

Digital Finance for the Real Economy: Introduction

Daniel Waldron and Alexander Sotiriou

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Photo: Bernard Recirido, 2017 CGAP Photo Contest



Digital financial services can lead to...



They contribute to international development across several sectors (education, energy, health, water) and organizational structures (for-profit business, nonprofit, government body).





Greater efficiency

Digital payments create leaner businesses.



Reduce both upfront capital expenditures and ongoing operational expenses by leveraging third-party payment infrastructure to reduce cash handling costs and instantly transfer money anywhere.



Similarly, digital payments lower frictions for customers, enabling them to make payments from their own home or neighborhood without long queues .



Digital transactions create digital records, which can be tracked and audited. This real-time, granular data bring much-needed transparency to organizations, while allowing them to solve problems quickly and use their resources more efficiently.



Greater Efficiency

Efficient healthcare saves lives and money



Digital finance saved lives and money during the 2014–2016 Ebola crisis in Sierra Leone.¹

Over 14,000 people were infected with Ebola in Sierra Leone and nearly 4,000 of them died.

Ebola response workers were at the front lines of fighting the outbreak.

Workers found that cash payments were subject to errors, delays, and fraud.

Implementing digital payments to these workers had a dramatic impact.



Estimated number of working days gained by preventing strikes.



Estimated amount saved by reducing fraud and cost of handling cash and increasing accuracy.



Estimated number of lives saved by reducing worker strikes.



Greater Efficiency

Efficiency can improve access to education and energy.

Digitizing Teacher Salaries in Liberia (USAID)²



Reduce cost to collect salary, from \$25 to \$2.



96%

Reduce missed **class time** because teachers can collect salaries in less time.

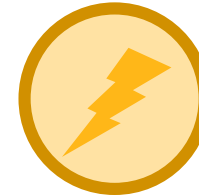


Save time to collect salary from 2 days per month to 25 minutes.

Electric Utility Going Cashless in Uganda



Ugandan electricity distributor Umeme began eliminating cash payments in 2014.



- Operating costs cut by 2.5% year-on-year through 2017.
- At the same time, its customer base increased by 73%.³



Greater Efficiency

Digital payments save customers time and money.



Digitization of school fees in Côte d'Ivoire strengthened school systems...

99%

Secondary school registration payments made by mobile money.⁴



Households **save time and money** by paying fees digitally.



Increase in overall fee collection means **larger school budgets.**



Better data for monitoring students and schools and allocating resources.

...Digitizing water bills in Kenya saved households valuable time.

82%

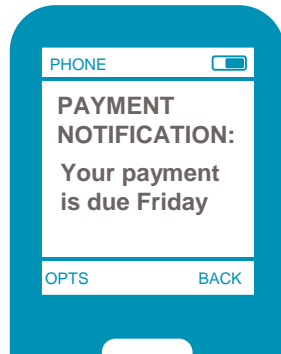
Decrease in time customers in Kiamumbi, Kenya, spend to pay water bills.⁵





Greater Efficiency

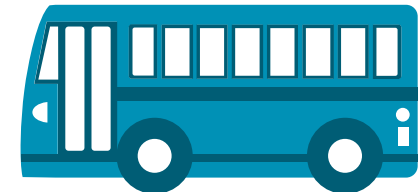
DFS enables proactive cashflow management.



Pay-as-you-go (PAYGo) solar operators know the minute that a payment is due; they use that data to pro-actively encourage customers to pay on time.



Education ministries can more easily track where their funds are going, helping to eliminate “ghost teachers.” Ghost teachers in India cost the government about \$1.6 billion per year.⁶



Bus operators in Kigali increased revenue by 140% after implementing digital payments by eliminating side-selling of tickets. The change to digital payments helped them optimize route placement.⁷



Greater Efficiency

Segmentation improves customer management.

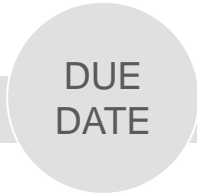


M-KOPA

M-KOPA, a leading PAYGo solar company, uses repayment data to segment its customer base, then tailors credit interventions for each segment.⁸



Leopards pay ahead of time and retire their loans early.



Giraffes consistently pay on time and finish their loans on schedule.



Green tortoises pay behind schedule, but are consistent and will repay their loan in full.



?

Red tortoises have a higher likelihood of default and require rapid, proactive interventions.



Deeper Customer Engagement

Digital finance data can be analyzed to improve customer service and develop new product offerings tailored to a customer's needs.



Providers leverage their customer relationships and granular data to design tailored savings, credit, and insurance products that bring more value to their customers.



Digital payments platforms make it possible to implement differential pricing schemes, which can be powerful tools to expand service access for vulnerable households.



Deeper Customer Engagement

DFS data lead to new and better services for customers.

PAYGo providers have developed new credit, savings, and insurance products for good-paying customers.⁹



Alternative credit providers such as One Acre Fund have bundled additional assets with their agricultural input loans, allowing farmers to purchase solar home systems(SHS).

10



Fenix International¹¹



In 2016, CGAP worked with Fenix to develop an education financing product.



Households borrowed for a term's school fees, then could pay off over the next 100 days.



If they missed a school fee payment, their lights went out.



Percentage of households selling assets prematurely to pay school fees fell from 46% to 20%.



Deeper Customer Engagement

DFS+ smart meters can help water utilities connect more customers and keep them connected.¹²



CityTaps

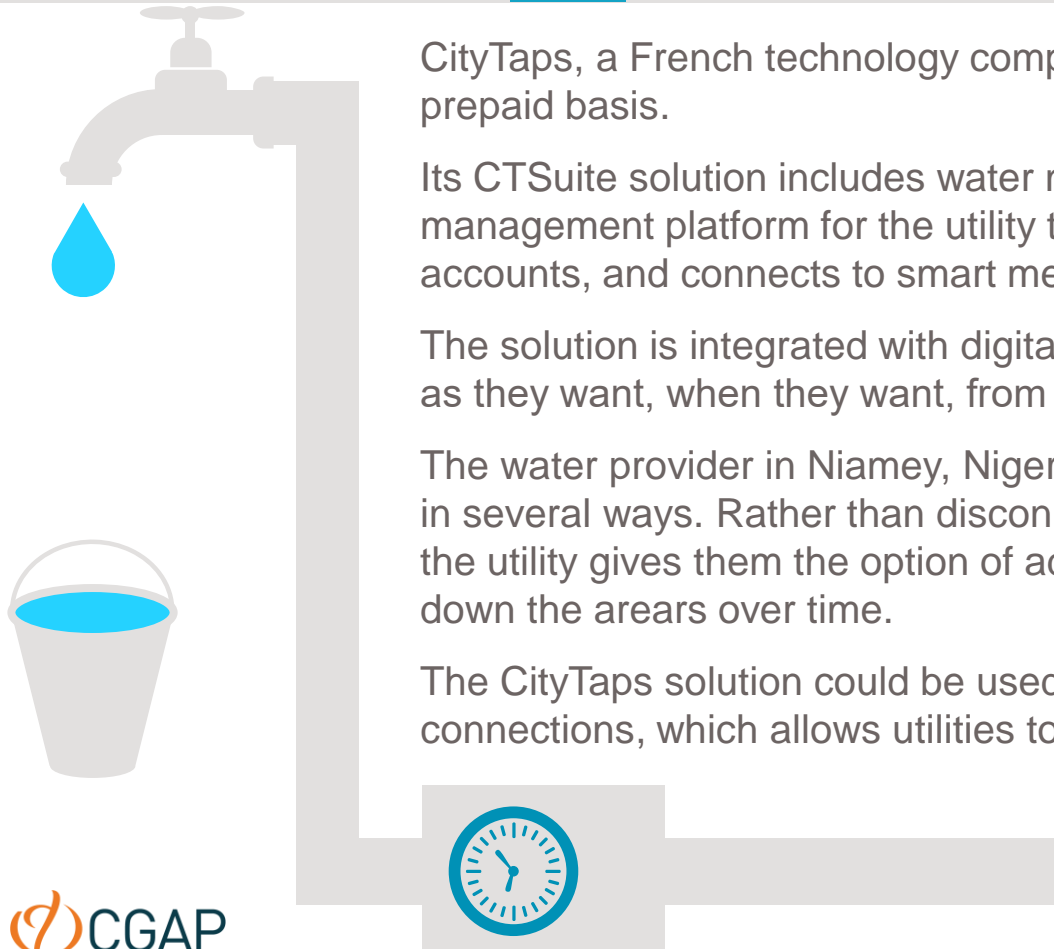
CityTaps, a French technology company, helps water utilities sell water on a prepaid basis.

Its CTSuite solution includes water meters for customers and a cloud-based management platform for the utility that collects use data, reconciles accounts, and connects to smart meters to switch them off and on.

The solution is integrated with digital payments. Customers pay as much as they want, when they want, from wherever there's a mobile network.

The water provider in Niamey, Niger, is piloting the CityTaps solution in several ways. Rather than disconnect customers who have arrears, the utility gives them the option of adopting prepayments and paying down the arrears over time.

The CityTaps solution could be used to help customers finance new connections, which allows utilities to expand into lower-income areas.





Deeper Customer Engagement

Targeted subsidies are more effective when implemented through DFS.

An often-overlooked aspect of digital finance is that it permits (and enforces) a level of pricing nuance that is difficult to achieve with cash.

In Bogota, smartcards allow the metro system to extend millions of dollars in discounted fares to over 160,000 low-income riders. This had a positive impact on the hourly earnings of workers.¹³

Energy and water providers are looking to do the same, allowing them to maintain affordability through cross-subsidies.





Unleashed investment

By securing end-to-end payments and providing easily auditable records, digital finance helps companies and organizations raise new funds and manage the funds more efficiently.



A principal benefit of digital finance cited by providers is the security it brings to their investors.



Digital cash flows can be passed through directly to investors or special purpose vehicles, giving them added security.

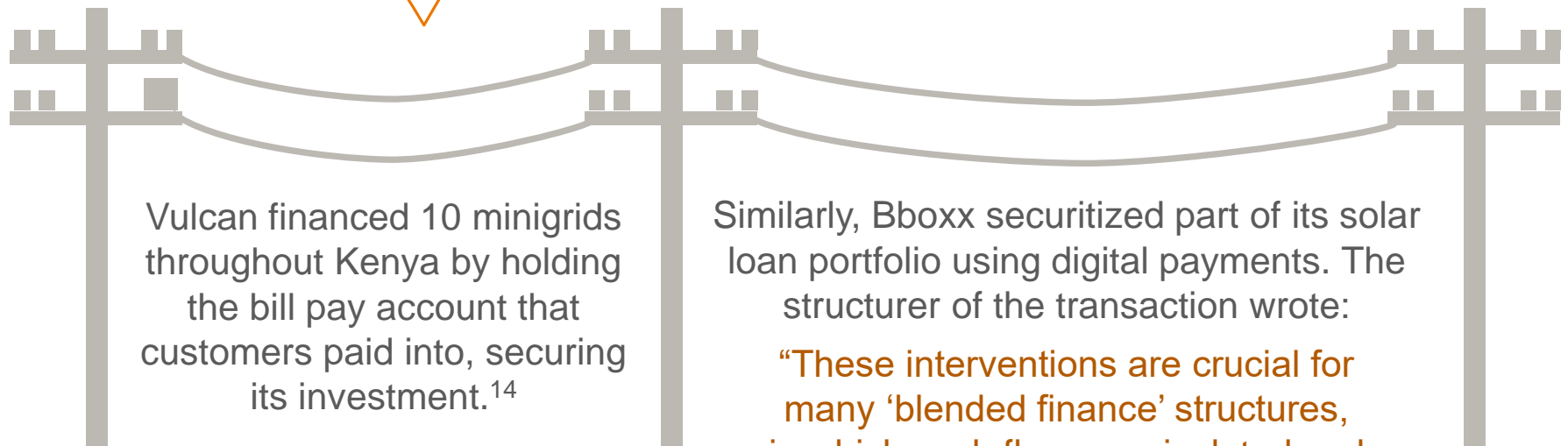


Digital bill pay accounts can be held as collateral for commercial debt transactions.



DFS provide investors greater transparency of and security over investee cash flows.

“It is essential to be able to isolate the pool of assets transferred to the [special purpose vehicle (SPV)]. This means segregating...the payment stream from those assets so that they flow into the SPV with no or a minimum amount of interface [from the originator...[ideally] proceeds will flow directly from the mobile money provider into the SPV’s bank account without involvement of the [off-grid energy company].”¹⁵



Vulcan financed 10 minigrids throughout Kenya by holding the bill pay account that customers paid into, securing its investment.¹⁴

Similarly, Bboxx securitized part of its solar loan portfolio using digital payments. The structurer of the transaction wrote:

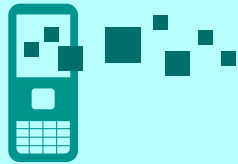
“These interventions are crucial for many ‘blended finance’ structures, in which cash flows are isolated and divided among investors and providers.”¹⁵



New Business Models

Remote transactions enable new business models that can expand access to critical services.

When finance is digitized, all types of service providers can better serve lower-income and more remote customers.



Digital payments facilitate more micropayments and prepayments, which fit better with irregular incomes and are cheaper to collect.



Transaction data and low-cost communication/payment channels make it easier for providers to design follow-on offerings with higher value propositions.



The added security of digital payment flows enables increased investment.

Separately, each of these attributes can improve existing service models. But **combined**, they can be used to create entirely new classes of business models that sustainably meet development objectives, such as PAYGo solar.



Digital finance+ remote communications facilitates PAYGo service and financing, which can expand access to lighting, cooking fuel, and water.



Digital Payments allow companies to sell to anyone who has mobile connectivity.



Remote Lockout technology reduces portfolio risk by ensuring willingness to pay.

Financed, Affordable SHS



SHS is purchased on credit.



Customer pays a \$10-30 deposit and acquires the asset.



Monthly payments of \$8-\$20 combine loan installments and use fees.



Flexible repayment schedule fits well with low-income cash flows.



DFS can increase smallholder farmers' income by giving them better access to markets.



TruTrade Africa



TruTrade Africa, a social enterprise, uses a cloud-based digital platform to provide smallholder farmers with a more transparent and efficient market for their crops.

1

TruTrade negotiates a price and quantity of a commodity that a buyer will offer to purchase.



2

TruTrade's platform notifies a network of traders who can accept the terms and collect the crops from smallholders.

TruTrade provides traders with financing so that they can pay farmers "cash on the bag."

3

Traders buy from smallholders based on the terms provided by TruTrade.

They are incentivized to provide the best price possible to farmers. And farmers can see the full costs of intermediation, including the commissions of TruTrade and of the trader.



Conclusion

Conclusion

Digital financial services can play a significant role in advancing international development, across a broad range of sectors.

SUSTAINABLE DEVELOPMENT GOALS



Conclusion

Realizing the full potential of DFS in other sectors requires further effort.

In mature DFS markets...

SUGGESTIONS

EXAMPLES

Encourage innovation beyond proven business models.

Test blended finance models for lower-income segments.

Explore integrating DFS into other value chains.

Test DFS-enabled business models in pharmaceutical value chain.

Support responsible consumer finance models.

Adapt consumer protection principles to PAYGo energy and digital credit.

Support investment in early-stage providers.

Provide funding for seed capital, accelerators, and piloting of innovation.

Conclusion

Realizing the full potential of DFS in other sectors requires further effort. (continued)

Where there is low DFS adoption...

SUGGESTIONS

EXAMPLES

Encourage policy makers to make DFS a priority.

Provide evidence of the link between DFS and other policy objectives.

Convince providers to invest in DFS and promote use cases.

Demonstrate the business opportunity of DFS in utility payments and other sectors.

Build out the basic DFS infrastructure.

Encourage mobile money interoperability.

Help non-DFS providers integrate with DFS providers.

Encourage harmonized, open APIs.

Research continues on...

- Making PAYGo solar an investable asset class by improving the sustainability of the business model and creating a common language of performance metrics for investors and companies.
- Adapting the PAYGo business model for other sectors, e.g., financing income-generating assets (solar mills, motorcycle taxis, etc.).
- Building the case for policy makers to adapt DFS as a means to achieve broader policy objectives in access to water, education, and energy.
- Expanding the understanding of the regional differences in how DFS can affect other sectors by exploring more use cases in Asian and Latin American markets.
- Exploring the role of financial inclusion in furthering development objectives in other sectors, possibly healthcare or housing.



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