



PATHWAYS TO A BETTER LIFE

The Intricate Role of Digital Finance in Reaching the Sustainable Development Goals

Based on the latest World Bank Global Findex results from 2017 it's tempting to lose faith in financial inclusion as a tool for economic development. The number of people in developing countries with bank accounts increased to 61 percent in 2017 from 54 percent in 2014, yet a quarter of those accounts were dormant last year. Those with mobile money accounts in Sub-Saharan Africa increased to 21 percent in 2017 from 12 percent in 2014, but only a third performed transactions (in the preceding 90 days).¹ Moreover, a quarter of accounts were used for only one thing: person-to-person (P2P) payments.² Sixty-two percent of people received government transfers digitally, but almost half immediately withdrew the money and used cash for their purchases.³

Although these figures show that there is steady success in having more low-income people using a formal financial instrument, at the same time it's natural to wonder if this growing rate of financial inclusion is making a real difference in improving the lives of the same people or even moving them toward achievement of the Sustainable Development Goals (SDGs).

The problem is that we are looking at only a fragment of the overall picture when we focus on only one pathway between a financial tool and improvements in people's lives. We need to look for a multitude of pathways simultaneously to assess the full range of life benefits that finance may provide to ultimate life benefits.

This publication is brought to you by the Pacific Financial Inclusion Programme (PFIP) and BFA. The Pacific Financial Inclusion programme is jointly administered by the UN Capital Development Fund (UNCDF) and the United Nations Development Programme (UNDP) and receives funding from the Australian Government, the European Union and the New Zealand Government. PFIP operates from the UNDP Pacific Office in Suva, Fiji and has offices in Papua New Guinea, Vanuatu, Samoa and Solomon Islands.

By Daryl Collins, Liz Larson and Abby Butkus

February 2019

Copyright © UN Capital Development Fund. All rights reserved.

The views expressed in this publication are those of the author(s) and do not necessarily represent those of the United Nations, including UNCDF, or their Member States.

¹GSMA 2017

²FII 2017

³Global Findex 2017

Take pay-as-you-go (PAYGo) models, for example, in which a customer might acquire a solar home system through a rent-to-own or a perpetual leasing arrangement. Over 750,000 PAYGo systems have been installed in the last five years, most of these in East Africa. The customer purchases days of prepaid energy via mobile money or airtime, often on a flexible basis. A clear benefit of these systems is that they contribute to sustainable energy use, which is one of the SDGs. But we need to go a step further for a holistic view as to whether these systems have improved the lives of the low-income people who purchase them and by how much.

An interview with a PAYGo user in Kenya offered just such an insight:

“There is no day that my phone will be off, because I charge every day. My wife can now sell fish even late at night; she can go to the market with the torch in case she comes home late. My children have also improved in class, because they study at night before going to bed. If I had [this service] earlier, the one in class seven would now be in form one; she has really improved, because of the evening studies.”⁴

This quote reveals how a single improvement, such as access to PAYGo energy, can have the potential to represent several pathways to delivering on the SDGs: Clean Energy (SDG #7); Education (SDG #4); Poverty alleviation (SDG#1); and Safety (SDG#11). Needless to say, the paths to each of these SDGs are rife with barriers and need improvements, yet this one example suggests that the benefits of finance might not be in the form of a direct link between the financial tool (mobile money) and any one SDG. Instead, the tool can lead to an intermediate benefit, which subsequently leads to progress toward multiple SDGs. This Focus Note discusses the logic behind this conceptual framework.

This approach has a variety of applications including both programme design and evaluation, particularly for pioneering practitioners offering new tools and services in an adaptable way. It can indicate, even early in the product cycle, how customers are using the service and what benefits they are receiving – critical information for service providers to tweak and adapt their value proposition to low income clients. In this way, it can become a strategic tool for financial institutions to provide their customers with all the benefits that are possible, as well as a tool with which donors supporting those institutions to see where their strategies are paying off. Ultimately, this puts the impact on the customers at the center of the strategies for both.



⁴Interview with PAYGo subscriber, March 2017, Western Kenya.

⁵Karlan et al. 2016

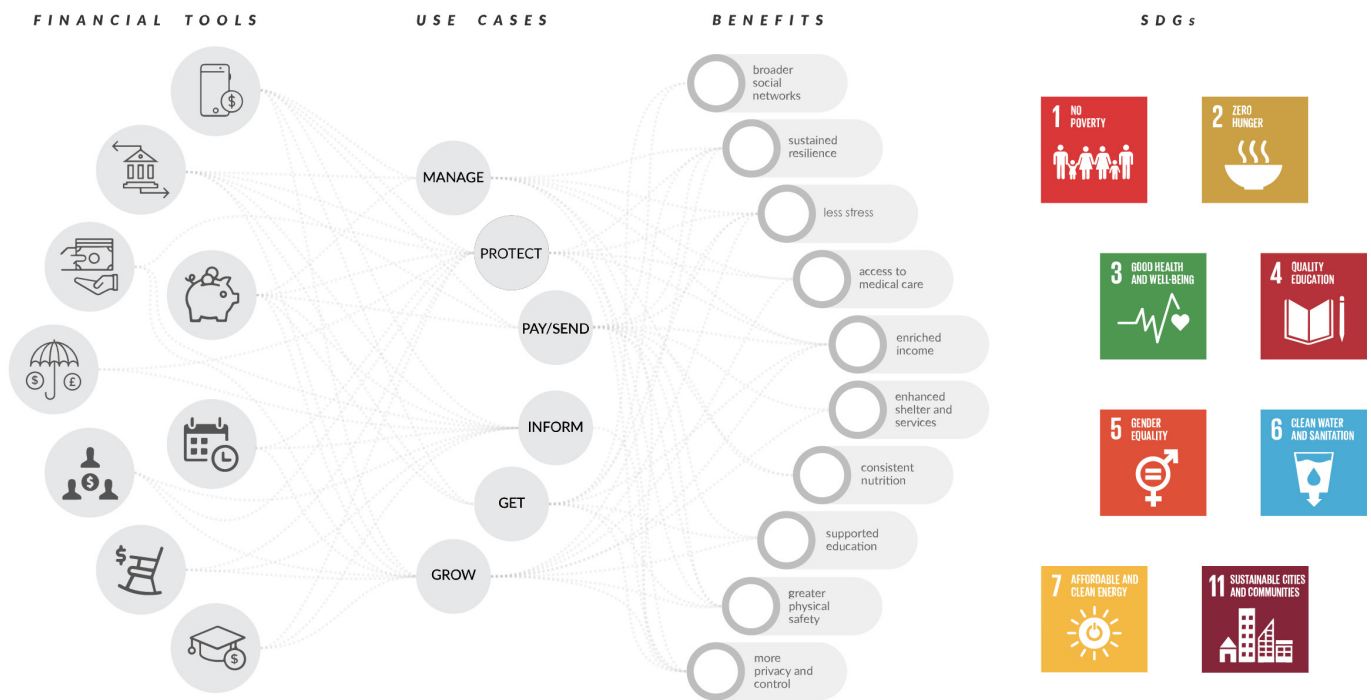


Figure 1. Conceptualizing pathways from financial tools to SDGs

The faint dotted lines between all the elements in figure 1 reflects all the hypothetical connections from financial product to use case to benefit to SDG. We have drawn these hypothetical use cases from a range of experiences of how consumers might possibly use financial tools in different ways and the possible benefits they might receive. The measurement exercises that UNCDF and

BFA are undertaking will determine whether those hypothetical pathways are backed by evidence, as well as which pathways are consistently reported by users and which are not. We report some results here but are working on more to report in future publications.

EMBRACING PATHWAYS TO PAVE THE WAY TO IMPACT

Recent efforts to consolidate the evidence that connects financial tools to development impacts have not been decisive.⁵ Klapper, El-Zoghbi, and Hess (2016) point out that while there is some sign of a connection between financial inclusion and a handful of SDGs (extreme poverty, gender equality, and improved nutrition), the evidence between financial inclusion and other SDGs is even more sparse. This is the impetus for establishing a pathways approach pioneered by the UN Capital Development Fund (UNCDF) - Pacific Financial Inclusion Programme (PFIP), with conceptual and technical support from BFA.

One of the key challenges in proving impact is to answer how that impact occurred. We are suggesting that we break down each step in the process by which customers experience value from a financial tool. The conceptual framework is outlined in figure 1, a dynamic infographic, which provides an overview of the pathways that can come from financial instruments.

Each pathway can be described in three sub-journeys:

1. From registration to use cases: Customers register for a financial product or service, but do they use it? And if they do use it, in what way?

2. From use case to benefit: Customers may use a financial product in a particular way, but do they recognize a benefit, or several, from the way they use it?

3. From benefit to SDG: Customers may experience a benefit, but do they continue to experience that benefit in a way that really changes their lives?

THE FIRST STEP ON A PATHWAY

Not all consumers use a financial product or service in the same way (and often never even use it at all)

We know that access does not mean use; the number of dormant savings accounts cited at the beginning of this paper is evidence of that.

Neither is usage the end-goal after access. Believing so would be to misunderstand the nature of how people use financial products, no matter what their incomes. We know from a range of evidence⁶ and from looking at users' transaction behaviour that customers utilize products in a variety of ways. A bank might expect that a simplified transaction account, for example, might be used to 'manage' money with many transactions and low balances. However, while moving money in and out of an account within a short period of time is transactional (i.e., 'pay' and 'get'), holding it in an account is a savings behaviour.⁷ Account holders also hold money over time, an example of saving in a different way.⁸

Moreover, it is worth distinguishing that while most simplified accounts allow people to 'get' money from the government or another person, not all provide for the possibility of 'paying' a shopkeeper or a bill, although it might permit transfers to other individual accounts. Therefore, we should map the range of potential use cases that can relate to any instrument. Six use cases were developed that describe the ways people might adopt financial services to manage their money and, therefore, their lives. The use cases were developed after analysis of transaction data from financial service providers and were informed by BFA's earlier work on Financial Diaries to understand how these use cases could be observed in customer behaviour.⁹ The use cases are defined in Table 1. Inherently, the more use cases each financial instrument offers, the wider the variety of pathways towards impact.

Use case	Definition
MANAGE	Stretch money during the short-term (<2 months)
PROTECT	Retain a sum of money; have the opportunity to receive a usefully large lump sum
PAY	Make bill payments, send money to another person, make a purchase
INFORM	Check a balance, access customer support to help use this instrument to oversee finances
GET	Receive a payment (i.e. salary, remittance, government payment, insurance payout)
GROW	Increase assets by having the capability to save up or pay down

The GROW use case requires even closer attention. Collins et al. (2009) and Rutherford (2001) point out that low-income households can grow 'usefully large lump sums' (which they see as equivalent to a month of income) in one financial instrument. These lump sums can be created in savings, loans, and insurance instruments and can be put to emergency, life cycle, and opportunity uses. In this way, savings might be considered accumulators or

'saving up', while loans might be considered accelerators or 'saving down'. These are therefore usefully lump sums that can 'grow' within a financial instrument. The highest proportion of these are used for opportunities in all three countries covered in the research for Portfolios of the Poor (India, Bangladesh, and South Africa), such as the purchase of land, stocks, or inputs for farming or business, durable goods, debt repayment, or on-lending.

⁶ BFA Financial Diaries

⁷ GAFIS 2012

⁸ Vodafone Fiji customer data, provided 24 January 2018.

⁹ Amin 2015; GAFIS 2014

The method for identifying active users' different use cases is via a quantitative analysis process where both transactions and balances are used to detect patterns of different use cases. Data scientists first underwent an extraction process with the financial institution, repurposed the data for analysis and then ran proprietary code to detect different use case. This was done for all customers of a particular product.

These use cases play out in analyses of transactions and balances. Using anonymized Vodafone Fiji data for holders of the mobile money wallet M-Paisa, we identified four prominent use cases: PAY, PROTECT, GET, and MANAGE. This is based on analysis of 27 percent of accounts that Vodafone reported were active users,¹⁰ so already we see the potential for impact shrink even from registration. Over a one-year period, 28% of active clients did MANAGE; 33% did GET; 35% did PAY and 36% did PROTECT.

It's worth noting that these results are based on a mobile money project, although other types of products, like savings and insurance, are built into this framework. UNCDF is near completing the same type of analysis on three more financial service providers in the Pacific and Africa, this time with two banks and one mobile network operator on digital financial services geared towards the low-income segment. Similar to the analysis BFA has done with ten other banking institutions on similar products, we're finding a greater percentage that PROTECT and a smaller percentage that PAY. Therefore, as we continue this measurement on a range of financial products, we expect different patterns of use across them, which is why it is important to consider the impact across an entire portfolio of financial tools and not just one.

THE SECOND STEP ON A PATHWAY

Usage can lead to recognized benefits

The transaction and balance analysis, such as the Vodafone data review above, tells us how customers are using financial instruments, but it doesn't address other questions, such as: How do we know whether there is a benefit to the customer? How do we discover what type of benefit the customer is getting? Is it a benefit that is actually linked to an SDG? Most financial tools can increase convenience, but does this convenience really enhance consumers' lives? Maybe so, if a banking or mobile money app spares small business owners the need to spend time running to a loan repayment meeting in person, thereby saving money and boosting their own reputation for reliability.

So, again, using a range of primary and secondary data, we have identified a set of hypothetical benefits listed in table 2 that not only might arise from different use cases, but also that, if true, would lead to an improvement in SDGs. Again, these are hypothetical pathways from use cases to benefits. As UNCDF and BFA execute measurement on various financial institutions, the evidence will either prove or disprove these hypotheses, and also provide data to suggest which are stronger or weaker.

HYPOTHETICAL PATHWAYS

Existing evidence provides a hypothetical pathway that could lead from a financial instrument to a use case, from a use case to a benefit and from a benefit to an SDG. A series of light measurement tools shows whether those hypotheses have merit.

¹⁰Vodafone defines active as 'a mobile money account which is registered and has set up a unique PIN at least once.'

Unlike the analysis presented above to detect use cases, the method to detect a pathway between use cases and benefits is a phone survey to individual customers. It's

worth noting that we also consider negative impacts, such as over-indebtedness.

Life Benefit	Positive responses to survey questions that suggest customers receive a benefit from the financial tool
Broader Social Networks	Respondents say that they are able to call upon a wider group of people when something unexpected happens.
Sustained Resilience	Respondents say that after using this product that they are more confident about how they will handle an emergency or look after themselves or their family.
Less Stress	Respondents say that they were less stressed about receiving a payment on time
Access to Medical Care	Respondents say they have greater access to medical care as a result of using the product
Enriched Income	Respondents say that after using this product they were more able to invest in their crops and business since using this product
Enhanced Shelter and Services	Respondents say that they are able to access better energy in their homes after using this product.
Consistent Nutrition	Respondents say that they are able to keep their nutritional intake more consistent throughout the month
Supported Education	Respondents say they are more able to pay for school fees and supplies
Greater Physical Safety	Respondents say that their personal safety has increased since they started using this product
More Privacy and Control	Respondents say that they have greater privacy over their money after using this product.

Table 2. Life benefits and the customer survey responses to determine if they are realized

Methodologically, the data analytics that determine use cases are based on individual transactions, which makes it straightforward to use a survey of those individuals to establish whether the user has experienced actual benefits from using that financial tool. One of the objectives of this conceptual framework is that it can be translated into a 'light' method for measuring how use cases lead to benefits, which financial inclusion programmes can run themselves, and at relatively low cost. Having established whether a customer is in a use case segment, we only need to ask whether those users have discerned an actual benefit. This means examining a smaller sample for the benefit survey and being able to ask fewer questions, which enables us to employ a phone survey. This light touch approach can unearth sufficient leads that, combined with growing evidence from multiple institutions from across different countries, establish a picture of likely impact of a given service on people's lives, and on progress toward the SDGs. Moreover, it can also provide early indications of whether a financial product is having real benefits for customers, allowing both financial institutions and donors to course-correct early.

Needless to say, given the 'lightness', there are caveats to this approach. The methodology does not attempt to produce evidence comparably robust to that of more scientific research, like 8 randomized control trials. Rather, for UNCDF and others in the development space tasked with carefully resourcing public development assistance across a wide range of interventions, and understanding the impact therein, the approach is a much-needed opportunity to undertake an initial probe to explore the effects of financial service usage and identify the felt benefits on the ground. More scientific methods require long-term observations of randomly assigned individuals to either a group that receives a specific product or a control group. Scientific studies are critical to advance the robust body of evidence for a broad community of researchers and other stakeholders. However, this approach is ill-suited for programmes like those run by UNCDF which support innovation in short term project cycles across a plethora of diverse financial services.

One way of connecting this framework of ‘benefits’ to a different line of thinking about the impact of financial inclusion on an improvement in people’s lives is to categorize benefits into several subsets of factors affecting financial health. Growing out of a conversation initiated in the US by the Center for Financial Services Innovation (CFSI), there is increasing focus on the concept of financial health as a framework for understanding an individual’s overall well-being.

CFSI, together with the Center for Financial Inclusion and Dalberg’s Design Impact Group have adjusted the framework to apply it to the developing world. Using this framework, MetLife Foundation commissioned a Gallup poll across 10 countries to measure financial control and security as a component of financial health. When the first surveys about the benefits of financial services come in, we may consider putting the benefits into the three types of financial health:

- Resilience, which would bundle together the benefits of Improved resilience, Increased income and Stronger social networks;

- Control, which would bundle together the benefits of Greater control and privacy, Smoother consumption and Improved access to services; and
- Trust, covering Greater privacy, Less stress, Increased security and Greater efficiency.

Going back to the Vodafone PAY use case, analysis from the customer survey have shown some strong results. 88% of those who use PAY reported that they now have a greater number of people they can ask for emergency funds compared to the number they could ask before they used mobile money. This is a very similar results to that Suri and Jack (2014)¹¹ found in Kenya. Not unexpectedly, 82% of those who use PAY report that they feel more secure from theft compared to the method they used to pay before mobile money.

Other types of financial offerings can offer further benefits from PAY. We can hypothesize pathways to four different benefits as shown in figure 2. From all use cases, we can hypothesize many different pathways to eight benefits, also shown in figure 2. For example, increased resilience comes from PROTECT AND GROW, or increased income comes from GET and GROW. It’s worth noting that experiencing one benefit may lead to another benefit. For example,

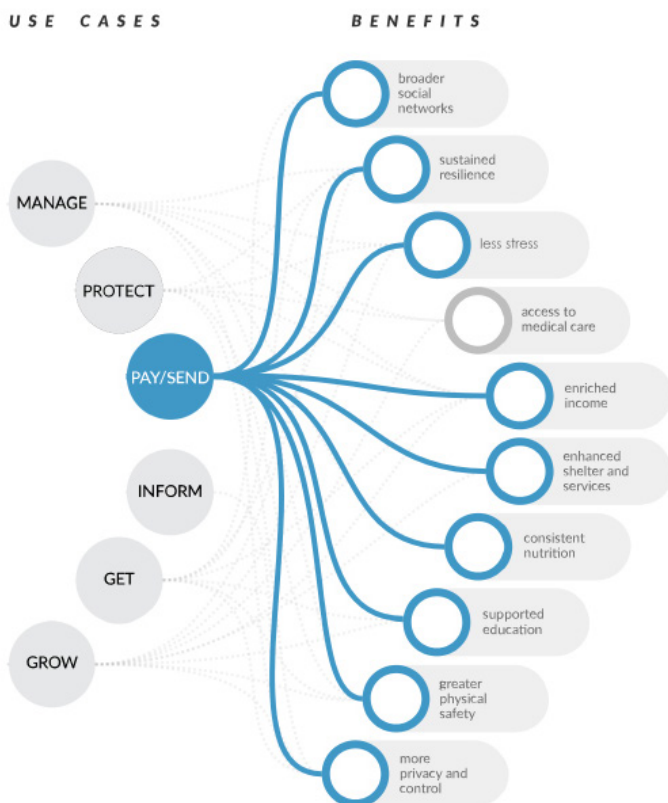


Figure 2. PAY use case to hypothetical benefits pathways

The benefit of knowing which customer can be tracked to each of the sub-use cases is that we can restrict the questionnaire to ask about those use cases we know already apply to certain customers. This approach encourages more relevant answers and also makes for a quicker survey, which also tends to improve the quality of answers.

SPLITTING PATHWAYS

Hypothetical pathways can diverge given that one financial tool can lead to multiple use cases, a use case can lead to multiple benefits, and benefits can address multiple SDGs.

¹¹<https://www.aeaweb.org/articles?id=10.1257/aer.104.1.183>

THE THIRD STEP ON A PATHWAY

Continued realization of benefits ultimately leads to SDGs

Simply using a financial instrument for a year and feeling that it has a benefit does not necessarily mean that the instrument in question will have a long-term impact on poverty levels, living standards, or other aspects of a person's life. A sustained level of use and reported benefits are the only factors that would allow us to determine any change in the lives of low-income people¹² at a scale that would point to progress toward the SDGs.

But are we missing a step? We have now tracked pathways from financial instrument to usage and then usage in specific use cases, before arriving at stated benefits and finally the hypothesis that customers are on the right paths to a better life. How do we determine whether there is a viable hypothesis that a benefit should then ultimately lead to progress against an SDG?

Literature should hold the answer. We have mentioned the lack of research into the connections between financial instruments and progress toward the SDGs, but many of the benefits discussed above have little to do with finance themselves. The advantage is that we can therefore turn to a much broader array of literature focusing on nutrition, health, education, water and sanitation, housing, and safety. Each of these articles provide evidence that there might be a possible pathway from a benefit to one or several SDGs. When we look at that literature – to see all the literature we collected, refer to the infographic accompanying this note - we see paths that could lead to nine SDGs:



PATHWAYS CONVERGE AT THE SDGs

Although registered customers drop off at each stage of the pathways to impact, ultimately these pathways combine to reach the SDGs.

Let's return to the Vodafone PAY use case and, for the sake of simplicity, look at the sub-use case 'PAY bills'. For Vodafone Fiji this primarily relates to payments for pre-paid electricity, which can ultimately lead to advances toward a number of SDGs.

In other contexts, where electrification has not reached rural areas, the introduction of PAYGo solar energy businesses could lead to gains across many more SDGs. Being able to access better services like PAYGo means mobile money users can have light for the first time, or are using cleaner energy, which in turn can enhance safety in several ways. If the customers previously used wood, turning to solar could lead to better health over time. If children can study for longer, this could lead to improved education. If people are able to work longer or more efficiently, then they might be able to improve their resilience, creating a virtuous circle that might ultimately lead to less poverty. And if PAYGo is applied to water, then there could also be better sanitation. There are a number of studies measuring the impact of PAYGo solutions to these impacts, with mixed results from different products and different geographies (see several references within the accompanying infographic). Again, as science progresses and more studies are repeated in different settings, the increasing robustness of this building evidence adds to the overall picture of impact pathways.

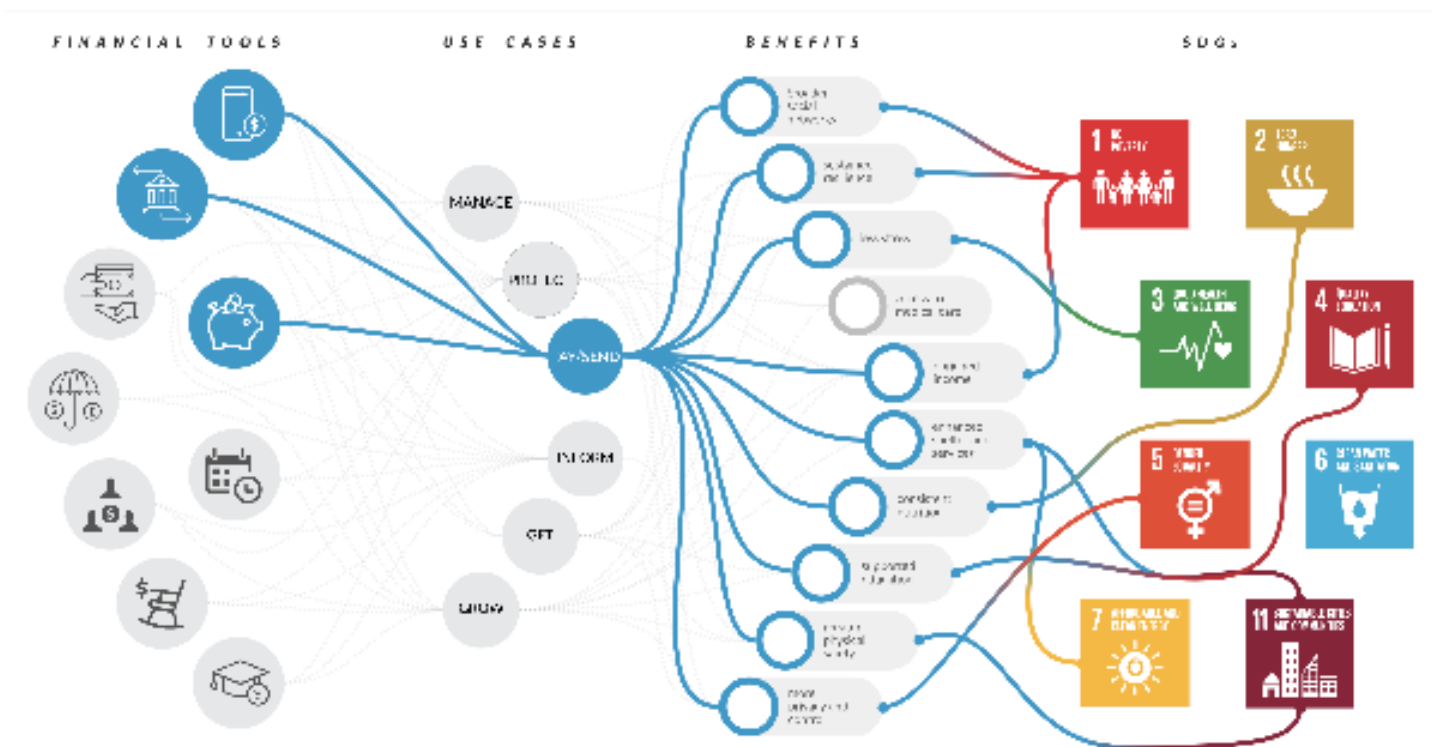


Figure 3. PAY use case pathways

As we show in figure 3, all of these pathways sprout from one simple use case – PAY – and only one financial instrument – a mobile money account – from a single provider. Imagine if we could map all the multiple pathways that would come from all financial products and services.

The result is an intricate map of many lines, many pathways. The linkages between financial tools and realizing the SDGs would be more discernible and provide a plausible roadmap towards impact. Like explorers finding a new route to treasures, we test a path using the 'light' measurement method described above, before bringing in the heavy guns of more robust research methods to establish a tarred road.

SEVERAL FEATURES OF A SYSTEM OF PATHWAYS

There are several features of the pathways that are shown in the conceptual framework above, and in the infographic that accompanies this Focus Note, that fit the reality of what we have seen so far in financial inclusion:

- We know that many customers who begin to use a financial product soon stop using it in a way that actually benefits them or stop using it at all. There are many points at which users can fall off the pathways – from take-up to usage, or from usage to experiencing some sort of short-term benefit – that might ultimately lead to an SDG. Inherently then, if we view a straight pathway from the take-up of a financial tool to the SDGs, there is a slow but steady narrowing of the number of people that might experience gains as measured against the SDGs; such an approach would be misguided as the reality is that there is not just one pathway, but many.
- The pathways shown in figure 3 are intertwining and changeable. There are multiple paths from use cases to benefits, reflecting that using a tool in a particular way may lead to one or more benefits. It shows that one tool can be used in multiple ways, and that each benefit could lead to multiple SDGs.
- Pathways are not precisely linear. As we've seen, usage patterns of a single customer can change over time, making a benefit they are experiencing change while they take advantage of using a financial tool in a different way.
- This splitting and rejoining ultimately leads to a combination of pathways leading to SDGs. These pathways may look meager if viewed individually, but together they may be more helpful in making progress towards the SDGs, especially when combined with nonfinancial interventions.

This method establishes which pathways hold the most promise to see a registered customer from use to an SDG. By mapping potential pathways from a financial service to SDGs, we can contribute to development initiatives that are implemented within a timeframe and budget that is not

conducive to academic studies of impact. Given that such mapping is 'light-touch' and low-cost, it can be repeated frequently, allowing programme managers to follow trends in usage, benefits, and impacts.

NEXT STEPS

Looking to the future of finance and poverty

The next steps are to embark on a survey of active Vodafone mobile money users, with specific questions for those within each use case. The responses to this survey will show us how likely it will be to go from a particular usage patterns to felt benefits. We truly cannot predict what the results will be as this particular exercise has never been conducted.

Expanding this methodology to datasets from other partners in the UNCDF portfolio is now underway, with banks in the Solomon Islands and Papua New Guinea, and with a mobile network operator in Zambia. We will be finding whether users of savings/transaction products from a bank follow the same or different usage patterns to a mobile money product. Moreover, the framework may need to expand as we trace the impact pathways of other interventions such as strengthening agent networks.

Ultimately, we hope that this conceptual framework and methodology offers a way to envision the journey from usage of financial instruments to achievement of the Sustainable Development Goals and can show the pathways by which financial inclusion efforts are improving the lives of low-income people. This is applicable to development programmes to help them fine-tune the ways financial tools can best underpin interventions for measurable improvements in peoples' lives. It is also applicable to financial institutions in shaping products and tools that realize as many use cases with as many benefits as possible. For many stakeholders, this framework and measurement methodology might be a way to both establish potential pathways and measure progress along them, providing increasing evidence as to how finance can ultimately help improve peoples' lives.



Pacific Financial Inclusion Programme



Check out our website
www.pfip.org



Twitter
[@UNCDFPFIP](https://twitter.com/UNCDFPFIP)



Facebook
[@UNCDFPFIP](https://www.facebook.com/UNCDFPFIP)