research to explore the opportunity for MNOs to offer verification as a service to providers of social benefit programmes. The guiding hypothesis of this research is that MNOs are in a strong position to provide novel and commercially-viable forms of identity verification, through their unique position as both a holder of identifying information, and their high penetration in Sub-Saharan African markets. The research, conducted in Kenya and Malawi, explores the size and scale of the SCT market in each country; the identity-linked challenges that organisations and beneficiaries experience during the various stages of enrolment and disbursement; and the opportunities for MNOs to support social benefit programmes through the provision of verification as a service. In particular, our research explores how mobile technologies such as voice biometrics, could be utilised to support remote verification of beneficiaries, thereby overcoming some of the literacy barriers that beneficiaries often experience whilst also increasing the security and efficiency of SCT programmes.

69. An API, or Application Programming Interface, is what allows software programs to "talk" to one another. Operator APIs make it possible for third parties to use certain mobile network functions within their applications.

gsma.com

For more information, please visit the
GSMA website at www.gsma.com



GSMA HEAD OFFICE
Floor 2
The Walbrook Building
25 Walbrook
London EC4N 8AF
United Kingdom
Tel: +44 (0)20 7356 0600
Fax: +44 (0)20 7356 0601