



Understanding the East African Aggregator
Landscape

Kenya | Rwanda | Tanzania | Uganda

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Glossary

A2A	Account-to-account	A direct transfer of funds made from a customer bank account to a mobile money account and vice-versa. This transaction typically requires a commercial agreement and technical integration between the bank and the mobile money provider to allow direct account-to-account (A2A) transfers.
API	Application Program Interface	APIs are a set of software requirements that govern how one application speaks to another. APIs are what make it possible to share information between programs.
CICO	Cash-In and Cash-Out	Cash-in (CI) is the process by which a customer credits his account with cash. This is usually via an agent who takes the cash and credits the customer's mobile money account with the same amount of e-money. Cash-out (CO) is the process by which a customer deducts cash from his mobile money account. This is usually via an agent who gives the customer cash in exchange for a transfer of e-money from the customer's mobile money account.
DFS	Digital Financial Services	This presentation defines DFS broadly to include the full range of products (including digital transfers, payments, stored value, savings, insurance, credit and more), channels outside of bank branches (such as mobile phones and ATMs), and providers including mobile network operators (MNOs), banks, nonbank financial institutions and others.
MNO	Mobile Network Operator	A company that has a government-issued license to provide telecommunications services through mobile devices.
M-wallets	Mobile money wallets	Also referred to as e-wallets or digital wallets, these are money accounts which allow stored value and are accessed through the mobile phone.
PIP	Payment Instrument Provider	Providers like banks, mobile network operators or even third parties that issue payment instruments like credit and debit cards, electronic fund transfer, direct debits, etc. through which customers conduct transactions between accounts.
POS	Point of Sale	A retail location where payments are made for goods or services. A "POS device" denotes a specialized device which is used to accept the payment, e.g. a card reader.
SaaS	Software as a Service	Software as a service software licensing and delivery model in which software is licensed on a subscription basis and is centrally hosted. It is sometimes referred to as "on-demand software".
VAS	Value Added Service	A popular telecommunications industry terminology for non-core services.

What are aggregators and why do they matter?

What are aggregators?

Aggregators can be thought of as the glue that helps many parts of the digital financial services (DFS) ecosystem to work together.

They allow **Payment Instrument Providers (PIPs)** – like Mobile Network Operators (MNOs) offering mobile money services or banks offering mobile banking - to easily **integrate** with entities that want to send money to or receive money from end customers. These entities can be utility companies who want to receive payments, businesses who want to pay salaries or donors who want to pay recipients, for example.

Why do they matter?

Aggregators enable the seamless collection, disbursement and circulation of digital payments across multiple payment providers. They mostly work in the background, and millions of transactions in East Africa pass through them everyday—usually without customers even being aware of them.



About this deck

CGAP conducted a landscape research of aggregators to understand:

- The various roles aggregators play and create a framework to categorize them;
- The development of the aggregator industry;
- The key levers of the business model, particularly pricing structures and commission fee splits;
- The value add of aggregators to the DFS ecosystem and their challenges;
- The potential future of the aggregation industry.

Methodology:

- Primary Research: 31 aggregators were identified across the 4 countries. A total of 23 primary interviews were conducted.
- Secondary Research: There is limited information on aggregators. A list of secondary sources have been highlighted in the appendix.

Methodology



Please note that all currency in this presentation is in USD.

Key Messages (1 of 2)

Aggregators are difficult to define and confusing to categorize.

Mention aggregators in East Africa and you will get a variety of definitions ranging from companies who recruit merchants to companies who run switches to companies who are building out their own agent networks. There are many variations even amongst the payment aggregators (focus of this study) with respect to market positioning, services offered and engagement with the end customer. In this deck, we've developed a framework to try and categorize the main types of aggregators but there is a lot of overlap and distinctions within the categories.

Most aggregators started as tech companies, saw a gap within the DFS ecosystem, and seized it.

Most aggregators originated as IT companies and Value Added Services (VAS) providers to banks and Mobile Network Operators (MNOs). Often, MNOs were the ones to approach these companies as they knew they needed to expand use cases for mobile wallets, yet faced operational and technical challenges in connecting to third parties. Thus, aggregators have played a key role in developing the DFS ecosystem in its early years.

Key Messages (2 of 2)

The business model is dependent on significant transaction volumes and bill pay is the most lucrative aggregation service so far.

The aggregation business requires significant up-front investment but revenue is usually received on a per transaction basis. Thus, aggregators require large volumes in order to break-even. So far, bill pay is the most lucrative aggregation service. Aggregators also see high potential in account-to-account (A2A) i.e. bank-to-wallet services. Although some aggregators have reached very large scale* most are still struggling to achieve profitability.

The future of the aggregation business is unclear and aggregators are responding by diversifying in different ways.

As the DFS sector in East Africa matures, MNOs have increased their technical ability to connect directly to a variety of third parties, reducing their dependence on aggregators. They have improved their application program interfaces (API) and many are working towards fully open APIs. The role for aggregators in the future is unclear. Some aggregators are responding by improving the customer service element: their ability to do reconciliations quickly, respond to customer complaints and questions and deliver other VAS. Other aggregators are moving towards front-end services to have direct relationships with the end customer and developing their own agent or merchant networks.

* According to Selcom, an aggregator in Tanzania, nearly 75% of electricity payments in the country pass through their system.

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I.	About Aggregators
II.	Development of Aggregator Industry
III.	Aggregator Business Model
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Defining Aggregators

- Aggregators are entities that act as the conduit between payment instrument providers (such as mobile money providers and banks) and third parties.
- They enable the processing and funneling of payments across multiple mobile network operators, banks and third parties through integration.
- They also provide crucial value added services like notification of successful payments and reconciliation.
- **Integration** (connecting the systems of payment instrument providers to third party systems) and **value added services** are the two key common service identifiers of an aggregator.

Integration: At any given point, aggregators are integrating at least 3 types of actors.



The Payer

One who pays. This can be an individual end customer (e.g., who wants to pay a bill or buy goods at a merchant) or a donor or government agency.



The Payee

One to whom the payment is made. This can be businesses (utility payments), governments (tax), or recipients (welfare), for example.



The Payment Instrument Provider

Issuer of the payment instrument. e.g. mobile money providers such as MNOs as well as banks who have mobile banking apps.

Types of payment integrations facilitated by aggregators

1. One to One

One payee and one type of payment instrument



2. One to Many

One payee and multiple types of payment instruments



Example 1: One to One integration

The remote payment of electricity bills by end customers (payer) to one electricity company (payee) via mobile money (one type of payment instrument).

In this example, an aggregator would integrate the backend of the electricity company with mobile money payment instrument providers like Airtel Money and MTN Mobile Money.

Example 2: One to Many integration

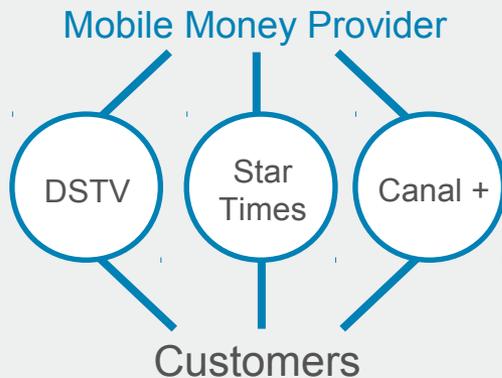
The remote payment of electricity bills by end customers (payer) to one electricity company (payee) via mobile money, debit or credit cards, mobile banking or electronic transfer (multiple payment instruments).

Here an aggregator would integrate the backend of the electricity company with the backend of mobile money providers as well as banks to facilitate these payments.

The aggregator advantage

Two examples of what it might be like to integrate bill payments for multiple TV channel partners as a mobile money provider.

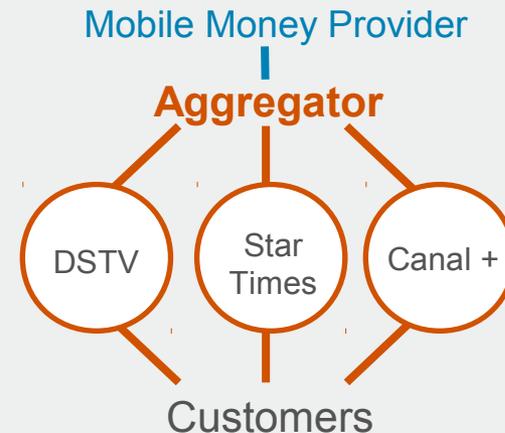
Without an Aggregator



Without an aggregator, each integration to an entertainment company could:

- Cost between \$10K to \$30K per integration, depending on the skill set required.
- Take 4-6 months.
- Require investments in customer support for bill pay queries.
- Require investments in troubleshooting of technical challenges and reconciliation of payments.

With an Aggregator



With an aggregator, bill pay aggregation would:

- Not require upfront investments from the mobile money provider.
- Not require the mobile money provider to manage reconciliations, payment disputes or customer support.
- By using an aggregator, the mobile money provider has to manage only one integration into its system.

Payment Aggregators

There are several types of aggregators but payment aggregators dominate the aggregator landscape and form the focus of this study*.

Payment aggregators facilitate the seamless flow of payments between payers and payees across multiple payment instrument providers. Payment types facilitated by them include bill payments, bulk disbursements and collections.

Examples of VAS that payment aggregators provide include bill pay receipts, notifications of bulk pay, real time validation of account and mobile numbers, training of third party staff, reconciliation of payments, and statement of payment transactions.

*For example, merchant aggregators enable retail points to allow customers to buy goods and services via one or multiple payment instruments. An example of this would be Selcom in Tanzania. Selcom is both a payment and merchant aggregator. While Selcom is a big player in Tanzania, there are a few successful examples of other merchant aggregators in the region.

Aggregation Services:

Back-end payment aggregation(1 of 3)

Most payment aggregation services are back-end. They don't directly engage with the end customer. Instead, the aggregator pushes funds to or pulls funds from a customer's wallet via the customer's payment instrument provider and integrates with third parties that a customer has a relationship with. In most cases the end customer does not realize an aggregator is part of the transaction at all. Examples of aggregators who are back-end include Cellulant (in Kenya) and Pegasus (in Uganda).

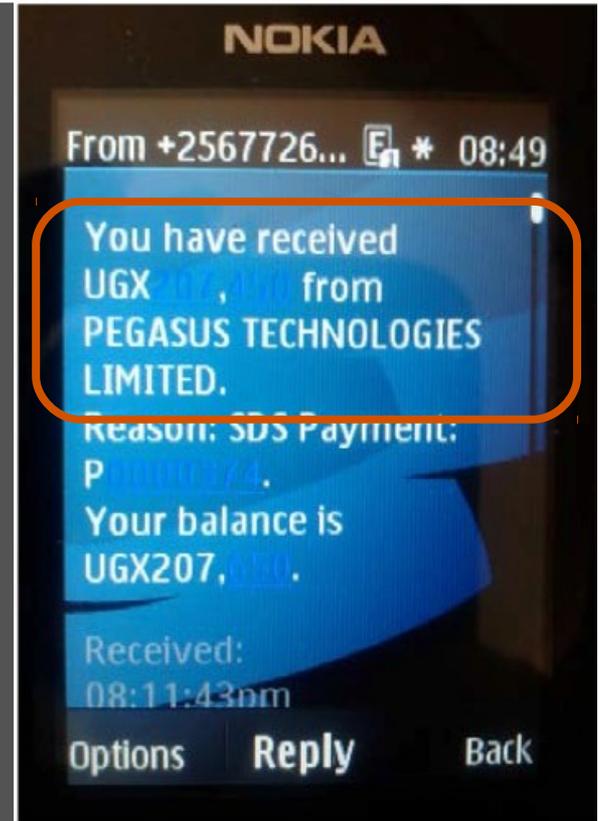
Example of a back-end payment aggregator flow:



Aggregator branding and visibility in back-end aggregation services

The very nature of the back-end transaction process implies that the customer is unaware of the presence of an intermediary. However there are some exceptions where aggregators engage in notification based branding.

Pegasus is a backend aggregator and does bulk disbursements for a USAID project in Uganda. As seen in the image, the SMS notification to beneficiaries is branded as **'money received from Pegasus Technologies Limited'**.



Aggregation Services: Front-end payment aggregation (2 of 3)

- Although most aggregator services are back-end, some aggregators also engage directly with the end customer. This is becoming increasingly common as aggregators want to establish their own brand presence and move into areas like merchant payments.
- This front-end touchpoint could be through any consumer-facing interface such as an app, aggregator ATM, or aggregator agent.
- Unlike back-end transactions, in front-end aggregation customers have the additional option of using cash at the point of transaction instead of a wallet.
- Examples of aggregators who have front-end presence include Selcom Wireless in Tanzania and Pivot in Rwanda.
- At Selcom point-of-sale (POS) terminals (pictured on right), customers can buy airtime, pay utility bills, cash-in and cash-out (CICO) of mobile wallets, buy goods in stores and pay for tickets (e.g., bus tickets).



Example of a front-end payment aggregator flow:



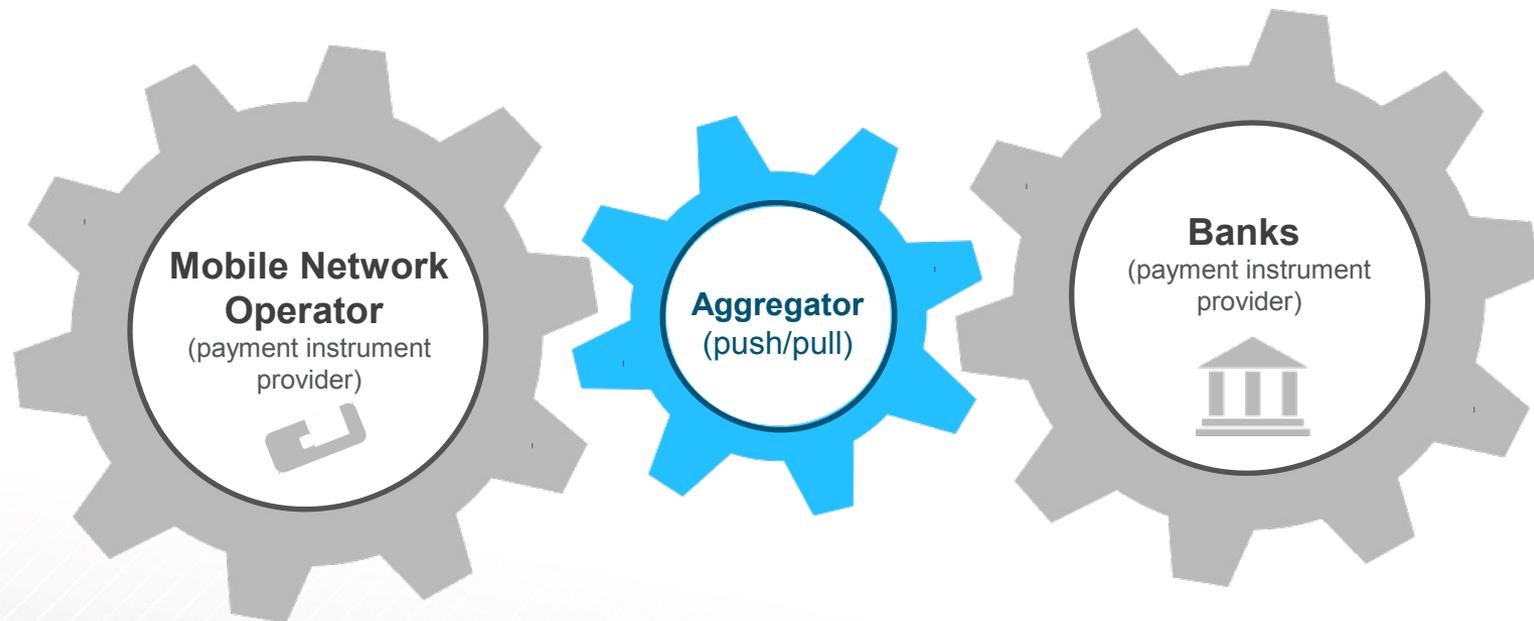
Examples of back-end and front-end payment aggregation services

Type of aggregation	Service	Examples
Back-end	Remote bill pay	Electricity, Cable TV payments
	Bulk Disbursements	Salary, donor and/or government welfare payments
	Bulk Collections	Taxes, parking tickets, or other types of person to government fees
	Account-to-Account push/pull	Bank to m-wallet and m-wallet to bank push/pull integration
Front-end	Bill pay via aggregator interface	Facilitated via an agent, POS device, ATM or an aggregator app
	Cash-in, cash-out, airtime or pay for goods and services	Facilitated via an agent, POS device, ATM or an aggregator app

Aggregation Services: Payment Instrument Aggregation (3 of 3)

Integration of different end customer Payment Instrument Providers

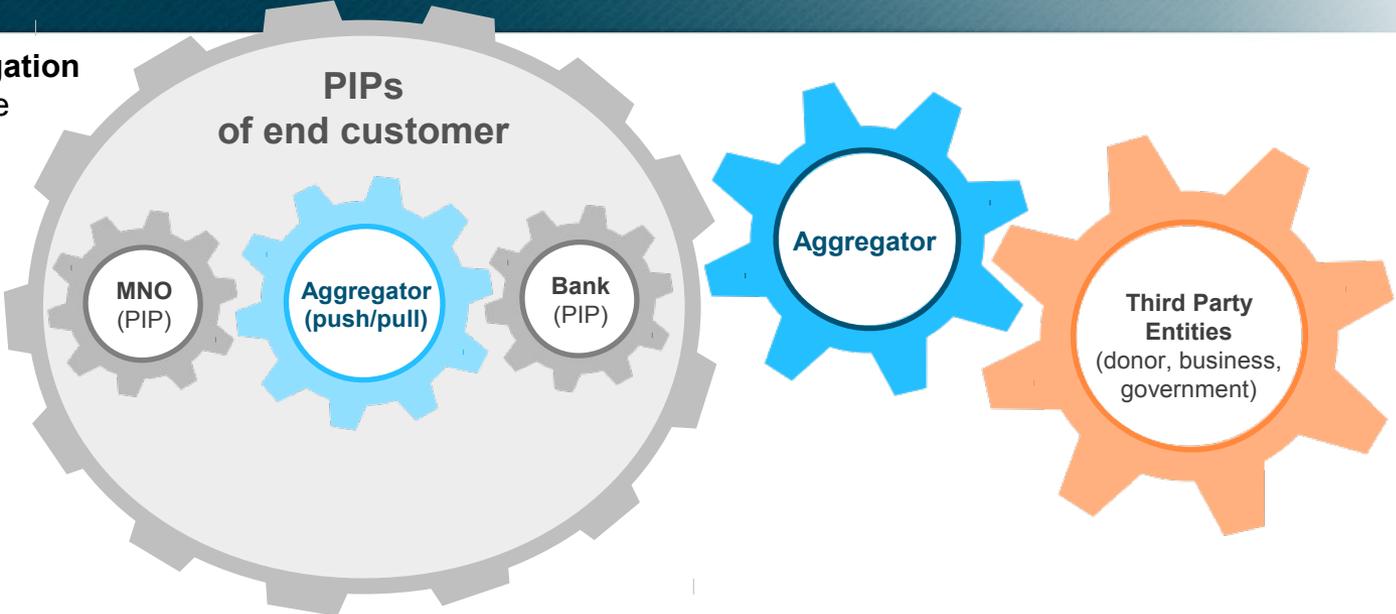
Aggregators also provide A2A integration between mobile wallets and bank accounts, enabling customers to push or pull funds to or from either account.



Aggregation Services: A comprehensive picture

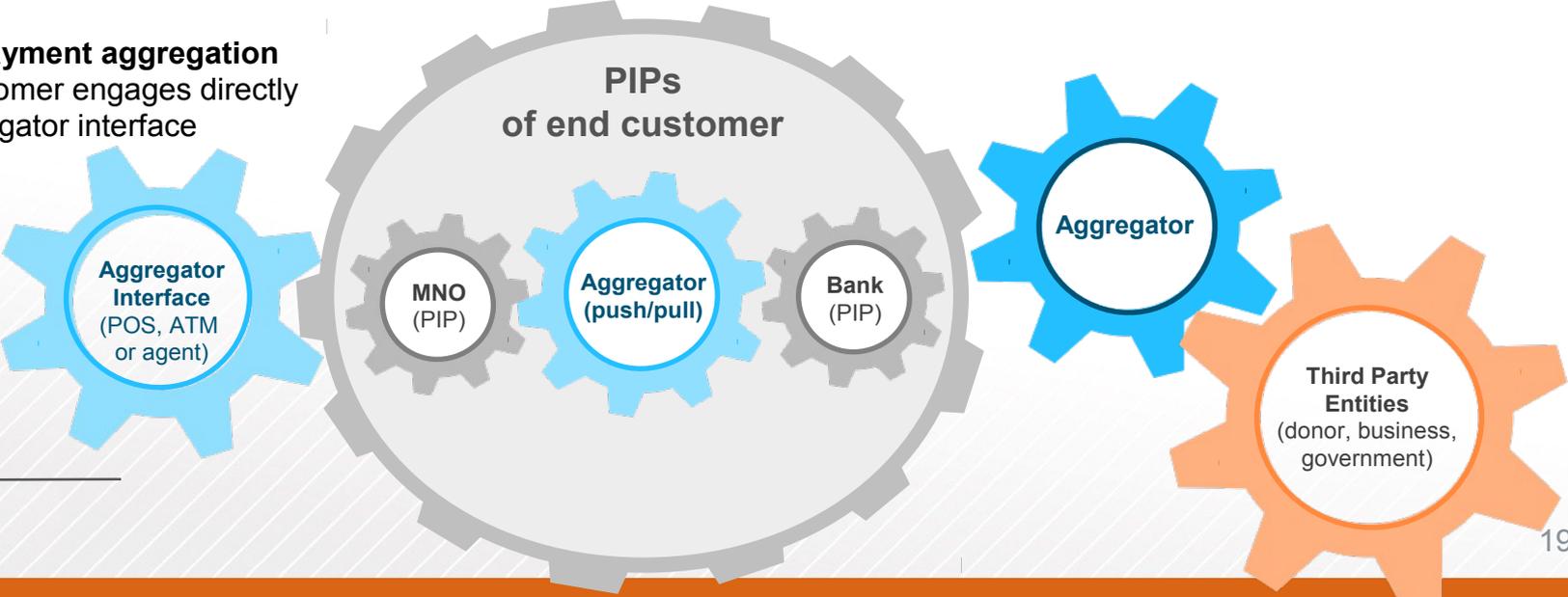
Back-end payment aggregation

Aggregator does not engage directly with end customer



Front-end payment aggregation

The end customer engages directly with an aggregator interface



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Aggregator roots trace back to the Telco or Banking Industry

Most aggregators began as one or more of the following:

- Airtime resellers and VAS operators for MNOs, e.g. selling caller tunes.
- IT companies that provided back-end banking infrastructure, e.g. core banking systems, database management, billing systems, and more.
- Switch Operators enabling transaction processing across banks.

As the mobile money industry was in its infancy, aggregators enabled MNOs to offer enhanced transaction types despite basic platform capabilities.

- MNOs were looking for mobile money uses beyond person-to-person (P2P) payments that would increase wallet use.
- Simultaneously, third parties (e.g., utility companies) were keen to offer customers easy payment channels to improve collections.
- However, MNOs lacked the operational and technical capability to integrate into multiple third parties, giving rise to an aggregator industry.
- In some countries, including Uganda, MNOs directly approached these tech/VAS companies to fill this gap between third parties and mobile money operators.

MNO & third party limitations provided the right environment for aggregator growth

- 1. The MNO challenge:** Integration is a customization heavy business. Mobile money platform providers like Obopay and Comviva, capable of providing integration, were:
 - Not locally based;
 - Had longer turn-around times for small technical patches; and
 - Cost-prohibitive for MNOs.
- 2. The Third Party challenge:** Operators were not interoperable. Billers and other third parties were interested in collecting or disbursing payments across all networks.

	Technical Limitations	Operational Limitations
MNO	<ul style="list-style-type: none">• Rigid platforms with little customization ability.• Limited ability of MNO platforms to accept bulk payment requests and distribute bulk payments.• MNOs unwilling to open APIs to multiple businesses.	<ul style="list-style-type: none">• Limited human and operational capacity to test and certify multiple businesses that want to plug into their systems.• Lack of customer support needed to enable seamless third party integration.• Limited third party trainings on how to use MNO platforms.
Third Party	<ul style="list-style-type: none">• Very few third party systems have the in-house technical capability that permits heavy customization, data base management and integration into multiple MNO platforms. Each MNO integration could take up to 4-6 months.	<ul style="list-style-type: none">• Integration across multiple MNOs is both time and resource (human, capital) intensive.• Third parties do not want to invest in 24/7 support centers to solve challenges faced by end customers.

Scale of aggregator services

- Over the past years, the size and scale of aggregators across the region has grown. Below are examples of two aggregators that show the capacity of their platforms and the volume of transactions flowing through them.
- However, few aggregators have reached this size and given the revenue split structures in the market, even fewer find these service offerings to be profitable on their own.

Example 1:

Electricity payments facilitated by Pegasus in Uganda

200K

electricity payment transaction volume per month

\$10 million

Total value of pass-through payments per month

Example 2:

A2A transactions facilitated by Cellulant in Kenya

14

of banks with which Cellulant is integrated

\$70 million

Total value of pass-through A2A transactions per month

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Integration types and aggregator pricing models

Third parties can connect to a payment instrument provider via an aggregator or directly without an aggregator. As discussed previously, most PIPs connect via an aggregator.

Third parties that choose to connect via an aggregator can choose from either of the two aggregator pricing structures.

1

Software as a Service (SaaS) model: Charges are on a per transaction basis. This is the most commonly followed model among payment aggregators in East Africa and informs this study and section.

2

License model: Purchase of an annual license with an aggregator for unlimited transactions.

Aggregator fees are typically split between 2-3 parties

- In a SaaS model, aggregators charge for their services on a per transaction basis. The fee can be paid by the third party or the end customer.
- The aggregator service fee is split between that aggregator, the payment instrument provider of the payer and sometimes even the payee.
- Donor to recipient bulk disbursements or salary disbursements are transaction types where third parties absorb aggregation costs while remote bill pay fees are typically passed on to the end customer.

- **Example: Electricity payments via mobile money:** Aggregator fee is paid by end customer and split between the aggregator and the mobile money provider.
- **Example: Business paying employee salaries via mobile money:** Aggregator fee is paid by business and split between aggregator and mobile money provider. Money is disbursed from the company's bank account to the mobile wallets of its employees. Since money is moving out of a bank account, the bank also charges the business a transaction fee.
- **Example: Donor paying recipients via mobile money:** Aggregator fee is paid by donor and split between aggregator and mobile money provider.

Aggregator SaaS pricing models vary across services

Flat Fee Pricing per transaction

- This is the most common pricing structure for aggregator services in East Africa.
- Typical aggregator fees range from \$0.20 to \$1.0 per transaction.
- Aggregator services that usually follow this model are bulk payments across the region. This could be bulk collections (person-to-government) or bulk disbursements (donor-to-person).

Revenue Share Pricing (% per transaction)

- This is a sliding scale and ranges anywhere from 1% to 5% of total fee charged per transaction, depending on the type of service. Most bill pay transactions are charged a total of 1% to 3%. The transaction fees for e-commerce and international remittances, however, are much higher and closer to 5%.
- Aggregators typically get anywhere between 0.5% up to 1.5% per transaction after the fee split with the MNO and / or the bank.
- Examples include retail payments, betting and funeral services, e-commerce and online remittances.

Tiered Pricing

- This is common for CICO services and A2A services.

The above models are only indicative and pricing structures are highly contextual based on MNO-aggregator negotiations, expected volumes and the country context.

Typical aggregator fee ranges and splits

**\$0.20
to \$1.00**

Typical fee range per transaction in case of a flat fee pricing structure.

1% to 3%

The typical fee range charged per transaction by MNOs.

.5% to 1.5%

Typical fee range actually earned by the aggregator per transaction.

60:40

A typical MNO-aggregator fee split, in a two party transaction*.

< 30%

Typical fee split that an aggregator makes in a three-party transaction, i.e. MNOs and banks take the major cut, leaving aggregators with less than 30%.

* Note: As mentioned earlier, this is contextual. The split here is only indicative.

The aggregator business model is opex* heavy, and break-even is dependent on high transaction volumes

The examples below give a sense of how dependent the aggregation business is on volumes.

Cost

- Integrating a third party to a payment instrument provider, say a bank or MNO, costs at least \$15,000. The integration could cost more depending on the level of customization required by the third party and the state of the third party's existing systems.
- Apart from the upfront integration costs, aggregators also provide VAS like receipts, notifications, customer resolution, technical upgrades and maintenance.

Revenue

Example 1: Let's take the example of bulk disbursements made by a donor to its recipients. The volume of payments in this category and the frequency of payments are typically low.

- A hypothetical donor makes 8000 bulk payments from its bank account to the mobile wallets of its recipients through an aggregator. If we assume the donor pays \$0.50 per transaction, and the MNO and the aggregator have a 60:40 fee split, the aggregator earns \$0.20 per transaction or \$1600 per bulk pay-out**. Depending on the number of pay-outs, the aggregator could recoup the upfront investment within a year (e.g., if these are monthly pay-outs) or it could take longer.
- Note: If recipients cash out, they also pay the MNO a cash-out fee and the MNO earns from both the split and the cash-out fee.

* Opex = Operational Expenditure

**See, [Digitizing Payments for USAID beneficiaries](#): A Vital Wave report on how the pay out process works, typical transaction fees, etc.²⁹

The business aggregator model (contd.)

Revenue

Example 2: Now let's take the example of an aggregator integrating a payment instrument provider to a utility company.

- Utility payments typically have huge volumes and a higher frequency of payments.
- Based on the numbers provided by an aggregator interviewed during this study, let's assume the monthly volumes for this aggregation to be 1.2 million transactions per month in a given country.
- If we assume a high-end revenue scenario, where the aggregator receives \$0.10 per transaction after a fee split with the MNO, the aggregator gains \$120,000 in revenues within the first month, recouping the initial investment of \$15K.
- If we take an extremely conservative scenario of only \$0.01 per transaction, paid to the aggregator post the fee split with the MNO, the aggregator still earns \$12,000 the first month or 80% of the upfront investment.
- Thus, utility payments that come with high volumes and regular frequency are lucrative for aggregators.**

Note: The operational processes and technical requirements for bulk disbursements are different from bulk collections. Bulk disbursements, say donor-to-recipient payments, are typically customization heavy. Outward moving payments come with various levels of controls, adding to the cost per transaction. Moreover, the donor payment volumes are too low and relatively infrequent compared utility bill pay to offset the cost per transaction. Hence, in the above examples, the cost / transaction is higher for bulk disbursements than utility payments.

Bill pay and Account to Account aggregation services are currently most lucrative



Bill Pay is the most lucrative

aggregation service: Bill pay services for utilities, entertainment, and even betting companies come with big and established volumes with the potential to increase Average Revenue Per User (ARPU) over time. Most aggregators across the region, even if already offering bill pay in one sector, are constantly looking for other sectors to integrate and offer bill pay. Companies are drawn to aggregators who are already doing bill pay as it implies they have the technical and human capacity to handle large volumes.



Account to Account services:

Aggregators are optimistic of the potential of bank to mobile wallet and mobile wallet to bank services in terms of uptake and profitability. Aggregators hope to earn significant revenues per user through this service. Both banks and MNOs have established customer volumes and aggregators facilitate this push/pull function between them. Pricing structures are dependent on bank-MNO negotiations, with some banks opting to absorb the costs while others prefer to share the burden with the end consumer.



One service, one aggregator:

Most MNOs or third parties prefer working with only one aggregator for one service. This is mostly true in the case of utility payments.

Example: In Kenya, Cellulant won the countrywide bid for National Water's services. Cellulant integrated National Water's bill pay services into mobile money and bank led mobile apps. Most other aggregators that now offer national water bill pay services have to connect through Cellulant.

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Aggregators have accelerated the expansion of the DFS ecosystem

Aggregators have helped develop the DFS ecosystem by enabling third parties to connect with multiple mobile money services, expanding the use cases for customers

Aggregators have successfully provided integration functions that have enabled the roll out of digital bill pay, bulk pay, retail payments and other services. They have enabled third parties to accept and send payments across networks. Aggregators also try to gain competitive advantage by offering heavy customization, database management, good reporting and, most importantly, the ability to manage payments through a central platform.

Aggregators offer VAS beyond the core integration

Aggregators offer tailored services like employee and /or beneficiary training, bulk SMS notifications, real time validation and help lines or relationship managers that the third parties can reach out to for troubleshooting. These offerings help third parties manage risk (particularly with cash disbursements) and enhance accountability and data collection. Some aggregators also offer customer support services, directly influencing customer retention and uptake.

MNOs might have been able to do this themselves, but at much higher cost and longer timeframes.

A direct banking integration can take between 4 to 6 months. However, an aggregator that already understands core banking or has an existing integration with one or many bank systems can save third parties and MNOs time and money. Aggregators that are integrated with payment instruments can help third parties go-to-market in a shorter timeframe, helping innovations and solutions reach the end customer more quickly.

Security: Do aggregators increase or decrease security risks?

Based on the interviews conducted, integrating into third parties via an aggregator **does not increase security risk**. Instead, third parties and payment instrument providers can demand a higher level of security at three levels*: (a) Data security; (b) User privacy and security; and (c) Payment platform security.

- A. Data security: Banks and MNOs require aggregators to follow industry standard encryption methods. According to Cellulant in Kenya, banks in the region make aggregators undergo exhaustive financial and technical due-diligence before providing them access to their systems. Moreover, MNOs find the aggregator model favorable, particularly for small volume transactions, as this limits the number of entities accessing their systems directly, thus enabling MNOs to manage risk better.
 - B. User privacy and security: Depending on the service, this could be dictated by the third party or be a function of the aggregator platform. Typically aggregators in the region are bound by user data confidentiality agreements with banks or MNOs.
 - C. Payment platform security: Many aggregators interviewed during the study provide third parties with multi-layer authentication. Example: In a bulk disbursement, there are three levels of access and authentication. Level 1, called 'Maker', involves filling in recipient information and applicable payment amount in the payment platform. Level 2, called 'Checker', requires a pre-assigned individual to verify the entered information and sign-off on it. Lastly, Level 3 also called 'Authorizer' requires a review of the payment schedule and amount by a designated authority who then authorizes payments through the platform.
- Aggregators are also required to document and keep transaction data, which can be called on for audits by the payment instrument providers.

*See, [Digitizing Payments for USAID beneficiaries](#): A Vital Wave report on how the pay out process works, typical transaction fees, etc.

Security (contd.)

Risks that come with the integration of aggregators

Aggregators bring with them accountability through digital transactions and reduce security risks associated with physical cash management. Yet, no system is entirely risk-free.

The processes mentioned earlier mitigates many key risks.

However, there are multiple scenarios under which **digitization of payments could result in fraud.**

External fraud

- If the PIP's system itself is insecure, it becomes vulnerable to hackers.
- In the One-Aggregator: One-Service model, one aggregator is the primary linkage point and other aggregators have to link into the MNO system through the primary aggregator. If the primary aggregator does not require or enforce industry standard encryption, there are opportunities for fraud.

Internal fraud

- This could occur at the third party, PIP or at the aggregator level. In order to avoid chances of any internal fraud, aggregators not only place multilayered authentications but are also required to undergo regular external audits by either the bank or the MNO.

Challenges: Most aggregators are still small and struggle to survive in a capital intensive and operations heavy industry

Limited Financial Capacity: Capital is a key challenge for all aggregators. This is a capital intensive business with services that require heavy customization and long breakeven spans. Some aggregators struggle with upgrading technical and operational capacities, eventually leading to service issues.

Other Challenges:

- **Technical:** Sometimes, the aggregator is not equipped for the volumes that come with bulk disbursement (both volume and value of disbursements). This might result in an inability to disburse all bulk payments at once, disbursing them in batches instead*.
- **Operational:** Aggregators struggle with personnel bandwidth issues, particularly in 3 areas:
 - (i) Customer Support: Few aggregators have 24/7 call centers to trouble shoot third party and end customer issues.
 - (ii) Third Party training: Aggregator staff capacity to conduct trainings and workshops to educate third parties using their services is often stretched.
 - (iii) Transaction reversal processes are often cumbersome and can lead to loss of money.

*Note: As mentioned previously, most aggregators can handle high volumes when it comes to bill payments and account-to-account integrations. These transactions do not happen simultaneously. Bill payments occur in batches and on different cycles enabling aggregators to manage the volume flowing through their system. However, donors and businesses sometimes require that payments to all recipients across networks be made simultaneously. Depending on the aggregator capacity, this could pose a challenge resulting in batched disbursement.

Aggregators are vulnerable to MNO and bank limitations

MNO and Banking processes:

MNO and bank processes are at times manual and turnaround times are unpredictable. This has the potential to affect bulk disbursements, retail payments and CICO. For example, conversion of cash to e-float for bulk payments by an MNO (or the reverse by a bank) can take anywhere between 1 - 3 days in some markets.

Aggregator account limits with MNOs:

Another limitation (which varies from country to country) is aggregators' e-value account limits with MNOs. In Uganda this limit is capped by MNOs at \$81,000, affecting aggregators that try to make huge bulk payments or catering to multiple clients simultaneously.

Pricing Structures:

Banks and MNOs can be inflexible on pricing structure, making aggregator services expensive. Increasingly, MNOs have been pushing aggregators on already slim margins. This has resulted in lowered investment into the business by aggregators, at times resulting in inconsistent customer support or longer integration times.

Regulation:

Most aggregators possess either a Premium Rate Service Provider (PRSP) license or are registered IT companies. Specific regulation for aggregators does not exist yet and so aggregators work in an unclear regulatory space.

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Intense competition and threat of elimination are causing aggregators to re-evaluate their business models & strategies

As the DFS sector matures, MNOs have upgraded their technical capabilities to the point where many can handle multiple direct integrations without the need for an aggregator.

MNOs are increasingly bypassing aggregators and offering direct integration to third parties with significant volumes (e.g., Airtel has offered DSTV direct integration in Kenya). MNOs are upgrading their platforms and increasing their technical and operational capabilities to service high-volume third parties, eliminating any need for revenue splits with intermediaries.

MNOs have made steady progress in improving APIs and several are moving towards fully opening their APIs. As this happens, third parties can directly integrate with MNOs, reducing the need for aggregators.

Aggregators are currently feeling the pressure from MNOs on various levels:

- MNOs are squeezing aggregators on already slim margins.
- MNOs seem to be placing limitations on aggregators, perhaps so that they don't grow too large or important. For example, in Uganda, Airtel and MTN give their clients corporate e-value accounts to the tune of \$1.5 million while they grant aggregators account limits of up to \$81,000, thus limiting the technical and operational capabilities of aggregators.

Diversification and future of aggregator models

Aggregators are responding to these threats in one of three ways:

1

Increasing focus on VAS

Although technically it might be easier for banks and MNOs to directly integrate, some aggregators are betting that VAS (receipts, reconciliations, troubleshooting) will prove to be their unique competitive advantage – something that MNOs might struggle to replicate. This could potentially be why, though Safaricom improved its API to integrate directly with banks, most banks still choose to connect via an aggregator.

A few aggregators are also developing credit scoring algorithms and are trying to position themselves in the emerging market for digital credit products.

2

Expand to new industries that haven't yet digitized

There are still many sectors, including education, tourism and entertainment, that have not yet figured out how to fully tap into the mobile money market yet. These include schools and universities and, to some extent, tourism and event agencies.

Aggregators are looking at chains of for-profit schools, tourism outlets or petrol-stations as early targets because often one integration is enough to bring in multiple branches and consequently higher volumes.

3

Try to 'own' a bigger piece of the value chain: either product, channel and/or end customer.

Some aggregators are now looking at aggressively acquiring or owning a bigger piece of the value chain. Aggregators who were previously only back-end are moving into the front-end space and directly engaging with the end customer. For example, several who offer front-end services (for pay-bill and other functions) are also moving into merchant payments.

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Appendix I

Organizations Interviewed

Organization Interviewed	Type
Airtel - Kenya	MNO
Airtel - Rwanda	MNO
BitPesa - Kenya	Third Party
Button Pay - Tanzania	Aggregator
Cellulant - Kenya	Aggregator
Kopo-Kopo - Kenya	Aggregator
Maxcom - Rwanda	Aggregator
m-Cash - Rwanda	Third Party / E- Money Issuer
m-Cash - Uganda	Third Party / E- Money Issuer
m-Visa - Rwanda	Third Party
Pegasus Technologies - Uganda	Aggregator
Pesapal - Uganda	Aggregator
Pivot - Rwanda	Aggregator
Selcom - Tanzania	Aggregator
Software Group - Kenya	Aggregator
Tigo - Rwanda	MNO
Vital Wave - Kenya	Third Party
Vital Wave - Uganda	Third Party
World Food Program - Kenya	Third Party
Yo! - Uganda	Aggregator
Zeepo - Kenya	Super Agent

Appendix II

Aggregators in the region

Aggregators with HQ in Kenya

- 1 3G Direct Pay
- 2 Cellulant
- 3 Craftsilicon
- 4 Intrepid Data (iPay Africa)
- 5 Jambo Pay
- 6 Kopo-Kopo
- 7 Lipisha
- 8 PesaPoint
- 9 Pesapal
- 10 Poa Pay
- 11 Software Group
- 12 Weze Tele Ltd.

Aggregators with HQ in Uganda

- 1 Beyonic
- 2 D Mark
- 3 Hamwe
- 4 Intel World
- 5 Pegasus
- 6 RedCore Interactive
- 7 Smart Money Uganda
- 8 TechnoBrain
- 9 True African
- 10 UgandaeZee Money
- 11 Vision Unlimited
- 12 Yo! Payments Limited

Aggregators with HQ in Tanzania

- 1 Button Pay
- 2 Selcom
- 3 Umoja Switch

Aggregators with HQ in Rwanda

- 1 Maxcom
- 2 Mvend
- 3 Pivot
- 4 SMS Media

* This list is not comprehensive.

Appendix II

Secondary Sources

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