



Engaging Social Networks for School Fees  
Payments: Lessons from an experiment in Kenya



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# Engaging Social Networks for School Fees Payments: Lessons from an experiment in Kenya

Flexipay is a blended financing concept, designed to help low-income families meet large financing needs, like school fees. Flexipay enables families to pool resources from their social networks transparently, pay their own bills in a flexible way, and (potentially) tap into advances for urgent payments that exceed liquid savings. This experiment was designed to test whether the concept could be an effective tool in helping families pay secondary school fees.

## The problem

From research including the Financial Diaries, we know that families in Kenya struggle to pay school fees. They are willing to sacrifice for schooling due to the high payoff that education can bring over the longer term, for the child and for the family as a whole. We observe that:

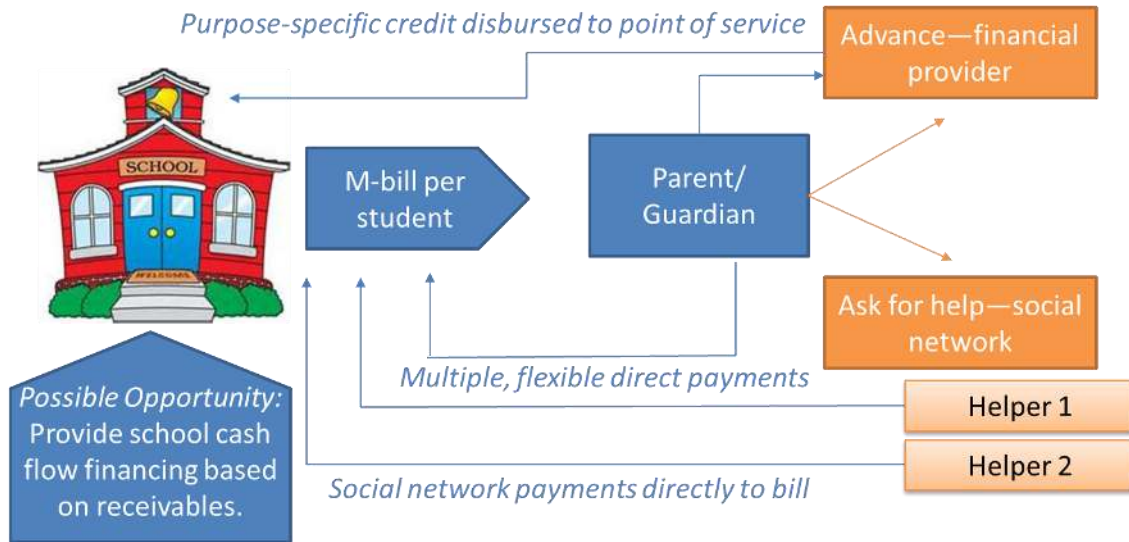
- School fees are expensive for the ordinary Kenyan family, especially at secondary level. Even a low-cost rural school may charge KES 20,000/year per student, in areas where typical families earn KES 6000-7000 per month.
- Parents pay in uneven instalments each term.
- School administrators send students home to collect balances as a means to ensure payment. This can result in extended absences.
- Extended family often helps with school fees, usually by sending money to the caregiver or by making a bank deposit to the school's account.
- Extended family does not receive direct communications from schools regarding fee balances and threats to send students home.

The proposed solution: Provide a service that communicates with all payers (including the extended network, which we call “helpers”) while enabling electronic payments to make payment and accounting easier.

Figure 1: Schematic of the Flexipay concept. For the purpose of this experiment, we introduced only m-billing, digital payments, and social network communications and payments.

# Flexipay:

## Blended financing product at point of service



## The Flexipay experiment

During the 3<sup>rd</sup> term of 2016, BFA worked with a school to study what happened to school fees payments and student absences when the school used some of the key elements of the Flexipay idea. We hypothesized that if 1) all interested parties were aware of each student’s current fees balance, all payments made to the student’s account, and any threats to send that student home *and* 2) those parties could pay easily from anywhere, they would pay faster and pay more. This, then, would keep more students in class and help the school improve payments performance.

The experiment also examined the value proposition for parents and the school, and explored whether there might be a business model for third-party payment or fintech provider to offer the service.

Prior to the experiment, we determined a number of performance indicators:

- Parent uptake and usage levels for the trial service;
- Parent feedback on the solution's value;
- School-administration feedback on value;
- Social-network "helper" feedback on value;
- All-user feedback on user interface and design (to feed into mockup for scaled solution);
- Actual and potential costs (including SMS, money transfer and software) of using such a system;
- Comparative metrics on school payment performance;
- Fees collection using the system compared to same term of previous academic year (Does the solution seem to speed collections?);
- Changes in parent-default levels (Does the solution reduce the number of students with an end-of-term balance outstanding balance? Does it reduce the and overall aggregate balances outstanding at the end of the term?); and
- Changes in student absenteeism due to non-payment (Does the solution improve attendance?).

## Kivani Secondary

**Kivani Secondary** is a mixed-sex day school. It is not a selective school. Students come from the surrounding impoverished community, one that was part of the Kenya Financial Diaries project. Kivani charges about KES 18,000 per year (KES 5,379 in this final term), yet nearly half of its students finish the year with an outstanding balance. To pressure parents to make payments, staff send children home every month. This typically means that only three of every four weeks of school time is actually devoted to instruction. The school administration is devoted to the students and tries to accommodate both students and parents, recognizing that severe poverty—not just liquidity—is often the main barrier to their students' educations.

Most students do have helpers. Often helpers send money to the parents/grandparents, and these funds get diverted to other things. Although prior to this experiment the school did not have electronic accounting or a Paybill number, it had tried a number of things to make collections easier for parents, for example, convincing KCB to open an agency next to the school. Because that agency often lacks float at key payment times, the school ends up with cash and has suffered a number of robberies as a result. A teacher also has an M-PESA agency and helps to some extent. Parents who have funds on M-PESA can withdraw through the teacher's agent number without going to the agency in person. She will then take the cash to a bank agent and bring the school the deposit slip. It's a leakage-prone system, but in this small and dedicated school, it works okay.

Kivani's administration felt strongly that Flexipay could make a difference for students and was eager to work with us to develop a solution.

## What we did

Rather than work with a provider to build an automated system to manage the messaging, payments, and accounting, we wanted to first test our hypotheses at a low cost, managing the back end manually, without a provider-based solution. The intervention was testing simply whether introducing M-PESA Paybill (which enables mobile payments to specific accounts within a school or business) and communicating directly about balances and payments with social network members would improve payment performance.

Because we were managing this process manually, this entailed a number of steps:

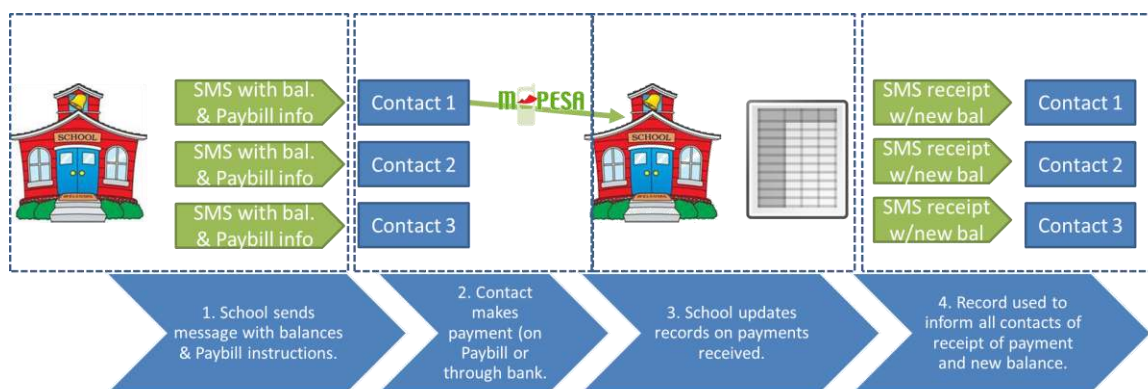
Set up:

1. Helping the school register for a Paybill number;
2. Collecting the names and phone numbers of parents, caregivers, and payment helpers from students;
3. Setting up a database of student accounts with current balances at the start of third term and all of their designated contacts;
4. Setting up a sender ID for the school's bulk SMS messages to be recognized by local providers;

Implementation:

5. Using bulk SMS to inform all parents, caregivers, and payment helpers of starting balances and Paybill instructions;
6. Recording all payments (Paybill, bank payments, and in-kind) in payments register and on a Google spreadsheet;
7. Downloading payments updates daily and using bulk SMS to inform all contacts of updated student accounts that payments had been received;
8. Issuing warning SMSs with current balances to all contacts prior to sending students home.

Figure 2: Schematic of experiment implementation.



We decided to introduce M-PESA Paybill (the most widely used digital payment option) in addition to the school’s existing acceptance of bank deposits (at branches and agents), do the accounting manually and on a Google spreadsheet, and handle the messaging manually as well through daily uploads to a bulk messaging platform, Uwazii. Paybill was an important piece of the implementation, enabling contacts more options for paying fees faster and from anywhere using their mobile phone and entering the student’s admission number and class as an account number. We could provide that data on every message that went out to registered student contacts, so it was clearly visible on their phones.

We initially planned the experiment to cover two schools: Makueni Boys, a high-performing government boarding school, and Kivani Secondary, a government day school in the same county. Due to a student strike, Makueni Boys pulled out just before the experiment began, leaving Kivani Secondary as the only participant. Kivani is fairly large (459 students active in the term of the experiment) and its students’ families, in some ways, face more typical payment challenges than students in the higher-cost and more selective Makueni Boys.

Except for the reduced sample, we followed the methodology outlined in the concept note:

1. **Scoping phase:** Built buy in with schools, signed MOUs, held preliminary meetings with payment providers in the space, conducted focus groups with parents/caregivers, investigated messaging and payment options, collected school data on absences and payments in Term 3 2015, collected contact data from students.

2. **Setup phase:** Helped Kivani get Paybill account, built Google spreadsheet for tracking payments and balances, trained bursar on its use, got SMS account, helped Kivani get SMS sender ID.
3. **Execution:** Bursar received daily payments, updated Google doc. BFA's research associate downloaded spreadsheet at end of day and sent messages to contacts of students whose accounts had been credited. We also sent warning messages as per school requirements.
4. **Analysis:** At end of term, collected data on attendance and reconciled our payment record with bursar records and Paybill statement. Conducted closing focus groups with parents/caregivers. Conducted business-case analysis through conversation with school and payments/FinTech providers.

Kivani school personnel were available and willing to share their data and insights throughout the process.

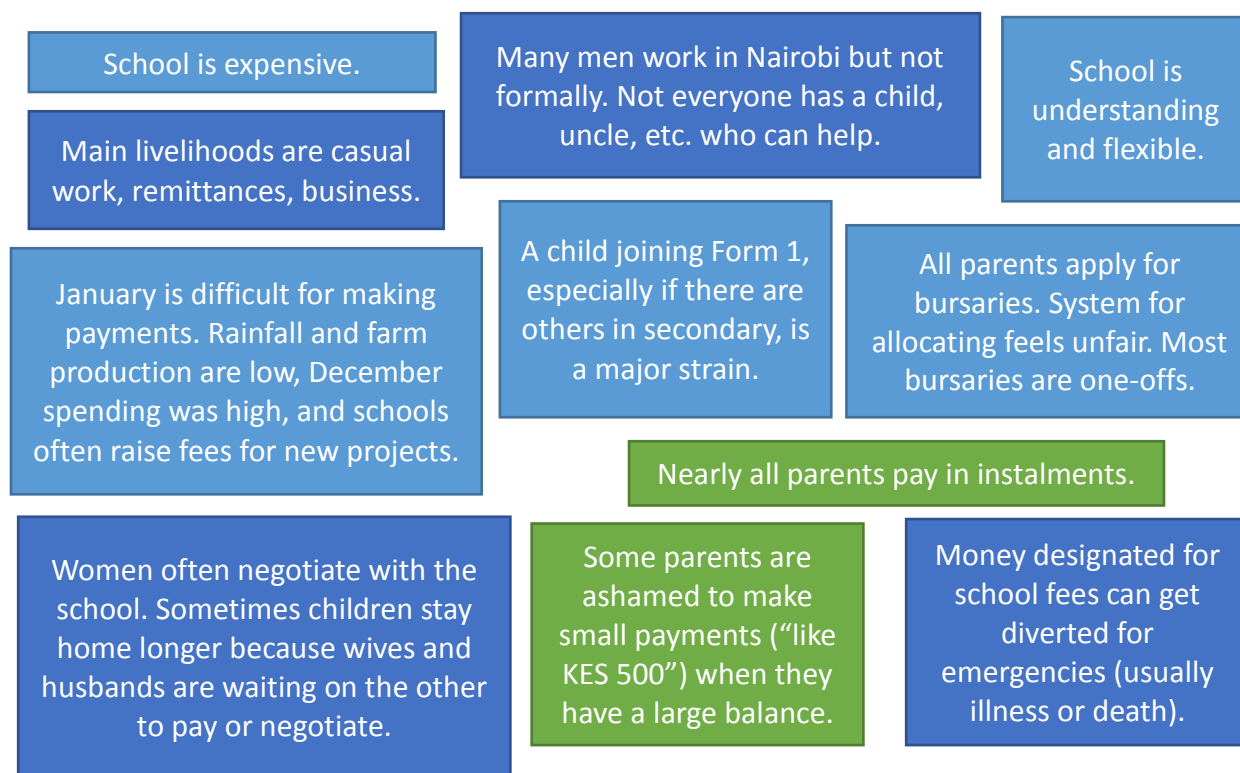
## How it went

### Parents confirmed our understanding of payment challenges.

From focus group discussions before the experiment, we heard the following (which broadly aligned with our understanding of payment problems within this population):



Figure 3: Summary of themes from parent and helper focus group discussions prior to experiment.



## The school sent SMS messages to parents and helpers.

During the implementation phase, we helped the school to set up an SMS messaging system. The school sent out three types of messages to parents and helpers:

Information	Kivani Sec is now using SMS. School opens 31 Aug. Next term fees can be paid via bank deposit or Paybill (755065) a/c no. is adm no. and class. Principal, JB Mbondo STOP20465
Warning	JAMES KYALO's balance at Kivani Sec is 5379. Payment should be made before Fri 2 Sep to avoid being sent home. Principal JB Mbondo STOP20465
Receipt	Kivani Sec has received 1500 for NTHENYA MUTISYA 1N adm:6324. Current bal is 4874. The school also has Paybill 755065. Use class and adm no .as a/c no. Principal.

Figure 4: Categories of messages sent to all registered contacts.

There were a few problems: Sometimes, the bursar would delay entering payments into the spreadsheet for a few days, which meant that some messages that went to parents were inaccurate. Also, on one occasion, the school sent home before the warning message went out. We wanted to give parents a few days of warning by SMS to more rigorously test if that could reduce absences. Another challenge later reported by parents was that our system of downloading payments every evening to send SMS receipts meant that parents and helpers got this information at night when it was difficult to take immediate action. That made it easier to forget about the warning the next morning. These teething problems likely would decrease with usage and experience.

### The school received payments electronically.

During the experiment, Kivani successfully converted to 100% electronic payments, with 52% of payments coming in over paybill and 47% via bank deposits (1% were received in-kind). In the same term of the previous year, 9% of the school's payments had been in cash.

### Reconciling student accounts wasn't always correct.

The school faced some challenges in correctly accounting for payments, mostly due to manual entry of records into five separate ledgers (four of these existing before our arrival). Parents also entered the wrong student numbers and classes, so that the bursars had to go back and correct manually.

## Experiment report card

Indicator	Grade	Comments
Parent uptake and usage levels among those invited to try the service	A	Uptake was high, with 66% of students having at least one M-PESA Paybill payment.
Parent feedback	A	Parents appreciated the convenience of Paybill and wanted more student information via the SMS platform.
School administration feedback	B	<p>The administration liked receiving electronic payments. This gave parents more convenience and eliminated cash handling at the school. They felt the messages were only moderately helpful and would need more time to change parent payment performance.</p> <p>However, the school is unlikely to invest its own funds in an accounting system that would make automated payment and balance messages possible. The school is planning to continue with Paybill and will continue some low-cost bulk SMSs, though without the more complicated payment and balance feedback that was provided under this experiment. The main cost associated with accounting in their current system is the time of the bursar, which is a fixed cost. Reducing his time use was not a priority to the school.</p>

<b>Social network helper feedback</b>	A	Helpers (especially those living far away) liked the service and thought it added credibility to parents' requests for help.
<b>Collections compared to the previous academic year</b>	C	There was no dramatic payment increase after an appeal message went out.
<b>Changes in levels of parent default—Does the solution reduce the number of students with an outstanding balance (and overall aggregate balance outstanding) at the end of the term?</b>	B	The number of students with an end-of-term balance did not decrease, although the total amounts paid by families using the service increased.
<b>Changes in student absenteeism due to non-payment</b>	B	Absences remained high, although use of the Paybill account did seem to reduce the length of absence from school.

We also collected additional metrics, which are incorporated into the rest of the feedback below:

- All-user feedback on user interface and design issues;
- Actual and potential costs;
- Comparative metrics on payment performance.

## What we learned about social network support

445 (of 459) current students registered their contacts (parents and helpers). The typical student had only two contacts, and 27% registered only a single contact. Beyond the registered contacts, there were 67 people never listed as contacts who sent money via Paybill! These contributors could be spouses of contacts, employers or other well-wishers who received forwarded SMSs.

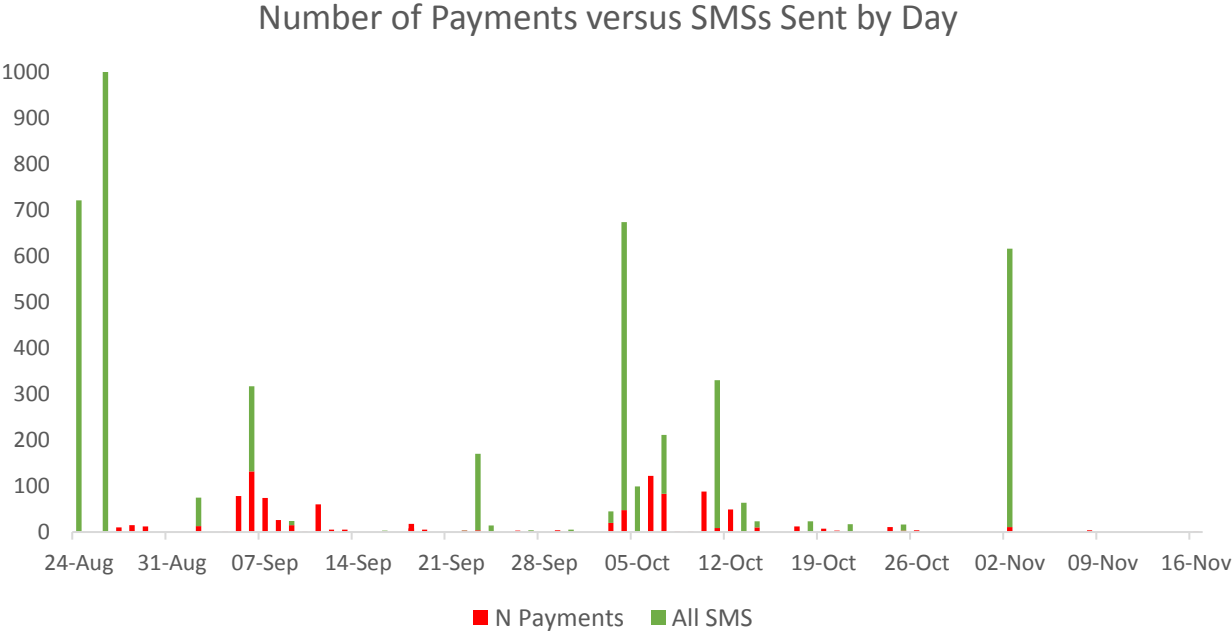
202 registered contacts made at least one Paybill payment. 689 registered contacts never made a Paybill payment. Of these, some may have made a bank deposit. Not all helpers, of course, always help.

On average, during the term students received two payments toward their bills. The amount of payments is highly influenced by the headmaster, who suggests a minimum initial payment as well as the amount needed subsequently for the child to be re-admitted each time students are sent home.

Students who had more frequent payments to the school also paid more in total and reduced their outstanding balances by a larger amount than students with fewer payments. This could be because the Paybill option makes smaller payments easier for parents at any given moment, because of the ease of forwarding SMS messages to helpers, or for other reasons. But this suggests that the school should encourage more small payments rather than emphasize larger minimum payments.

Nonetheless, the SMS messages did not attract massive immediate payments:

Figure 5: Payments don't always align with messages sent.



## What we learned about payments and attendance

There was no discernible overall effect of Flexipay on average absences during this experiment. The average number of days missed did not change when looking across the student body.

Figure 6: Student absences before and after the experiment.

	% days missed 2015 (mean)	% days missed 2016 (mean)	% days missed 2015 (median)	% days missed 2016 (median)
Overall	13%	13%	11%	10%
Form 1		14%		10%
Form 2	12%	14%	8%	13%
Form 3	14%	14%	14%	10%
Form 4	13%	10%	8%	8%

Parents were shocked to hear that the average student misses five days per term, but their response is, "Parents just have to pay."

In fact, we heard in the focus groups that **many caregivers and parents still wait for children to be sent home before paying.** They explained that they wait until the very last minute to pull money out of businesses or put off selling assets as long as possible while hoping to "find" money. Children sent home serve as evidence/exhibits to fathers/well-wishers/employers that fees are needed and money owed is needed urgently.

Parents indicated that the SMS message was also a form of evidence to show helpers and debtors, but it did not have the same galvanizing effect.

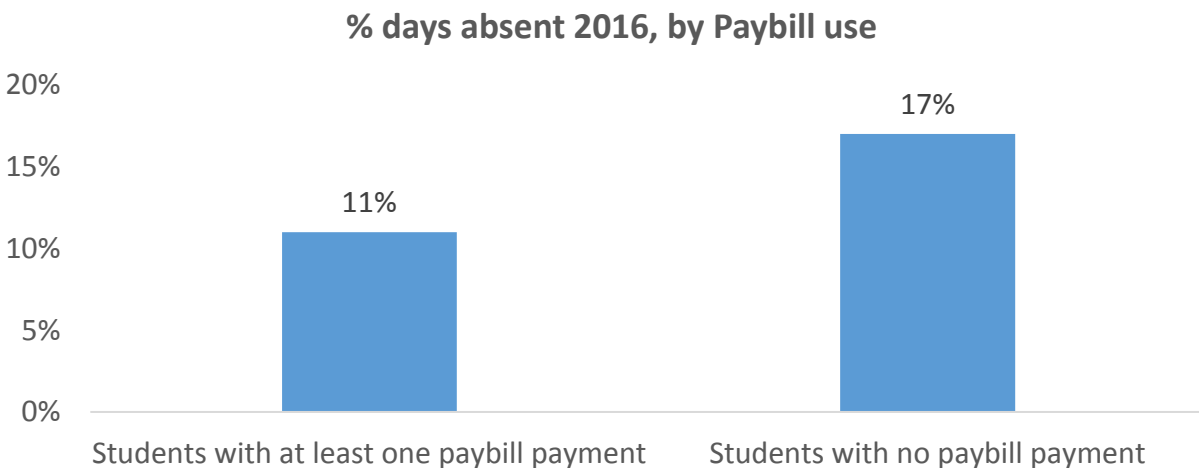
We also learned that parents follow guidance from the school on how much to pay and when. The school indicates dates for installments to be paid and signals how big those instalments should be. This experiment didn't change that. The principal tells parents that they should structure installments a certain way in advance, with larger payments upfront. He sets an informal minimum instalment size to allow students back to class, and parents mostly aim for that minimum. The parents who physically go to school to negotiate an instalment plan with the principal then discuss afterward what the principal allowed as a minimum payment. They use that information to try and bargain for the lowest possible minimum payment to allow their children back into class.

Nonetheless, we do see that, for individual students, using Paybill may reduce the number of days out of school, perhaps because the school receives payment more quickly. Flexipay could be mobilizing the social network faster or just making the payment faster, eliminating the need for the payer to go to a bank or agent.

Parents say: Please also...

- Send messages **more often**.  
"Most of us have a lot of things going on and we forget a message was sent."
- Send messages **earlier in the day**, "so we can act on it before we are tired."
- Send message **on the day children are sent home**.
- Send messages monthly to the primary contact only on **behavior & performance**. Can't rely on children to relay that information.

Figure 7: Students with Paybill payments on their accounts missed fewer days of instruction.



## The business model

### Parents and helpers are willing to use Paybill.

Many parents and helpers are willing to use Paybill, even though it's more expensive than direct deposits to a bank (which are free, except for the expense of travel to the bank to deposit funds). Two-thirds of students attracted at least one Paybill payment, and more than half of all payments were made using Paybill (mainly displacing bank deposits). The sizes of payments made by Paybill were not different from those made by bank.

Figure 8: Volume and value of payments by payment mode.

Mode	Mean Val	Median Val	Count	%
Bursary	5,833	5,000	3	0%
In Kind	2,972	2,618	6	1%
Bank deposit	2,287	2,000	460	47%
Paybill	2,224	2,000	506	52%

The mean revenue to the payment provider (Safaricom) was KES 40 per payment, with a median of KES 33. Payers spent more than KES 20,000 in Paybill fees in the course of the experimental term, indicating an attractive potential market for a payment provider. With approximately 9,000 secondary schools in Kenya, **this is a potential annual market of over KES 500m.**

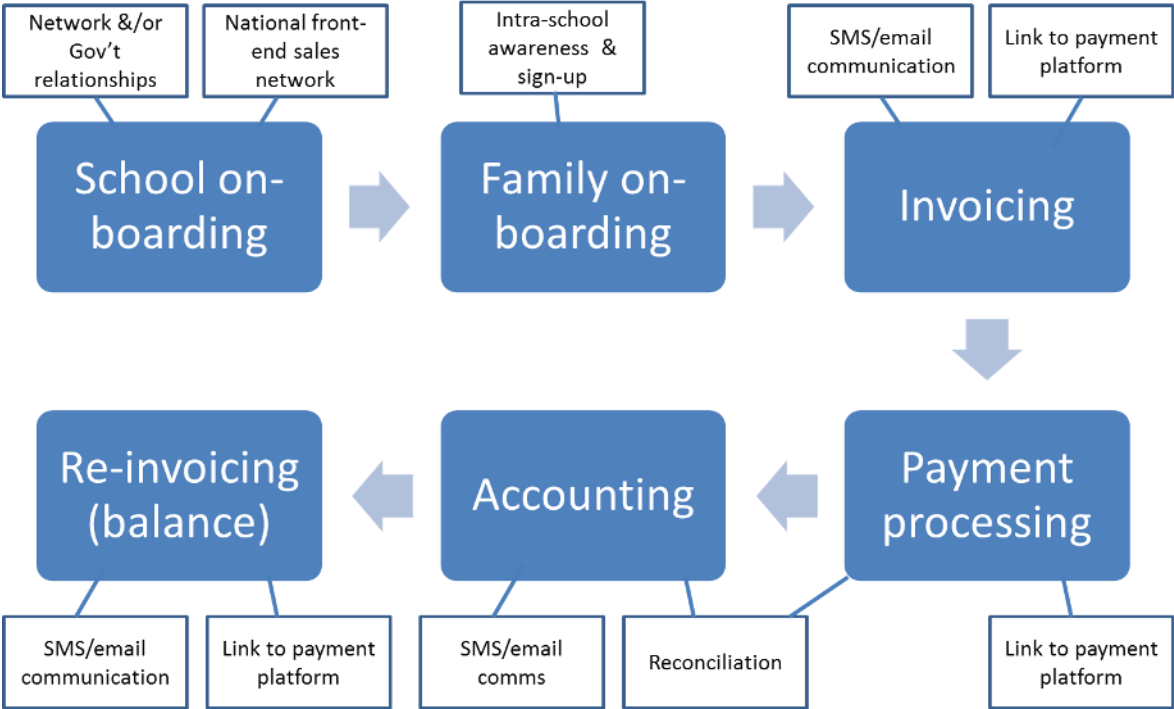
### Onboarding efforts were significant.

BFA ended up spending substantial amounts of time and multiple on-site visits to onboard the school. It took some time for the school to understand and trust the system, seek board approval for process changes, inform parents of changes, and familiarize staff with new systems and processes.



Although Flexipay is fairly simple to understand, it involves number of steps, as shown below. This meant quite a number of manual processes for the purposes of this test, though it could be streamlined for the user (the school) in a full product rollout.

Figure 9: Backend steps in the Flexipay workflow.



For the school, signing up for Paybill was free and produced real and immediate value. It was not necessarily easy, though. There is no way to register online for the service, and the Safaricom sales agents' communication was sub-par. Safaricom did not provide training in how to withdraw funds or access statements, and BFA ended up assisting the school in frequent follow up with the Safaricom sales agent to get the most basic kinds of support and troubleshooting assistance. Safaricom setting up a streamlined registration and support process for schools seems like a clear and easy "win" for schools and the service provider who could quickly recoup even fairly significant acquiring costs. Standalone Paybill services are very easy to use. With the right process, acquiring costs for the payments provider, in this case Safaricom, could be very low.

However, for the school the value proposition for investing beyond Paybill was not so compelling.

Flexipay was about more than just receiving mobile payments. It also included social network messaging. That kind of system and the accounting software needed to automate balance calculations and messages, is a harder sell for low-income schools like Kivani.

Kivani had a one-time cost of KES 8,500 to register a unique sender ID across all networks for its bulk SMS service. The school's SMS cost was about KES 13 per student per term (slightly more if the school were to increase informational messaging). The school can pretty easily manage those recurrent costs, and is likely to continue using bulk SMS to communicate with parents and helpers.

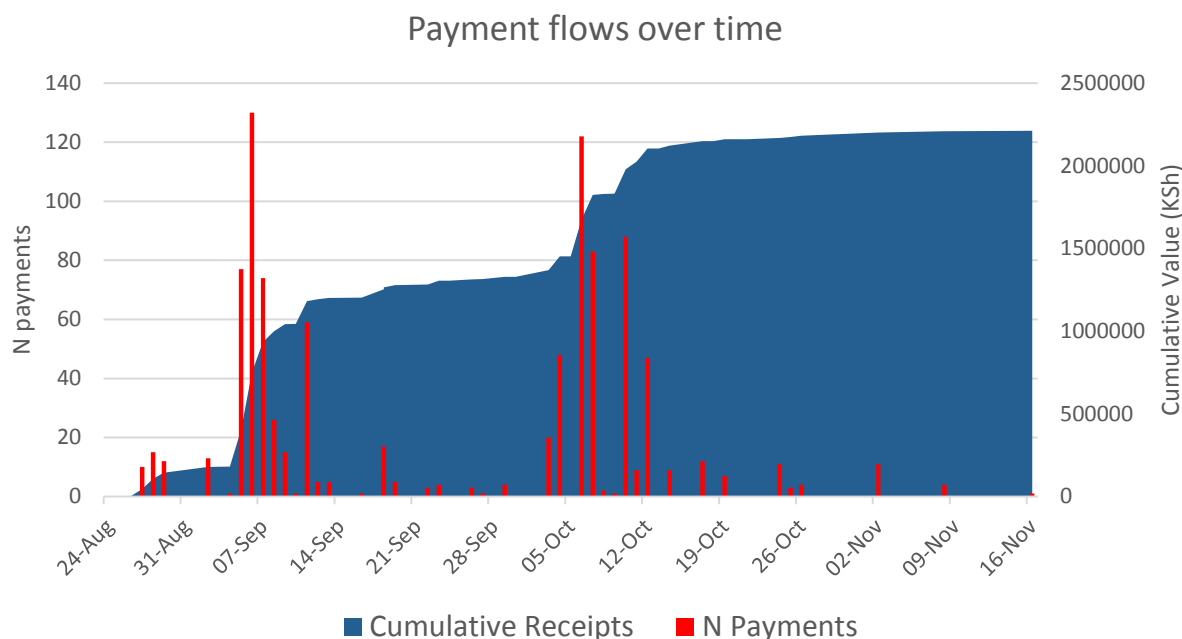
But, they are much less likely to make an investment—fixed or recurring—in an accounting system linked to those SMSs, which would automate the kinds of receipts and balance updates that we were sending out manually in this experiment. The administration feels that its manual accounting system is adequate and that the bursar has sufficient time to make multiple entries. Errors eventually get corrected, and they do not necessarily realize any financial benefit by saving the bursar time. A big change to relying on electronic systems for accounting can be intimidating in environments where electricity and data connectivity are intermittent (as they were in Kivani).

Of course, it's possible other school administrators (or county/ministry level officials) will see higher value in the comprehensive Flexipay system, especially schools with existing accounting systems. Or, a payments provider might consider offering the accounting package as a means of encouraging goodwill, stickiness, and greater usage of electronic payments for fees.

**The school didn't see much overall change to their finances.**

During the Flexipay trial, Kivani was able to mobilize a fairly large amount of money early in the term. The principal believes this is consistent with other years. Flexipay did not noticeably increase liquidity for the school.

Figure 10: School payment receipts over the course of the term.



Interestingly, the school wasn't actually short of cash: More than KES 459,000 remained in the Paybill account at the end of the term. Sending children home from school appears to be not a response to budget constraints so much as a tested and accepted method of forcing eventual payment. The school could afford to push some payments to vendors and draw on funds from its development account to meet cash flow needs without immediately needing to draw on these Paybill funds.

Although the school's ending balances in 2015 and 2016 did not differ, the school did, on average, receive KES 2000 more per student during the Flexipay term compared with the same term in the previous year. This may be in part thanks to the new mobile payment option, since students with three or more Paybill payments had a mean increase of more than KES 3000 this year.

## Value proposition for a payments provider

School fees payments represent a potentially large opportunity of as much as KES 500m per year, with an ongoing payment flow. However, the per-school costs of the set-up of a more

comprehensive solution involving accounting and messaging may be considerable, including the cost of in-person training and on-boarding at the school. If schools are unwilling to pay for the basic IT systems, then interested providers may also have to bear these costs.

As part of this project, we interviewed a wide range of service providers who might be able to play a role in implementing this kind of a solution. Below is an overview of the possible providers of services and how Flexipay may be suitable for them:

	School	MNO	Fintech company	Payments aggregator	Edutech company	Bank
School on-boarding (sales & admin)		Not willing to sell to schools 1 by 1 but can use mass marketing	No capacity to sell schools 1 by 1	Possible, but not strong here	√ (already work with schools)	√ (schools already have bank accounts)
Family on-boarding (admin)	√ Strongest	Could potentially onboard families through automated messages				
Bulk SMS		√ Strongest	√	√	√	√
School-level accounting		Partnerships	Some are already providing	Some are already providing		
Payment acceptance		√ in effect	√	√	√	Accepting payments but mostly cash at bank branches
Customer service		√		Possible but service records not great on small accounts		√

Different kinds of providers have strengths in different areas, but none of them seem poised today to alone cover all the ground necessary in a seamless Flexipay solution:

1. **Acquiring:** Registering and training schools
2. **Payments:** Enabling digital account-level payments
3. **Software:** Allowing payment reconciliation against student accounts & issuing messages to student contacts reflecting accurate balances & receipts

And furthermore, the business model appears to indicate payments being the most likely and important revenue stream, which makes it less attractive for a fintech player to invest in this kind of product. It seems the most viable option for an integrated solution would be driven by a payments player—a mobile network or bank—partnering with others for the acquiring and software elements. Today, banks have the widest existing coverage of schools, potentially reducing their acquiring costs.

Is there an opportunity for banks to partner with technology providers to offer schools a comprehensive solution? Alternatively, would a major player like an MNO be willing to invest in the onboarding costs, so as to capture the large payment flow?

## How to get over the hurdle of onboarding schools?

Creating a seamless technology solution is a one-time investment that a payments provider may find worthwhile. However, it seems likely that for the foreseeable future, there will have to be a face-to-face process of onboarding the schools – both introducing them to the system and also training and supporting the bursars to use it. In order to address this onboarding cost we have considered a few options:

- The Ministry of Education to take the lead via training for bursars and headteachers. The Ministry would need to be convinced of the benefits, including better financial records and better attendance.
- County Ministries of Education, for the same reasons. They may have closer relationships with the schools than the national government.
- Headteacher associations to promote the system at their meetings.

- Partnerships with organizations that already have relationships with schools, including textbook providers.
- Agent-based acquiring/selling models.

The further the selling process is removed from the provider, the more important it is that the system itself is extremely easy and self-explanatory, reducing the cost of training and support.

Because parents and helpers liked the system, we are optimistic that they will be able to be onboarded through an automatic SMS or USSD menu process, but that can only take place after the school has updated electronic—and online—records.

## Summary of stakeholder value proposition

Stakeholder	Benefits	Willingness to pay
Parents & helpers	<ul style="list-style-type: none"> <li>✓ Payment convenience</li> <li>✓ Better information (via SMS communications)</li> <li>✓ Financial support (from social network)</li> </ul>	Pilot shows actual payment of Paybill fees, = KES 20,000 approximately in one term
School	<ul style="list-style-type: none"> <li>✓ Better collections</li> <li>✓ Staff time savings</li> <li>✓ More accuracy in recordkeeping (less cash, less manual)</li> <li>✓ Better attendance</li> <li>✓ Potentially more engaged and connected parents</li> </ul>	Kivani indicates not much willingness to pay for software, but may not be representative of all schools.
Education Ministry	<ul style="list-style-type: none"> <li>✓ Better attendance</li> <li>✓ More accuracy (records)</li> <li>✓ Better aggregate information</li> </ul>	Unclear/unknown
Service providers	<ul style="list-style-type: none"> <li>✓ Cross-sell core business</li> <li>✓ New revenue from Flexipay proposition</li> </ul>	May be willingness to forego profit on Flexipay itself as long as it yields cross-sell benefits

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