



Innovations in Health Product Distribution in Sub-Saharan Africa

Market update | September 2019 | *External report*

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The numerous companies, thought leaders, investors and donors whose work and insights informed the analysis.

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KEY TAKE AWAYS | There are 3 types of innovations in product distribution emerging. Innovations in Distribution to Providers and in Product Information point towards opportunities to re-imagine service delivery.

	1	2	3
	Distribution to Providers <i>Improving distribution to hospitals, clinics, pharmacies & drug shops through technology-enabled services</i>	Distribution to Consumers <i>Enabling distribution and dispensation to the consumer</i>	Product Information <i>Offering consumers, manufacturers & governments information on product location, price, authenticity, use, adherence, more</i>
Key findings	Larger number of start-ups in this space Companies reporting growth	Some promising start-ups in this space Growth is less clear	Start ups and established companies exist Nascent growth in the breadth of service offerings
Insight	Technology-enabled distribution to providers is likely to grow	The potential for e-commerce direct-to-consumer services to improve coverage of priority health products is not yet clear, but could be bolstered through investment and partnerships with insurers, donors and governments. In the interim, hybrid online/offline models may present the most promise.	Traditional categories of information are blending as product-focused companies begin to expand offerings



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1 Process

Methods

Data collection

Key informants



The goal of this project is to outline key trends emerging among innovators in health product distribution and analyze their potential application to efforts to increase coverage of priority products

The analysis seeks to address two questions:

- ✓ **What are the key trends emerging in health product distribution in sub-Saharan Africa?**
- ✓ **What is their potential impact on coverage of priority health products in sub-Saharan Africa?**

The landscape is largely focused on identifying **innovative companies** working to improve the movement of health products from the port to the consumer. Thus, the work focuses **above the retailer** and does not provide specific insights on franchises, chains, drug shops, etc. **The work excludes technology-based innovations where product distribution is not a core offering, for example coaching, counseling and more.**

Why now? Across the industry, stakeholders are unsure what innovations are emerging, how to think about the promise of these companies, and how to engage (if at all).

UPSTREAM

out of scope

Health system governance, product financing, logistics management & information systems, procurement, talent base, product registration, politics, policies, more

FOCUS OF PROJECT IS ON INNOVATIONS HERE

Health product distribution (excluding cold chain innovations and medical devices; project financing for new distribution models remains in scope)

DOWNSTREAM

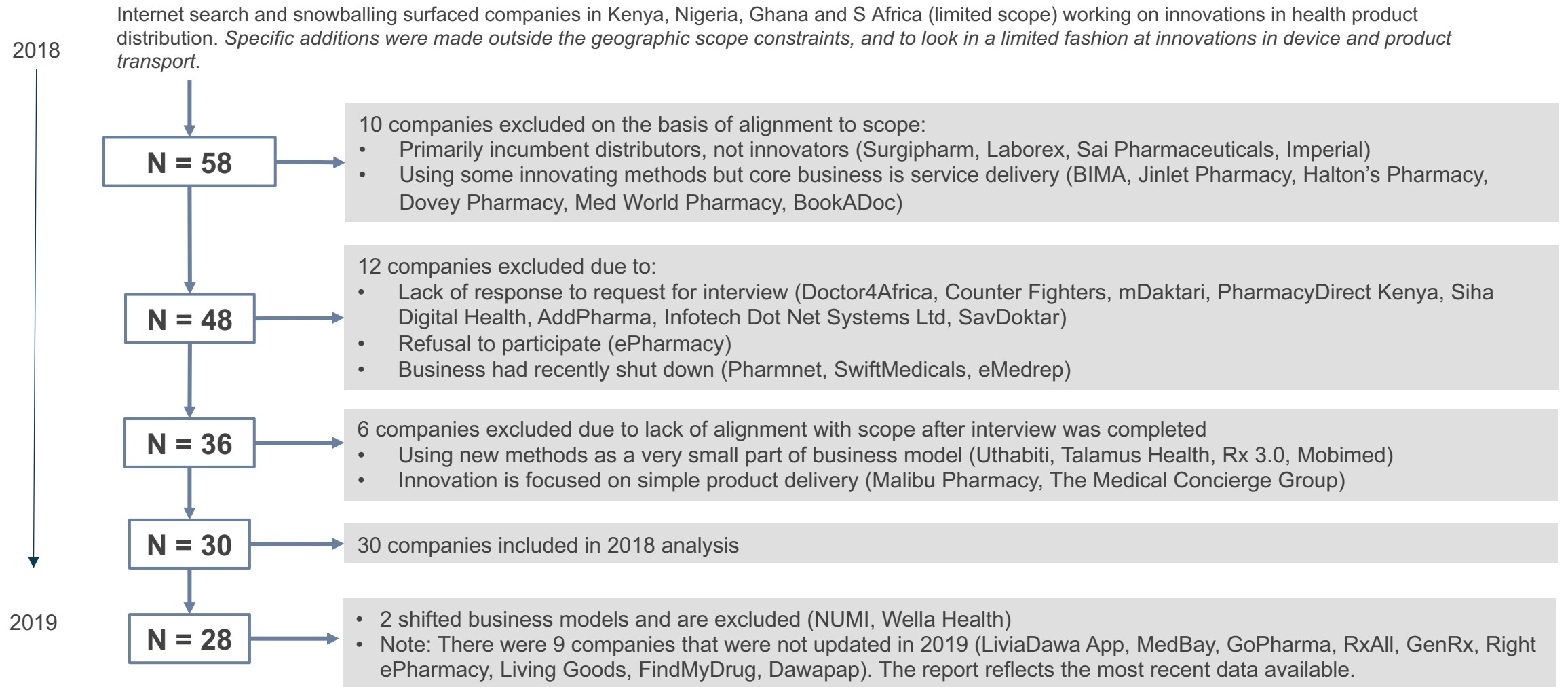
out of scope

Consumer demand, pharmacovigilance, retail chains, social marketing, social franchises, more



As a part of a broader effort to strengthen supply chains, this work supports the Gates Foundation Supply Chain team's strategic pillars on 1) Strengthening the Supply Chain Market, with a focus on Retail Supply Chains and 2) Cultivating Disruptive Transformation.

Data reflected in this presentation were collected over two rounds on innovations in Nigeria, Ghana, Kenya and S Africa



Limitations: Data are collected from company leadership and verified with each informant to ensure their accuracy. Inputs were not externally validated.

Findings are shaped by nearly 50 key informants including innovators, INGOs, industry leaders, investors and thought-leaders

<i>Companies</i>			
Chibuzo Opera - Drugstoc	Michael Moreland – shelf life	Elvin Blankson - GoPharma	Joost vanEngen – Healthy Entrepreneurs
Abdulraheem Malik - Findmydrugs	Noah Perrin - VIA Global Health	Samier Muravvej - Livia Health	Angus Nasir - Dawapap
Ralph Olaniyi - GenRx	Ikpeme Neto - Wellahealth	Tony Wood - MYDAWA	Abraham Okore - Dawaplus
Vivian Nwakah - Medsaf	Ashifi Gogo - Sproxil	Jessica Vernon - MaishaMeds	Fanie Henxriksz - Right ePharmacy
Abimbola Adebakin - Mymedicines.com	Bright Simons - mPedigree	Joanna Bischel - Kasha	Farouk Meralli - mClinica
Sophia Baah - mPharma	Nakul Pasricha - PharmaSecure	Thomas Onyango - Living Goods	Anup Akkihal - Tusker
Pius Alabi - RxAll	Hayford Brako - MedRx	Peter Kamunyo - MedSource	Agree Ahmed, Harrison Teyler - NUMI
Felix Akuamoah - Medbay	George Franklin – AfyaPap		
<i>Industry stakeholders</i>			
Julie Jenson - Pfizer	Harald Nusser - Novartis	Jane Rasmussen – Novonordisk	Jeff Jacobs, Mindy Neiman - Merck for Mothers
Jo Tierans, Jill Lavitsky - J&J	Kedar Madhekar – Mylan	Iain Barton - Imperial Health	
<i>Relevant INGOs</i>			
Neel Lakhani - CHAI	Calum McGregor - WFP	Frederiek Chatfield - MSI	Chris Purdy - DKT
Carolyn Hart - JSI	Renee Berger - GHSC	Paul Stannard - PSI	Saumya RamaRao - Population Council
<i>Investors, academics, thought leaders, other</i>			
Andreas Seiter - World Bank	Frank Wafula - Hecta	Mike Harvey - Independent	Richard Pibernik - Uni Werzberg
Biju Mohandas - IFC			



2 Key findings

Motivation

Key trends



Health product distribution suffers from many challenges that affect visibility, price, availability and quality

Supply chains vary considerably from one country to another; *this is a simplified depiction.*

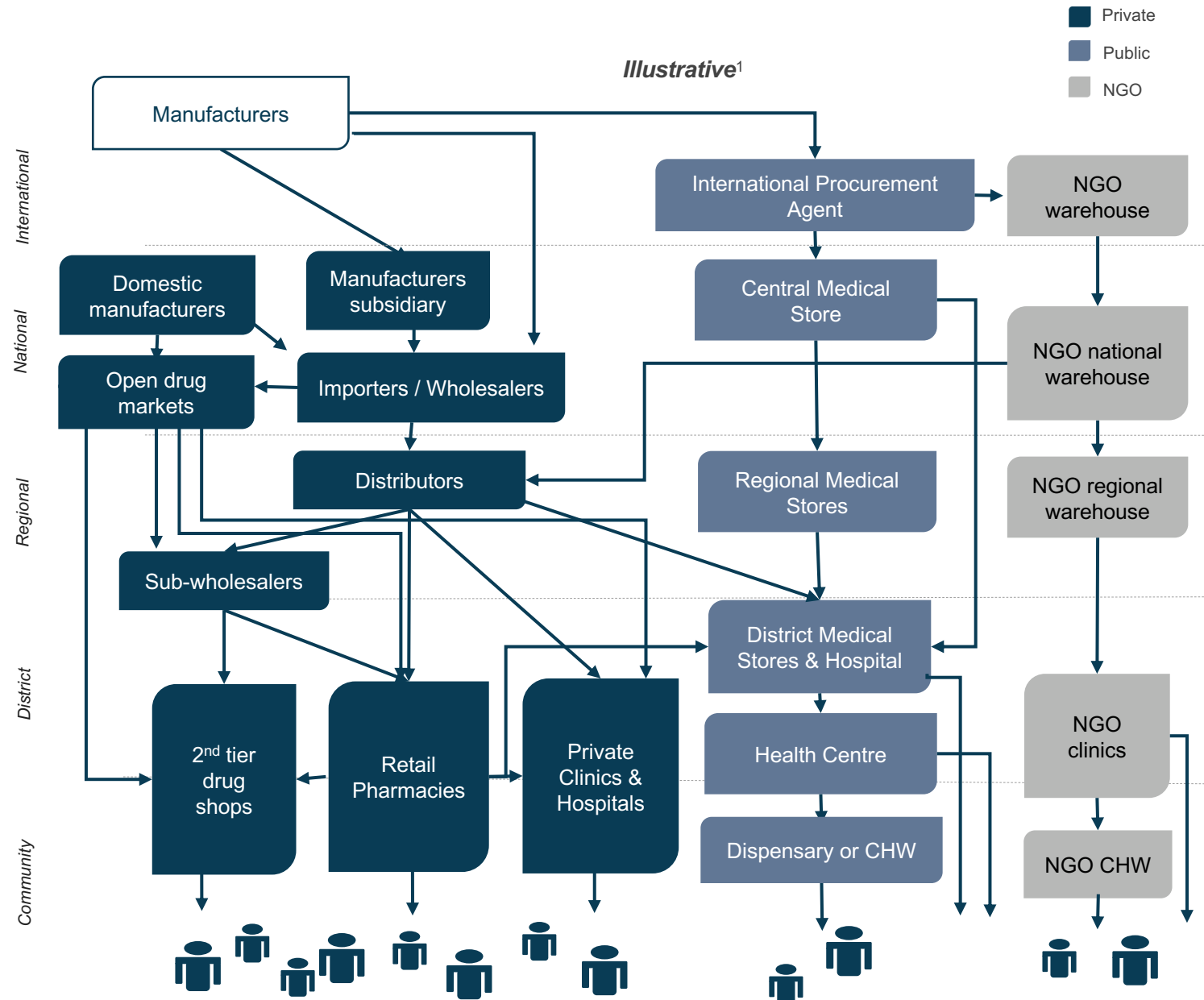
In some contexts, the faith-based sector also plays a large role in product distribution which adds another channel. Not all countries have open markets.

In many contexts, availability and quality in the public sector is limited and consumers turn to private sector providers. Private providers (and thus private supply chains) can be dominant sources of care.

Public, private and NGO channels are **inextricably linked at multiple points where products pass between them.**

In the private sector mark-ups at every level exist, oftentimes in spite of regulation that attempts to control for it. The costs to the end consumer can be exorbitantly high.

The flow of information in an end-to-end fashion is limited.



As an example, distribution of emergency contraception in the private sector is convoluted; opportunities for markups are rampant and visibility is limited

Pure private channel

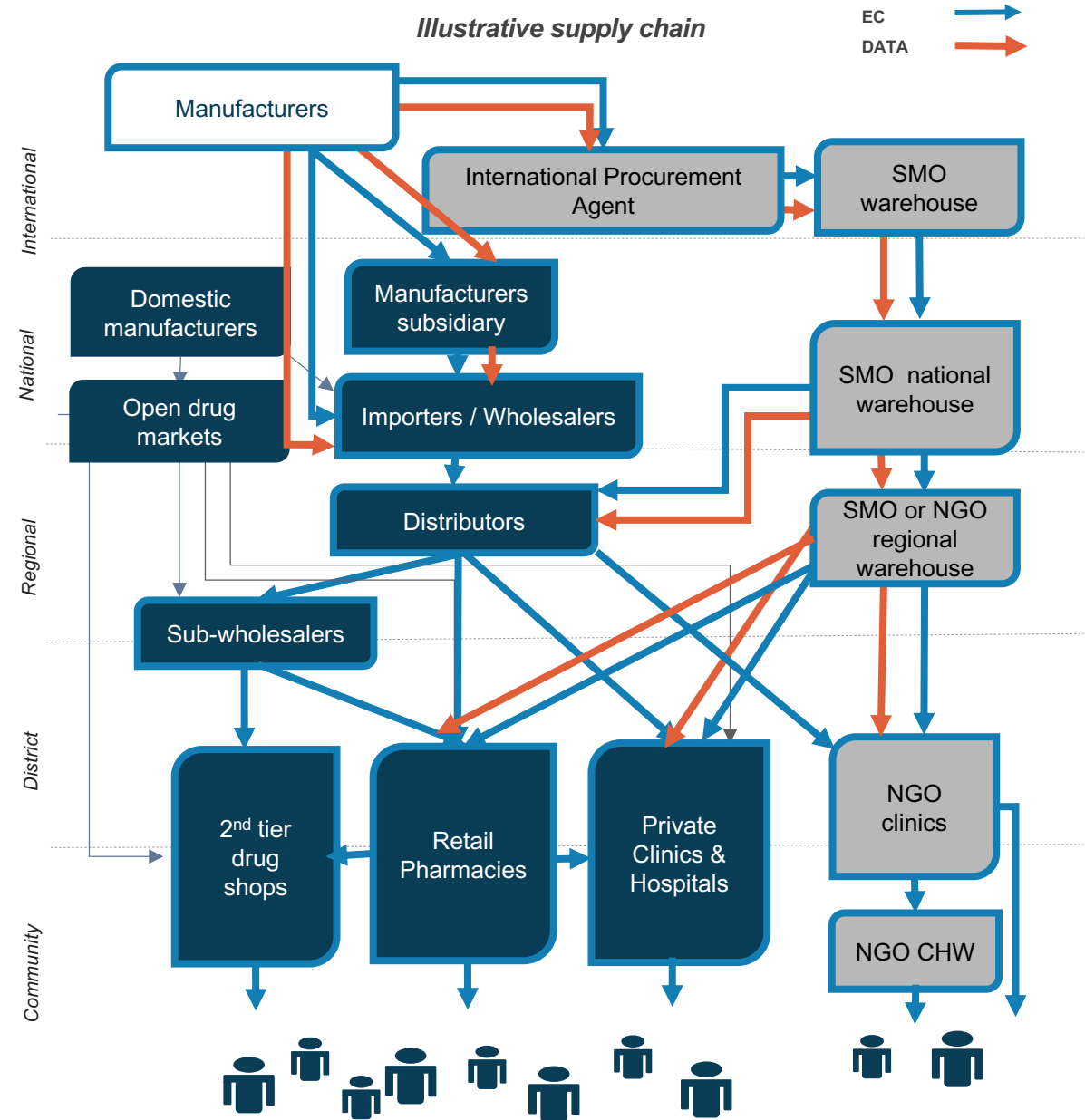
Emergency contraceptives might move from manufacturers to manufacturers subsidiaries or importers/wholesalers. The product is then sold to distributors, who may sell onward to sub-wholesalers, or sell to private and NGO retailers directly. **Markups along the chain vary widely. There is no end-to-end visibility on the product movement.**

Social marketing channel

A social marketer (SMO) often offers a complementary distribution channel for subsidized EC. Through this channel, the SMO procures the product, imports to their national warehouses, moves product to regional warehouses and onward to local private sector distributors. **Markups can occur at several points between these distributors and the end consumer.**

SMOs also distribute subsidized product to local NGOs and private retail clinics who sell to their customers. **Markups may occur between these providers and the end consumer.**

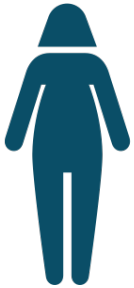
Regardless of the channel, the SMO will have regular data on the volume of products they sell to distributors or retailers. **However, we do not have regular visibility into the movement of product onward to other providers, or to consumers.**



Distribution challenges impact consumers, providers and payers in many ways

Consumers

E.g. mother



- Many consumers seek products in the private sector but have challenges finding the right products near them at the right price, and high quality
- More

Providers

E.g. pharmacy owner



- High transaction costs for restocking and price fluctuations threaten product availability
- Unable to verify quality of products
- Low profitability, lack of working capital and credit
- More

Payers

National and Global

E.g. MoH and donors



FEDERAL MINISTRY
OF HEALTH

USAID



- Governments find it difficult to reimburse providers and verify transactions due to a high level of fragmentation of private providers
- Donors find it difficult to ensure supply-side subsidies reach the poor
- More



What's new? Commercial solutions are now emerging to solve some of these challenges. Some innovators have business models that reduce costs and generate value for payers, suggesting further opportunities for scale.

Generally, innovators are offering 3 types of solutions to critical distribution challenges

1

Distribution to Providers

Improving distribution to hospitals, clinics, pharmacies & drug shops through technology-enabled services

2

Distribution to Consumers

Enabling distribution and dispensation to the consumer

3

Product Information

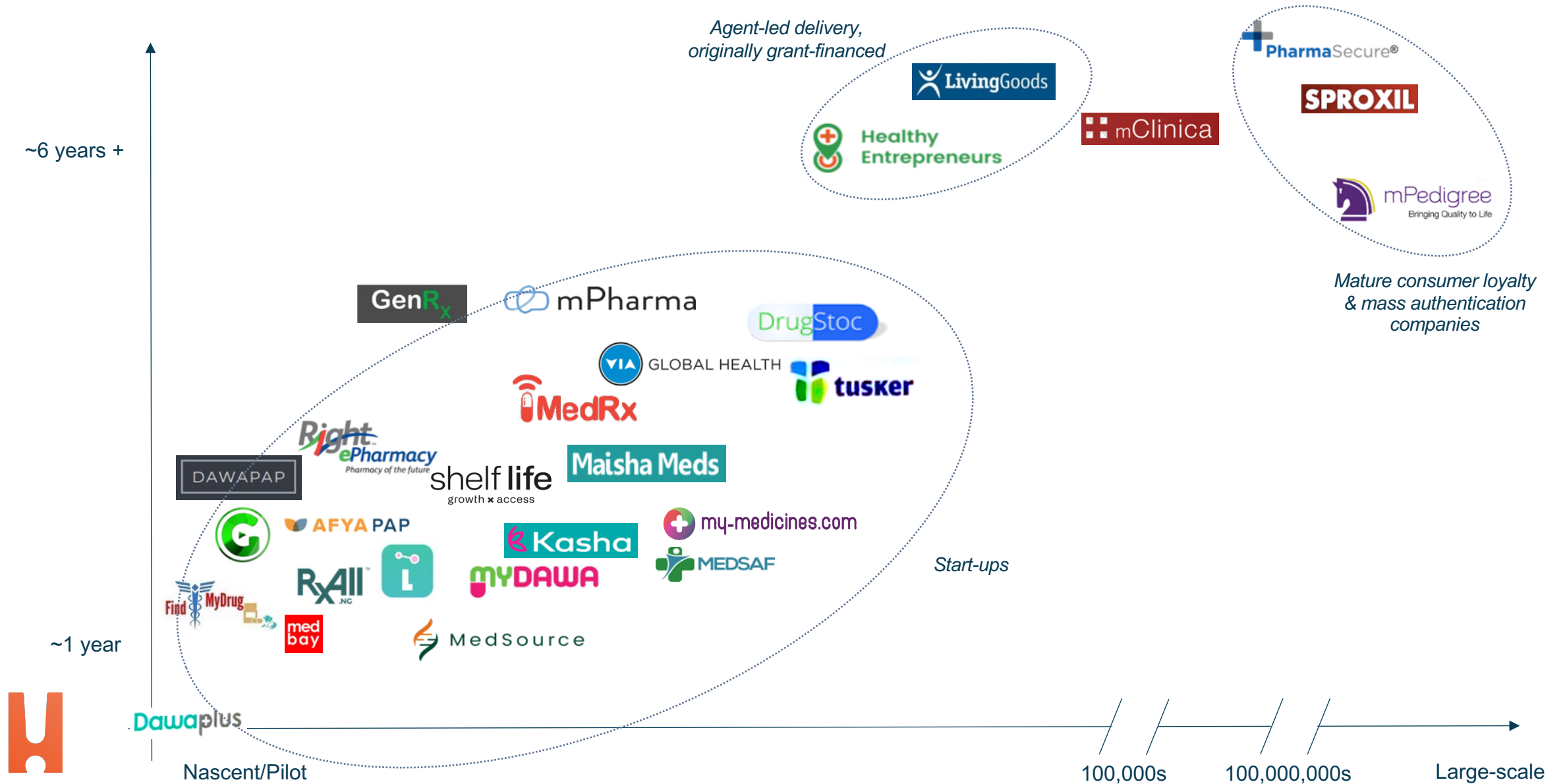
Offering consumers, manufacturers & governments information on product location, price, authenticity, use, adherence, more



Research identified 28 innovators in product distribution emerging across the African continent and beyond

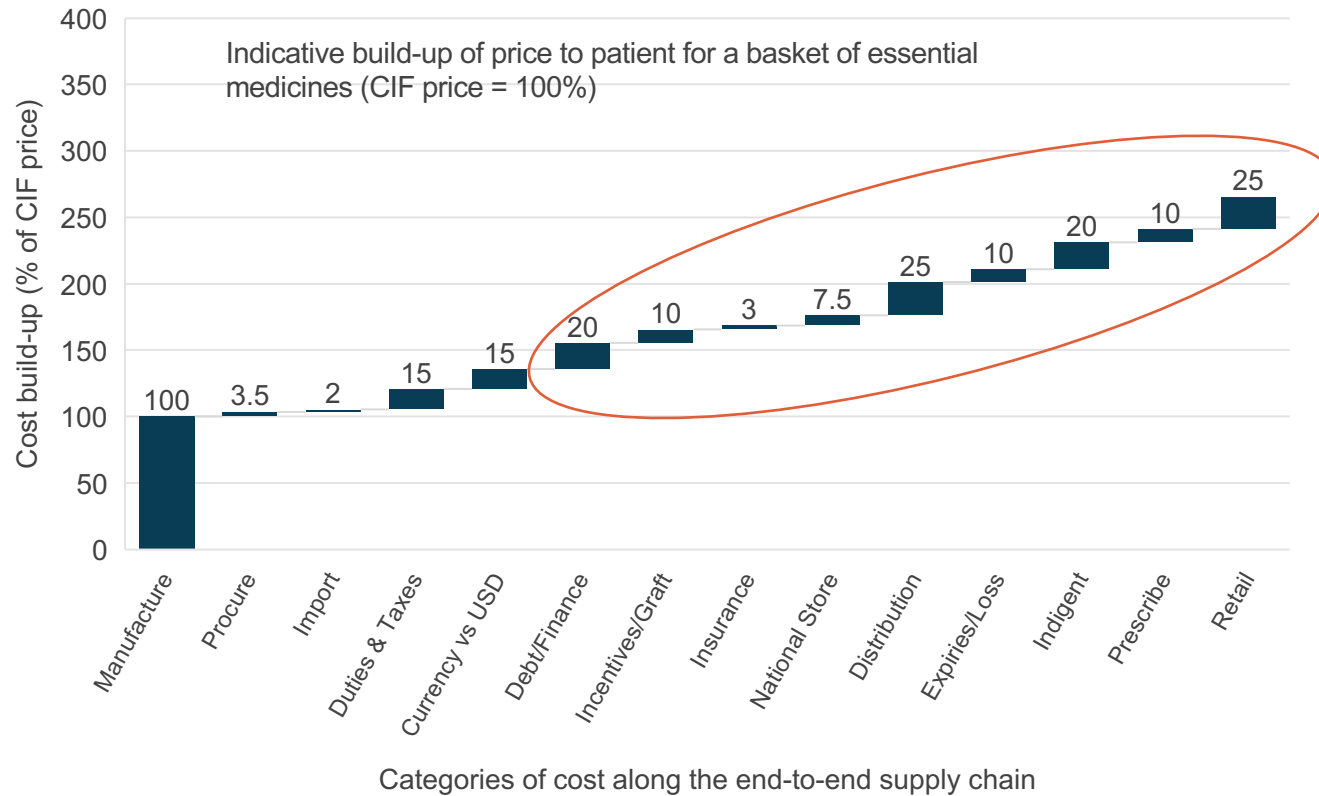


With some exceptions, most of these innovators are new and *very small*



Innovators see high markups along private supply chains as an opportunity for disruption

In emerging markets for essential medicines an estimated 60% of the final “price to patient” is determined by national and sub-national distribution,¹ which represents a significant financial opportunity for innovators



Innovators are reducing the direct cost of products, reducing the variability in costs and reducing the transaction costs their customers incur

MedSource | Aggregating orders and offering providers **8-30% off market prices** plus affordable credit and quality assurance.

LiviaDawa | Reverse-price auction offers consumers **~30% off market prices** with the option for delivery.

MYDAWA | Generics manufacturer goes direct-to-consumer, offering consumers **~20% off market prices** including delivery.

Tusker | A marketplace for affordable, same day delivery from district to rural areas through aggregated order and route optimization.

1) Silverman, Rachel et al. Tackling the Triple Transition in Global Health Procurement. Washington, DC: Center for Global Development, 2019.

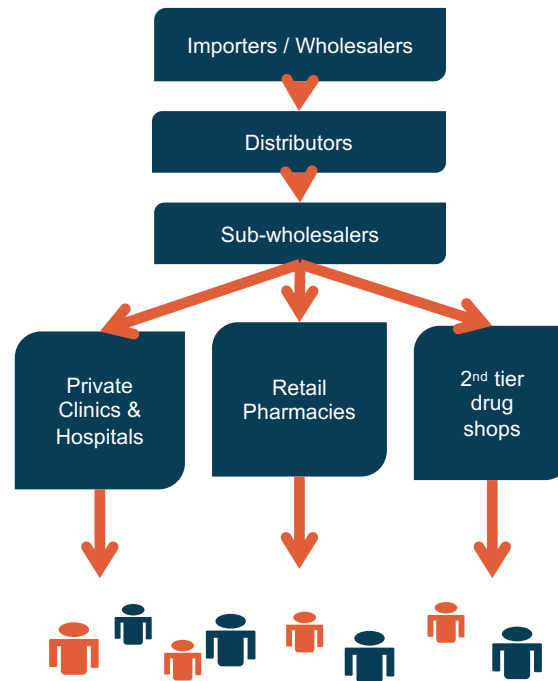


Innovators promise new visibility into product movement and consumers themselves

Companies offer increased visibility into product movement at lower levels in the supply chain, and into consumer demographics and behavior

The visibility is not often end-to-end but shows great promise

New visibility on product movement



New visibility on consumers

- Product consumption
- Consumer demographics
- Consumer location
- More

MYDAWA | Tracks product movement from manufacturer to point of dispensation, **providing visibility into when, where and to whom it was dispensed.**

shelf life | Offers “full service” inventory management of fastest moving products for community pharmacists. **Generates visibility into the movement of key products at the community pharmacy level.**

PharmaSecure | Offers voice & SMS follow-up after consumers authenticate their product. **Use with TB patients showed a 60% increase in adherence.**

Kasha | Through a flexible e-commerce channel, Kasha **creates novel relationships with lower-income women**, helping open markets for large FMCG businesses.

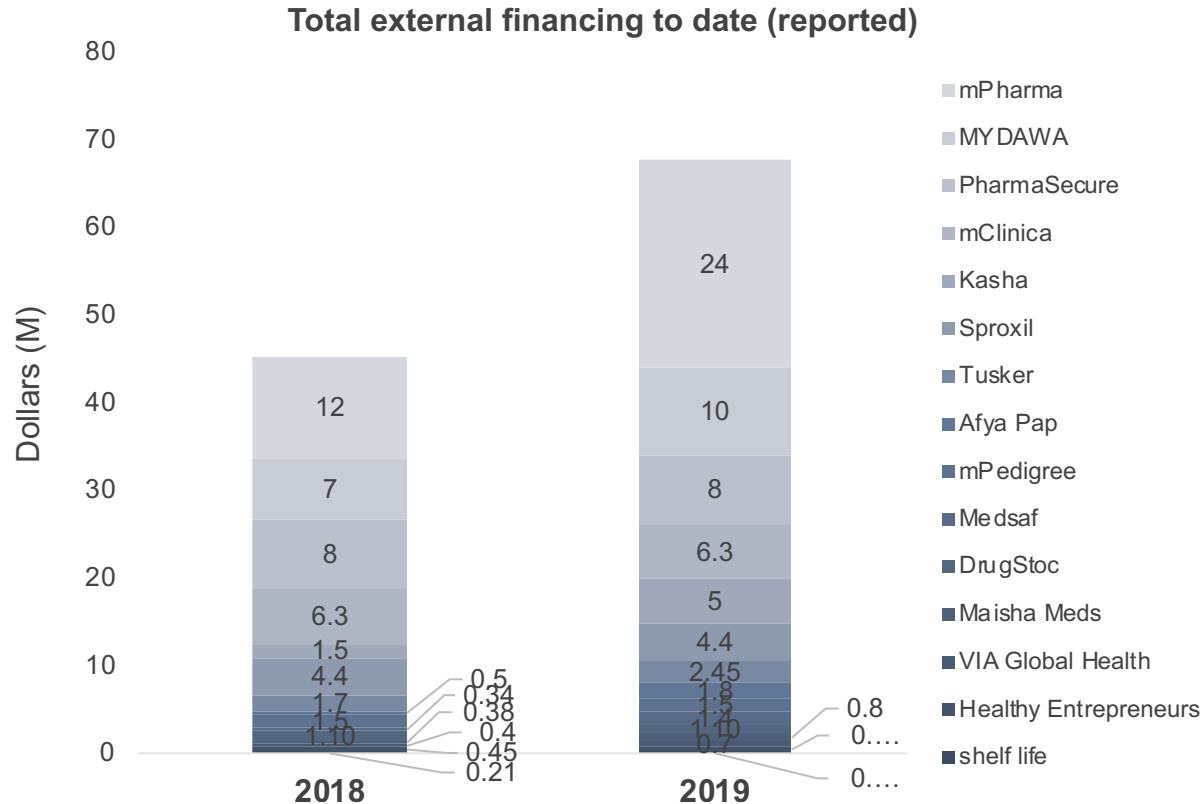


See selected company summaries on pgs. 36, 41, 45 and 46

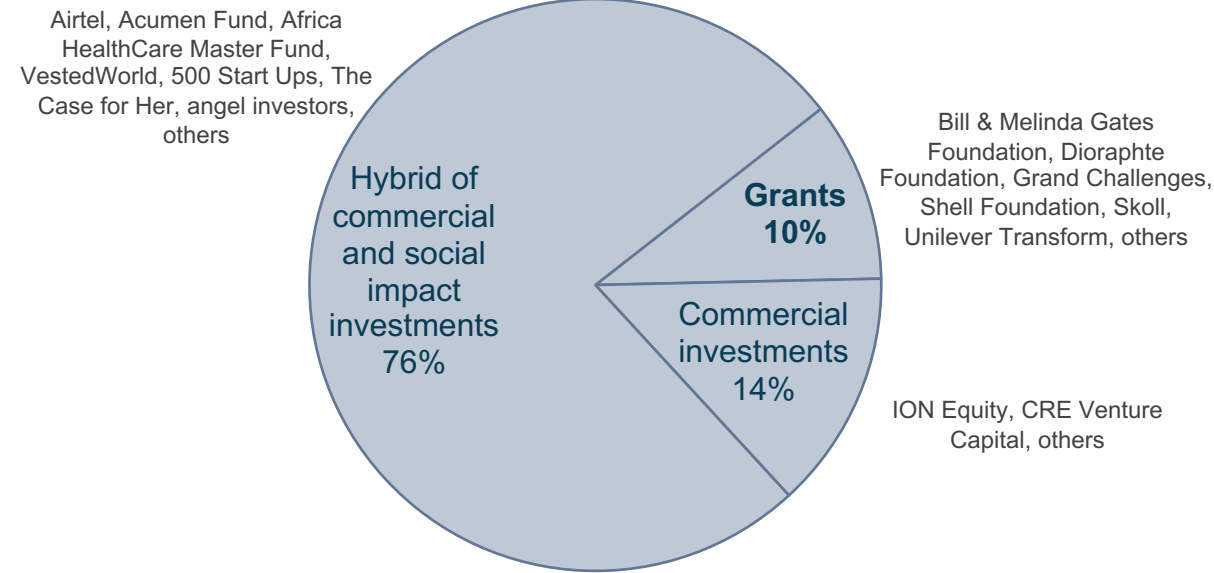
More than \$20M in new financing was reported in the last 10 months, concentrated among a few companies. Momentum appears to be growing with limited input from grant financing.

>\$20M in new financing reported is concentrated in a few companies (mPharma, Kasha, MYDAWA).

The financing appears to come largely from commercial and social impact investors, not grants.



Sources of external financing, as of 2019 (reported)



For consideration: given growth is being powered by revenue, self-financing and social/commercial investment, what should be the role of grant financing?

The sector appears to be growing, but understanding the specifics is challenging

Companies don't appear to be exiting the space: only 2/30 companies pivoted significantly
Most companies are reporting growth on varying axes

	Growth reported	Caveats
1 Distribution to providers	Growth in the number of customers served is apparent, across most companies ✓ mPharma has grown from 188 to 243 providers ✓ shelf life has grown from 50 to 133 providers ✓ MedSource has grown from 90 to 160 providers ✓ Maisha Meds has grown from 200 to 300 providers	Companies do not categorically disclose the value and volume of products they're moving, which could help deepen the analysis
2 Distribution to consumers	Growth is apparent, but on different axes ✓ Kasha has grown from 60,000 to 215,000 products delivered D2C ✓ Healthy Entrepreneurs has grown from 2,750 to 4,000 active entrepreneurs ✓ MYDAWA has grown from 50,000 to 80,000 registered users ✓ Afya Pap has grown from 5,000 to 20,000 registered users	Companies do not categorically disclose the number of customers served with health products . For most, it is likely this is much smaller.
3 Product information	Growth in breadth of services offered including augmented reality, track and trace, more	Three important companies in this category operate at a very large scale and thus cannot match start-up growth rates, but are expanding in scope. New offerings are at early stages, the promise is not clear .



See selected company summaries on pgs. 37, 41, 42, 43, 46, 47, 48, and 54

3 Category deep dives and innovation highlights

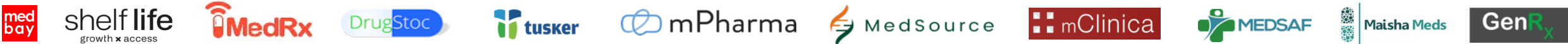
Innovations in distribution to providers

Innovations in distribution to consumers

Innovations in the use of product information



INNOVATIONS IN DISTRIBUTION TO PROVIDERS | Improve distribution to hospitals, clinics, pharmacies and drug shops through technology-enabled services



Services fall into 4 categories *with most companies offering services in multiple areas....*

- | | | | |
|---|---|--|--|
| 1 Stock financing & ownership
Providing credit, pay-as-you-dispense financing, brokering payments | 2 Inventory management
Provision of digital inventory management services | 3 Marketplace & fulfillment
Digital marketplaces to connect providers to suppliers | 4 Group purchasing
Aggregation of orders across disparate providers for volume-based discounts |
|---|---|--|--|

Key impacts

- Companies in this category appear to
- ✓ increase availability of health products
 - ✓ reduce the cost and variability in cost of health products
 - ✓ reduce transaction costs required to stock and resupply
 - ✓ improve rural reach (especially companies like Maisha Meds)
- Unclear the extent to which cost savings are passed on to consumers
 - Quality assurance appears limited


Recent growth

Companies appear to be growing, though value and volume of products moved is not known. Only one company exited the space (NUMI).

New external financing is highly concentrated among a few companies.



Potential impact on global health programs: High. Technology-enabled distribution to providers is likely to grow. This is an area where the Foundation might engage to strengthen scale and impact.

 See selected company summaries on pgs. 39, 40, 41, 42, 43, 44, 50, 52 and 53

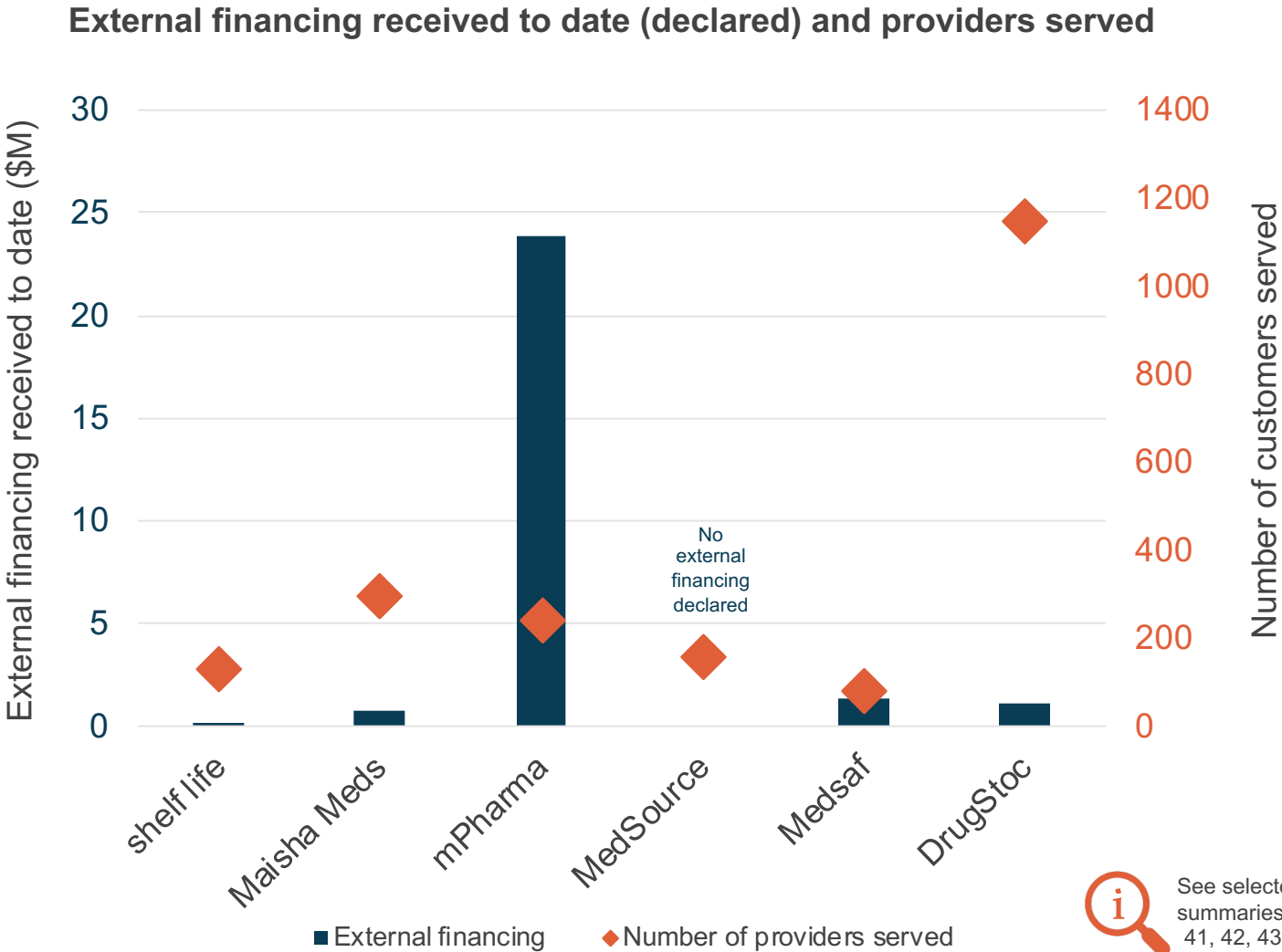
INNOVATIONS IN DISTRIBUTION TO PROVIDERS | External financing is concentrated in a few companies. The amount of external financing received does not appear correlated with customers served.

Providers include hospitals, clinics, pharmacies, drug shops.

DrugStoc remains the largest company distributing to providers on the continent, as measured by the number of providers served.

This analysis does not capture the value and volume of products each company is delivering to its customers. This is an important metric for understanding scale.

mPharma has received the bulk of the financing of companies in this category. They recently purchased a retail pharmacy chain in Kenya, which creates direct relationships with consumers.



See selected company summaries on pgs. 39, 41, 42, 43, 44 and 52



INNOVATIONS IN DISTRIBUTION TO CONSUMERS | Enabling distribution and dispensation to the consumer



Services fall into 5 categories....

- 1
 Agent-led delivery models
 Bring products to people through low-level health workers
- 2
 Digitally-enabled D2C distribution
 Allow digital ordering & delivery
- 3
 Smart ATMs & lockers
 Automate dispensing, sometimes paired with telepharmacy
- 4
 Reverse price auctions
 Use technology to enable easy price comparisons
- 5
 Retail partnerships
 Tech-enabled care leverages existing facilities and providers

Key impacts

All appear to

- ✓ increase availability of health products
- ✓ reduce customer transaction costs and
- ✓ in most cases reduce the costs of the actual products

Commercial, e-commerce D2C distribution models are emerging to serve: 1) Urban consumers who care about convenience for wellness products (MYDAWA, DawaPap) and 2) Rural consumers who need regular access to high-cost, hard-to-source products for chronic diseases (Afya Pap, MYDAWA). Rural expansion is through hybrid models that link online/offline delivery models.

Recent growth

Very difficult to quantify growth. The number of transactions completed for the delivery of *health products* (versus wellness) appears low.

In the last 10 months, Kasha, Afya Pap, MYDAWA received \$7.8M new external financing.

Early stage partnerships with donors, pooled purchasers and governments are underway. MYDAWA and LiviaDawa have established relationships with private insurers, Kasha delivers HIVST in partnership with the Gov. of Rwanda and MYDAWA delivers contraceptives to adolescents in Nairobi funded by CIFF.



Potential impact on global health programs: Impact of e-commerce D2C models on priority health products is not yet clear. Growth is difficult to quantify, but could be bolstered through investment and partnerships with insurers, donors and governments. In the interim, hybrid online/offline models may present the most promise.



See selected company summaries on pgs. 45, 46, 47, 48, 49 and 54

INNOVATIONS IN THE USE OF PRODUCT INFORMATION | Offering consumers, manufacturers & governments information on product location, price, authenticity, use, adherence and more



Services fall into 4 categories....

- | | | | |
|---|---|--|--|
| <p>1 Commodity locators Offer consumers information on the location, price of products</p> | <p>2 Product quality scanners Information on chemical makeup of products</p> | <p>3 Consumer info & engagement Authenticate products and provide information</p> | <p>4 Track and trace Allow for increased visibility in product movement</p> |
|---|---|--|--|

Key impacts

Low perceived impact for commodity locators. Impact of the companies offering product quality scanners was not evaluated.

Unlike many innovators profiled, ‘**mass authenticators**’ such as Sproxil, mPedigree and PharmaSecure are not start-ups; they were launched ~10 years ago. They originally created smart labels for medications that could be placed or printed on the product boxes at the manufacturer. Companies now authenticate for a wide range of industries including agri-inputs, cosmetics, FMCG and more and **collectively have authenticated over 5 billion transactions with over 100M users**. They generate a high perceived impact on consumer information, quality of dispensation, quality of products, rural reach. There is potential for this to improve the availability of health products. Today, two new types of services are offered by mass authentication companies: **1) Consumer information & engagement**, and **2) Track and trace**.


Recent growth

Mass authenticators operate on a large scale already.

However, many are working to expand the scope of their services. They’re in beta mode expanding consumer engagement and experimenting to enable end-to-end track and trace



Potential impact on global health programs: High. Traditional categories of information are blending as product-focused companies begin to expand offerings. Engage to understand where data on product distribution - linked to consumer data, dispensing advice, services, and payments - can close the data loop.

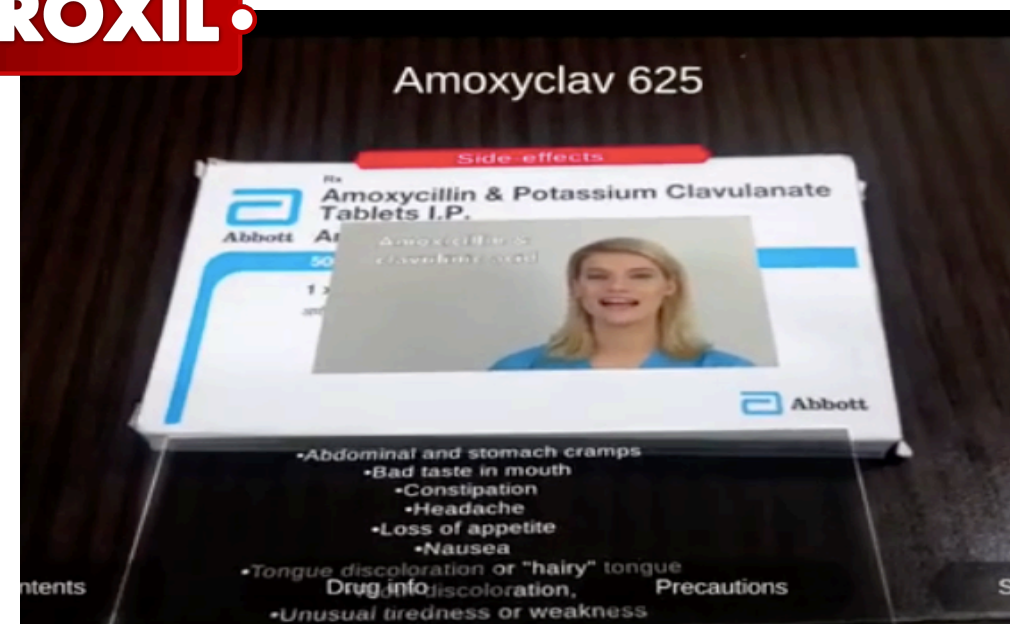
 See selected company summaries on pgs. 36, 37 and 38

PRODUCT INFORMATION DEEP DIVE | Sproxil's Smart View application provides users with an augmented reality to standardize quality dispensing

What is it?

- **Augmented Reality**, or AR, is an immersive user experience whereby real-world objects are enhanced by computer-generated digital information
- **Smart View** is Sproxil's newest technology, allowing users to scan drugs from their mobile phones to receive **information on drug dosage, side effects and precautions**
- The application is available in different languages and uses **videos** and **text** to convey information, ensuring a user-friendly environment regardless of literacy level
- With this function, users can access quality information about products directly **from their smartphones and from any location**

SPROXIL®



Opportunities for reproductive health

- ✓ The **standardization of dispensing advice for contraceptives without requiring that a health provider be present** contributes to **task-shifting** efforts in the contraceptive supply chain and **reduces the spread of misinformation** surrounding family planning.
- ✓ Information can be dispensed in a **comfortable and discrete environment** of the user's choosing, **protecting the privacy of women** seeking directions for the use of contraceptives.



Sproxil is demonstrating the emerging potential to standardize quality dispensing advice through digital tools, and improve consumer engagement



See company summary on pg. 38

PRODUCT INFORMATION DEEP DIVE | mPedigree is on a mission to aggregate diverse product information to empower consumers

What is it?

- When a medication is scanned, an app conducts a structured search on the product and **aggregates information from public databases**. In the future, unstructured searches and targeted presentation of results are the goal.
- In addition, mPedigree seeks to layer on the ability for users to contribute data, to share **tips on the product**, and tell others about their experience, and access others' product ratings.
- Beyond empowering the user to check the safety of their product, users will now use this platform to receive **expanded product information tailored to their particular needs helping create better-informed demand**.



Opportunities for reproductive health

- ✓ The aggregation of user feedback represents an important opportunity for women to **draw from each other's lived experiences using different methods of contraception** through a widened peer support system.
- ✓ If properly moderated, product ratings and reviews could **enhance transparency** and stimulate an **open discussion** surrounding contraception and family planning in different contexts.



mPedigree is working to aggregate diverse product data (including user feedback) and present it back to the user in a targeted fashion. Ensuring the data are high quality is critical.



See company summary on pg. 36

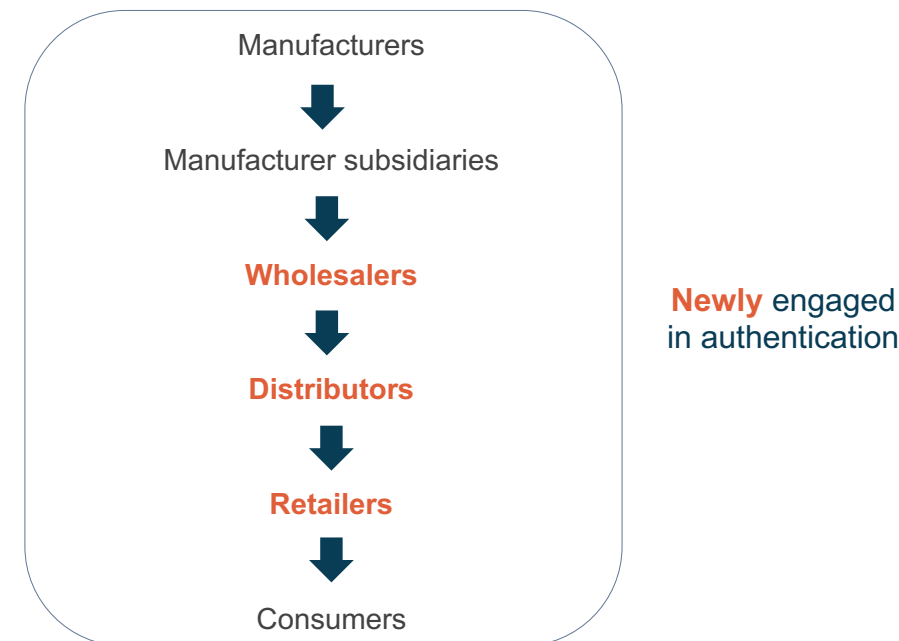
Incentives for authenticating smart labels have traditionally been targeted to consumers via marketing campaigns. Now, mass authenticators have begun incenting wholesalers, distributors & retailers to authenticate products, to experiment with fuller track-and-trace

REGULATING track-and-trace is the most common approach to ensuring products are serialized to enable better visibility, which has been taken in the US and EU and may be pursued in Africa.

INCENTING track-and-trace is a new approach being tested by Sproxil and PharmaSecure

Though this capability existed previously, **incentives for product authentication along the supply chain are traditionally weak, and end-to-end visibility is not feasible**

Sproxil and PharmaSecure are experimenting with incenting wholesalers, distributors and retailers to authenticate product, to enable a more complete picture of product movement and deliver on 'track and trace,' ***pairing this with connection to the consumer.***



Potential opportunities for reproductive health

- ✓ Partnership with social marketing organizations to enable visibility on product flow and optimize detailing
- ✓ Connection with retailers creates an opportunity to support proper counselling, administration, and follow up on side effects
- ✓ Provider nudges could emphasize business opportunities for bundling contraceptives with condoms for co-protection



Interesting to investigate if and when incenting actors in the value chain to provide data (through free product) is a cost-effective way to enable end-to-end visibility



See selected company summaries on pgs. 35 and 38

4 Opportunities for health delivery programs

A portfolio approach to company support

Engaging as an industry facilitator

Quality assurance as a potential risk



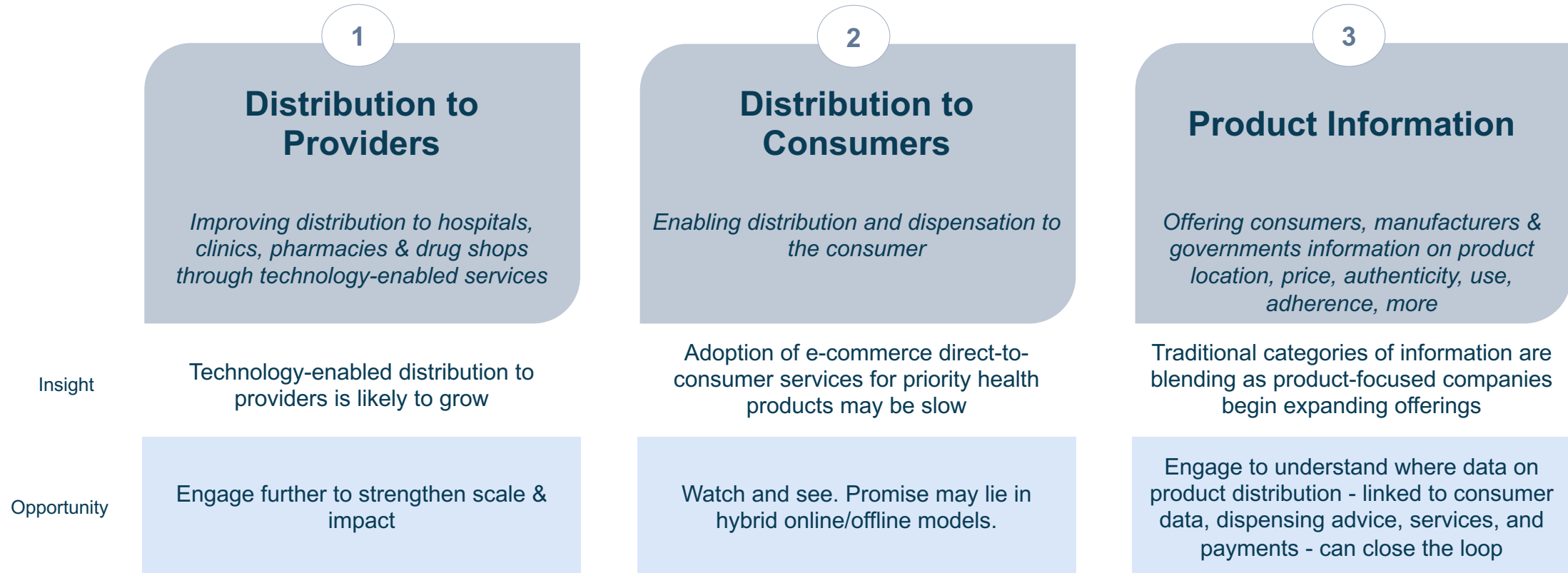
Opportunities to scale asset-light technologies that could change how health care is delivered are *intrinsically appealing*

Most innovators will *not deliver immediate impact at scale*

Some innovations will fail - *investors must be willing to experiment*

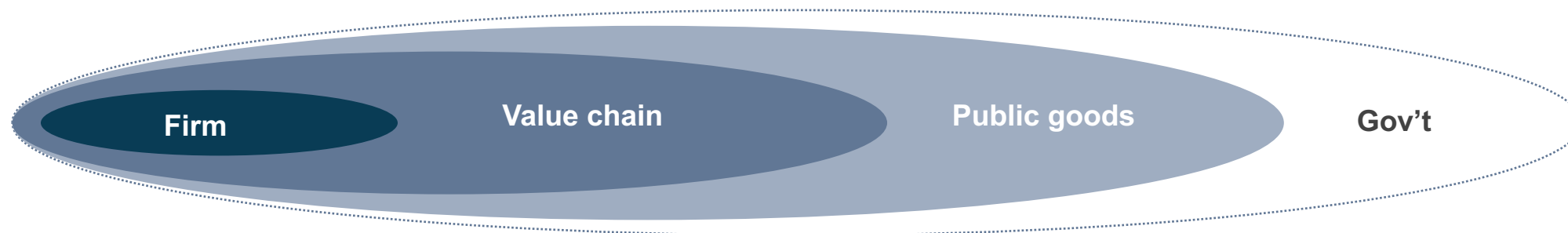


PORTFOLIO APPROACH | Innovations in Distribution to Providers and in Product Information point towards opportunities to re-imagine service delivery. Existing small grants can be managed as a portfolio to drive scale and build new visions for the future delivery of products and information.



INDUSTRY FACILITATION | In addition to providing small grants directly to a portfolio of companies, philanthropic actors working as industry facilitators could accelerate disruptive innovation

Areas of intervention in industry facilitation ¹



Role of industry facilitator	<ul style="list-style-type: none"> Invest in individual firms to strengthen business model, leadership, technical skills, increase capital 	<ul style="list-style-type: none"> Create suitable labor/inputs Strengthen sourcing channels Strengthen demand Strengthen financing for consumers, distributors, manufacturers Support those who offer services to the innovators 	<ul style="list-style-type: none"> Create consumer, producer or channel awareness of new market-based solutions Create market information and industry knowhow Create effective standards, e.g. for quality Build hard infrastructure 	<ul style="list-style-type: none"> Enabling laws, regulations and procedures are enacted Limit inhibitory taxes and subsidies Mitigate adverse intervention by politicians or officials
Opportunities for the global health community to facilitate growth in the industry	<ul style="list-style-type: none"> Invest through small grants or contracts fund, perhaps jointly managed with donors or industry Engage innovators in contracts, to buy services and better understand the business and opportunities Other? 	<ul style="list-style-type: none"> Continue to support strengthening demand and suppliers Other? 	<ul style="list-style-type: none"> Continue to create awareness of new market-based solutions to help enable scale Create effective standards for quality assurance and cost-effective mechanisms to enact them Explore technology infrastructure to enable partnerships with larger payers (e.g. invoicing, claims verification) 	<ul style="list-style-type: none"> Assess legal, tax and political situations that may inhibit scale Other?



1) Koh, Harvey et al. Beyond the Pioneer: Getting inclusive industries to scale. India: FSG, 2014.

The extent to which innovators are incented to invest in quality assurance appears low. The level of risk this entails varies. This could be an important place for grant financing to create public good.

Most innovators still depend on national certifications of suppliers or products, in addition to softer analyses such as supplier reputation. Over the past 10 months, market pressures for digital innovators to systematically assure quality of products does not appear to have increased.

Standard process used by innovators for quality assurance depend on supplier reputation and adherence to national standards

Scale of other digital platforms without attention to quality has been challenging

Identify suppliers

Innovator companies identify suppliers who can range from key agents to wholesalers to retail pharmacies

Vet suppliers

Most innovators vet quality by asking:

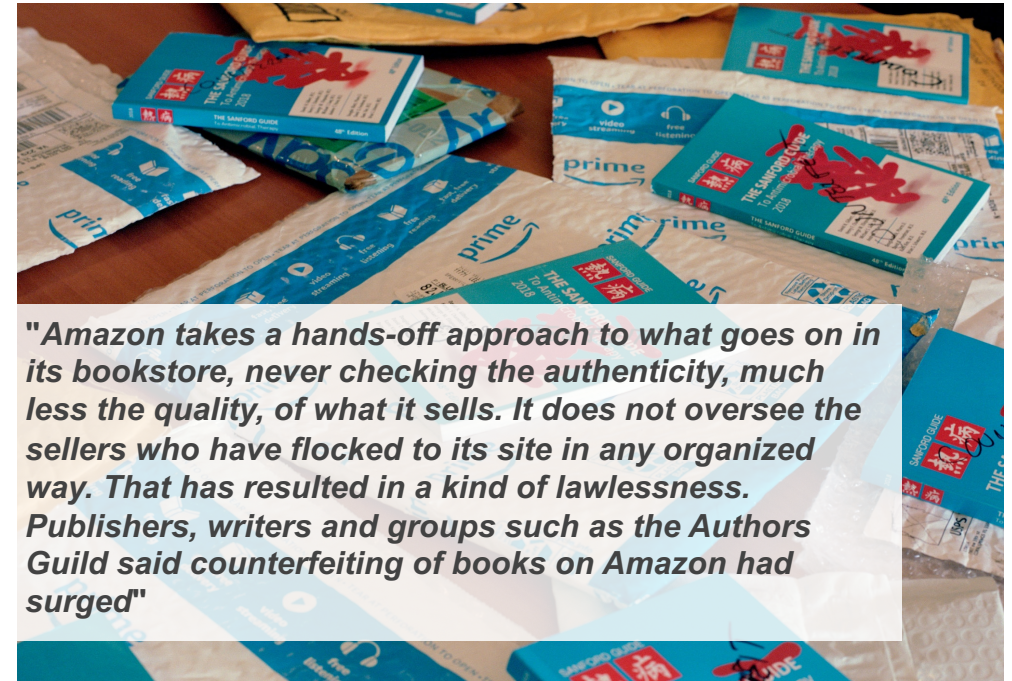
- ✓ Is the supplier or product registered/licensed nationally?
- ✓ Is the reputation of the supplier strong?

Some use a standard quality assurance checklist

Distribute

Those that pass vetting process are incorporated.

Very few innovators take other precautions such as batch testing, independent verification, track and trace, more.



<https://www.nytimes.com/2019/06/23/technology/amazon-domination-bookstore-books.html>



How can we ensure that innovators remain responsible actors within the pharmaceutical system with respect to AMR, quality assurance and more?

5 Discussion

If we believe tech interventions can change how products are distributed to providers how might we invest catalytically to ensure the industry develops to serve public health purposes?

How do you see the conceptually disparate sources and uses of data on products, consumers and services merging as we move forward? What opportunities might you see for information on product distribution to 'close the loop'?

How can we ensure protection of patient data and privacy, especially in contexts where human rights are tenuously enshrined?



6 Selected company summaries

mPedigree

PharmaSecure

Sproxil

mPharma

mClinica

MedSource

shelf life

Maisha Meds

Medsaf

Dawaplus

Kasha

MYDAWA

Healthy Entrepreneurs

my-medicines.com

Tusker

VIA Global Health

DrugStoc

MedRx

Afya pap



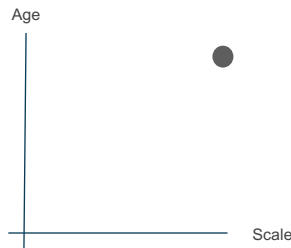
COMPANY OVERVIEW



Founded 2013 (for-profit founded)

staff

Not disclosed



Geographies 12 geographies including Tanzania, Zambia, Uganda, Rwanda, Kenya, Nigeria, Ghana

Scale Protected 2 billion products and approaching 100M users

Leadership profile

Bright Simons (Founder & President) is a Fellow at Harvard University, focusing on combining data analytics and thermosensitive polymers for temperature control and accountability management in cold chains for vaccines and biotech products.

CORE OFFERINGS

mPedigree offers several services

- 1) smart labels for serialization, which can be paired with track and trace;
- 2) Consumer loyalty and engagement campaigns for Unilever, L'Oréal, Nestlé, etc. that embed authentication into the marketing process. In addition, through an app-based platform consumers can learn about the product as the platform pulls information from a broad range of sources, can share tips on the product, and tell others about experience (including product ratings).
- 3) Regulatory technology services provide governments data-driven approaches to understand breaches to drive efficiencies in enforcement, and to leverage data in the licensure and re-licensing processes.

Core Service Areas Information



mPedigree is a mass authentication company that provides consumer loyalty campaigns and data-driven approaches to improving regulation. Also offer an app-based platform that aggregates two-way information on products for consumers, allowing for authentication, push of targeted product information, and sharing of information with others. Have protected over 2 billion products for 100M users.

BUSINESS MODEL

Revenue largely derived from volume-based charges. Some are derived via a subscription model. In the past have done consulting work (USG, others).

Product quality assurance Works with properly licensed manufacturers, support quality assurance through the supply chain.

Companies with similar business models



Projected areas of highest public health impact

- ✓ Quality of health products
- ✓ Quality dispensation
- ✓ Rural reach

Key investors Largely financed through personal investment, partnerships and co-investment. Received \$1.5M in grants (Skoll). No equity investors.

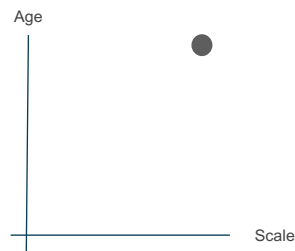
Key developments New agreement with Comesa for expansion of track and trace of agri inputs to 21 countries. Service line for thermosensitive smart labels for use in vaccine cold chains was recently accepted into the Mass Challenge accelerator, Aspen Institute and is spinning off into a separate company, Koldchain.

COMPANY OVERVIEW



Founded
2007

staff
30



Geographies Nigeria, India, Pakistan

Scale Protected 3.5 billion products through serialization for brand protection, regulatory compliance, consumer and patient engagement, and market intelligence

Leadership profile

Nakul Pasricha, President & CEO.
President & CEO

Girish Pai, Chief Business Officer

CORE OFFERINGS

PharmaSecure presents a scalable, cost effective approach to mass authentication. Unique, alphanumeric coding is encryption-based and allows for GS1 standard track and trace and consumer-authentication. Printing of codes directly on the packaging is low-cost. Consumer relationships generated from authentication can be leveraged for adherence, follow-up care. Trials in TB showed a 60% increased adherence through voice and SMS follow-up (Gates and USAID funded).

Core Service Areas Information



PharmaSecure is a mass authentication system to protect against counterfeiting that supports manufacturers with serialization, provides incentives to enable full GS1 compatible “track and trace” along supply chain, & pairs this with patient engagement. Protected 3.5 billion products.

BUSINESS MODEL

Revenue Derived from per unit subscription fees from pharmaceutical companies and sale of products.

Product quality assurance For manufacturers of medicines, Pharmasecure requires proof of registration with national regulatory agency

Companies with similar business models



Projected areas of highest public health impact


- ✓ Quality of health products
- ✓ Rural reach

Key investors Raised \$7.9M across two equity rounds of financing, the last being Series B in 2011. Lead investors: The Social Entrepreneurs' Fund, Gray Ghost Ventures, Serious Change, Innovation Endeavors.

Key developments Authenticated 500M since last data collection. Now deploying incentives for full track and trace along the supply chain. Have built leadership position in protection of nutritional supplements.

COMPANY OVERVIEW

CORE OFFERINGS



Founded 2009

staff 45

Geographies

Nigeria, Ghana, Mali, Kenya, India, US, Pakistan

Scale

Have authenticated 80M transactions, for over 150 companies. Over 20M consumers are engaged through the platform.

Leadership profile

Founder & CEO Ashifi Gogo, PhD is an engineer by training who has been named the Schwab Social Entrepreneur of the Year, named to Fortune's 40 by 40 list.

Age

Scale

Sproxil offers several B2B services to the food and beverage, agrichemical, automotive and pharmaceutical sectors, including

- 1) Smart labels for serialization, which can be paired with track and trace services for manufacturers.
- 2) Consumer engagement campaigns that offer rewards to users for specific products when they authenticate their purchase. This ensures that manufacturers' marketing budgets go towards promoting use of their authentic products.
- 3) Retailer & wholesaler loyalty program, incenting authentication through prizes, free product. This service bolsters manufacturers business intelligence by: allowing improvement of geographic targeting of marketing and provider-support services, improving detailed data on retail volumes, more. This service is being deployed in Nigeria in health (Shalina), and in the beverage industry in India.
- 4) Augmented reality services that enable high quality advice on product use being deployed in India and Nigeria.

Core Service Areas Information

!

Sproxil mass authenticates products through retail and wholesaler loyalty programs and consumer loyalty campaigns. Incentivized authentication provides in-depth data on the movement of product in fragmented supply chains. They have authenticated over 80M transactions across 7 countries and are profitable.

BUSINESS MODEL

Revenue

is derived from a per-product charge. Sproxil is profitable as of 2018.

Product quality assurance

Partner only with manufacturers who have proper regulatory approvals in each country.

Projected areas of highest public health impact

✓ Quality of health products
✓ Quality of dispensation
✓ Rural reach

Key investors

Have raised \$4.4M in equity and debt financing from Acumen Fund, Deutsche Bank and Netri Foundation.

Key developments

Recently launched retailer & wholesaler loyalty campaigns and AR product advice.

Companies with similar business models

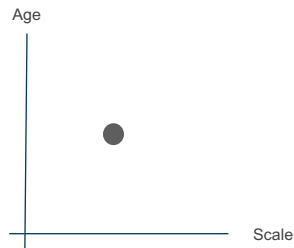


COMPANY OVERVIEW



Founded
2014

staff
175



Geographies Nigeria, Ghana, Kenya, Zambia, Zimbabwe

Scale 243 providers across the continent (98 in Nigeria, 103 in Ghana, 42 in Zambia). ~320K patients served over 2018, versus 102K in 2017

Leadership profile

Gregory Rockson, CEO & Founder, is a Skoll Awardee and WEF Global Shaper. Prior to founding mPharma he worked at the Center for American Progress, studied at Westminster College and was a fellow at Princeton University.

CORE OFFERINGS

mPharma offers a broad suite of services. For providers, the company primarily provides group purchasing and vendor managed inventory for hospitals and retail pharmacies. Hospitals pay on what is dispensed which reduces risk, in addition to obtaining access to health products at or below market prices. As of this year, they manage a retail pharmacy chain in Kenya through the acquisition of Haltons. mPharma also acts as a PBM for corporates and insurers, largely focused on patients with chronic conditions. They offer D2C services for select chronic drugs paired with an electronic financing/loyalty service (Mutti). Finally, they also offer patient support services for some manufacturers.

Core Service Areas Group purchasing, Inventory management, Stock financing & ownership, D2C distribution



mPharma is a healthcare company with a diverse set of offerings serving several types of providers (through vendor managed inventory), **consumers** (retail pharmacy paired with clinical diagnosticians, engagement, loyalty), **corporates and insurers** (PBM), and **manufacturers** (patient support).

BUSINESS MODEL

Revenue Largely generated from product mark-ups through vendor-managed inventory systems.

Product quality assurance mPharma sources from credible suppliers, with a focus on registered drugs. Further strengthening quality assurance is a priority moving forward.

Projected areas of highest public health impact

✓ Availability of health products

Model has potential to directly improve the costs to providers and consumers.

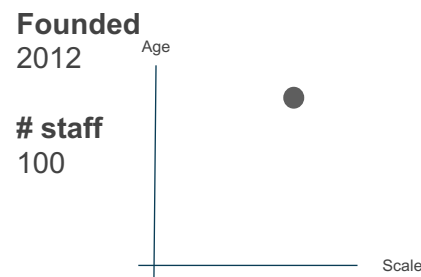
Key investors have raised \$5M in seed funding, \$6.6M Series A (Nov 2017), \$12M Series B raise (Dec 2018). Investors include Novastar, Shravin Bharti Mittal (Airtel), Social Capital, Golden Palm Investments, 4DX Ventures, Jim Breyer (early Facebook investor), and several family office investors from Senegal, Kenya, and Turkey. Interviewee noted they have also received an undisclosed amount of grant and loan financing. Daniel Vasella (fmr CEO, Novartis) and Novastar joined the Board in the Series B raise.

Key developments Acquired Haltons pharmacy chain in Kenya in March '19, one of 5 2019 Skoll Foundation awardees for Social Entrepreneurship.

Companies with similar business models



COMPANY OVERVIEW



Geographies Vietnam, Thailand, Philippines, Indonesia, Malaysia, Cambodia

Scale SwipeRx has 150K registered pharmacy professionals. Product marketplace launched in Jakarta in Q4 '18, has 400+ pharmacies (20% of city) and over 2000 SKUs

Leadership profile
Prior to founding mClinica, Farouk Meralli (CEO) held roles at Sanofi, J&J, Pfizer and Roche where he focused on emerging markets. Farouk studied at McGill and Harvard University.

CORE OFFERINGS

mClinica's core offering, SwipeRx, is a social network for pharmacy professionals offering continuing medical education, jobs, chat boards, interfaces for regulators and trade associations. mClinica also connects pharmacy professionals on its network to distributors and wholesalers as a marketplace for health products. mClinica matches pharmacy orders to partner suppliers by creating order bundles that ensure the pharmacists receive the lowest costs on products in their order. The marketplace extends pharmacy customers credit (through a 3rd party) to purchase their lowest cost bundles from any partner supplier on the platform regardless of a previous relationship or credit history.

Core Service Areas Group purchasing, Marketplace & fulfillment, Stock financing & ownership
Emerging Offerings Inventory management



mClinica grew a loyal user base of pharmacy professionals across SE Asia through its social network platform. Platform created the first digital picture of the fragmented sector in many contexts, which can be leveraged by governments (e.g. the Philippines) and NGOs to enable stewardship. Building on the relationships mClinica has fostered with users the platform is now expanding its services into product distribution. mClinica has the largest footprint of any similar company profiled but is not active in sub-Saharan Africa.

BUSINESS MODEL

Revenue Generated from other product lines: white-labeling consumer loyalty software, market research among pharmacist members, education, digitizing prescription data, more.

Product quality assurance All wholesalers/distributors on platform must have correct and valid government licenses

Companies with similar business models



Projected areas of highest public health impact
✓ Availability and affordability of health products

Model has potential to directly improve the quality of products, quality of dispensation, costs to providers, costs to consumers and rural reach.

Key investors mClinica has received >\$6.3M in investment from Patamar Capital, Global Innovation Fund, MDI Ventures of Indonesia, Endeavor Catalyst, 500 Startups, IMJ Investment Partners, Kickstart Ventures.

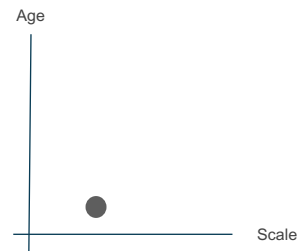
Key developments SwipeRx has minimum market share of 20% and up to 70% of the pharmacy professionals in every market it is in, SwipeRx Marketplace already has 20% of the pharmacies in Jakarta on the app within 6 months of launch, now adding >100 pharmacies every month

COMPANY OVERVIEW



Founded
2018

staff
15



Geographies Kenya

Scale >160 active clinics, pharmacies, hospitals. >500 on the waitlist. ~20% are hospitals.

3,600 health products, plus devices, consumables

Leadership profile

Dr. Peter Kamunyo, CEO, has >18 years of experience with GSK, Aon Insurance Brokers, Africa Healthcare Practice Group, Resolution Insurance’s East Africa. He sits on the boards of the E African Healthcare Federation, Kenya Healthcare Federation.

CORE OFFERINGS

Private, for-profit, member-driven company that facilitates ordering by licensed pharmacies, clinics and hospitals by connecting them to manufacturers and key agents with whom they have negotiated volume-based discounts, and provides its members stock financing solutions. It allows for more efficient, strategic purchasing by: negotiating best prices (slightly lower than market prices); providing price transparency “to the last mile”; providing credit guarantee to retailers (up to 80%); and providing data visibility to distributors/manufacturers. The platform does not control delivery; providers select their own distributors or can select a MedSource partner. MedSource also provides members capacity building services on business and finance.

Core Service Areas Group purchasing, Marketplace & fulfillment, Stock financing & ownership
Emerging Offerings Inventory management

MedSource aggregates purchases from its members and directs them to a selected group of suppliers, resulting in larger volumes for those distributors and manufacturers, reduced costs for members, and improved quality control.

BUSINESS MODEL

Revenue derived from 1) contract administration fees from distributors and manufacturers (5 distributors, 2 leading local manufacturers) and 2) small membership fees (future).

Product quality assurance Source from trusted suppliers (WHO prequalified, distribution practices are run through standardized process, reputational analysis); track and control the product movement to help ensure product integrity; MOU with MEDS is in place to do random batch testing of products.

Projected areas of highest public health impact

- ✓ Availability of health products
- ✓ Quality of health products

Model has also high potential to directly reduce costs to providers and increase rural reach. It has the potential to *indirectly* improve the quality of dispensation by reducing providers incentives to push products they’ve already purchased. Lower projected impact on costs to consumer, consumer convenience.

Key investors Management Sciences for Health invested in the company to launch.

Key developments Partnership with major manufacturer for NCD access program is underway. Partnerships with local, WHO-PQ manufacturers have been signed. Growing value & volume month-over-month.

Companies with similar business models



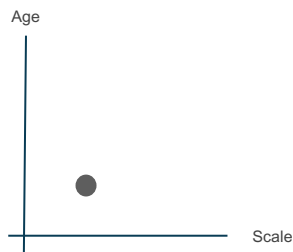
COMPANY OVERVIEW



Founded 2016

staff

30 full-time at Field
9 full-time on Shelf Life



Geographies

Abuja & Lagos, Nigeria
Nairobi, Kenya

Scale

133 community
pharmacy customers
(93 Nigeria, 40 Kenya)
13,000 subscriptions
under management;
150,000 patients served

Leadership profile

Michael Moreland, CEO, and Justin Lorenzon, CTO, co-founded and lead Field Intelligence, which offers shelf life and Field Supply, a supply chain control tower software as a service, with clients including six national public health programs in Nigeria.

CORE OFFERINGS

shelf life allows community pharmacies and drug shops to subscribe to around 500 products in each market. For each subscription, shelf life conducts demand forecasting and supply planning, procurement, delivery, stock taking, and inventory management. Pharmacies pay for stock shelf life supplies only once the products has sold. This approach removes the risk for the pharmacy of stocking, expiry, and re-allocation. shelf life's set monthly pricing on products also protects pharmacies from the volatility and seasonality of commodity pricing.

Core Service Areas Inventory planning, management, and fulfillment, alternative financing
Emerging Offerings Online storefronts and D2C fulfilled by retail clients, manufacturer data-as-a-service, tailored financial services for client pharmacies



shelf life appears to be the first company to offer full-service vendor inventory management at lower levels in the supply chain in these geographies. The model has the opportunity to help consolidate the retail pharmacy and drug shop market, by driving improvements in the quality and availability of drugs.

BUSINESS MODEL

Revenue Weekly service fees from clients and sale of products as a licensed pharmaceutical distributor in Nigeria (PCN Reg#: FCT201919212D) and Kenya (PPB License No: P2019D01041). 95% of sales on credit are collected within three days.

Product quality assurance shelf life has developed a Quality Assurance program that incorporates the WHO and Nigeria's NAFDAC's *Good Distribution Practices* to ensure its products are only from licensed sellers, authentic, and potent.

Companies with similar business models

shelf life appears to be unique in serving this level of providers.

Projected areas of highest public health impact
Availability of health products

Model has high potential to directly improve the quality of products, costs to providers, and rural reach. It has the potential to *indirectly* improve the quality of dispensation by reducing providers incentives to push products they've already purchased. Low projected impact on costs to consumer, consumer convenience.

Key investors Currently self-financed. Received a grant from the Gates Foundation in 2018 to test the model in Kenya.

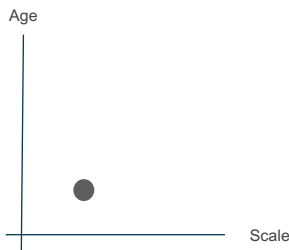
Key developments Tripled in subscriptions managed and revenue from October 2018 to March 2019 while maintaining in-stock rate above 96%. Raising capital Q3-Q4 2019.

COMPANY OVERVIEW



Founded
2015

staff
30



Geographies Kenya, Tanzania, Uganda, w/ small # of sites in Ghana, Nigeria, Myanmar

Scale ~300 pharmacies and clinics serving >120K customers, \$1.5M transactions per month. >3,000 products on marketplace.

Leadership profile

Jessica Vernon (CEO) trained in medicine, economics at Stanford, formerly worked with IPA, McKinsey, helped launch Venrock; Jenny Cheng (CTO) was tech lead at Google, engineer at Warby Parker, CS training at MIT; Dorcas Masatia, formerly IPA, Evidence Action; Afkera Daniel medicine training from Johns Hopkins, BA Harvard.

CORE OFFERINGS

Maisha Meds works with rural pharmacies who purchase a tablet to access their Android-based applications to manage sales and inventory and source quality medication. The programs work online and offline and allow pharmacies to do better demand forecasting, to see supplier availability and place orders for delivery through a single click. Maisha Meds brokered relationships with suppliers and manufacturers that allow them to offer 18% reduction in market prices, with a focus on essential health products. Maisha Meds works with MEDS as the source of their generics for quality assurance. Deliveries are completed anywhere in Kenya for \$3 in 24 hours, through partnership with G4S. In beta mode of a stock financing service which will offer pharmacies affordable microcredit. Also offer voucher services.

Core Service Areas Marketplace & fulfillment, Stock financing & ownership, Inventory management

Maisha Meds is the only company in the provider-facing category with an explicit focus on rural pharmacies and high-quality generics. They offer a more robust approach to quality control through partnership with MEDS. The dual focus on quality and value appears unique.

BUSINESS MODEL

Revenue currently from medication orders via marketplace; POS set-up and hardware sales; market access program delivery; data and insights for pharma

Product quality assurance Sources only from suppliers that can uphold highest quality standards via regular audits from manufacturers; relationship with MEDS to provide quality-assured generics

Projected areas of highest public health impact

- ✓ Availability of health products
- ✓ Quality of health products
- ✓ Cost to providers
- ✓ Cost to patients (digital vouchers)
- ✓ Rural reach

Key investors Grant financing to date (~\$800k) from the Bill & Melinda Gates Foundation, the Dioraphte Foundation, SPIDER Center, FSD Kenya, Merck, Google, Pfizer, Villgro and the Stanford Center for Innovation in Global Health. Currently raising seed financing.

Key developments Partnerships in place to add 200-300 more sites in 2019 with Kenyan MoH (2 rural counties), PSI Kenya, PSI Uganda, SHOPS Plus TZ, Defeat-NCD Partnership (UN); several pharma market access programs in development

Companies with similar business models

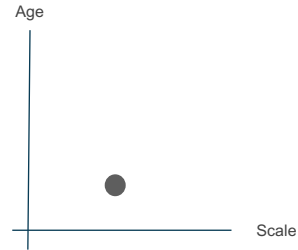


COMPANY OVERVIEW



Founded
2017

staff
15



Geographies Nigeria (Lagos)

Scale 400 registered pharmacies and hospitals, with 80 active monthly users. 2,000 products available.

Leadership profile

Vivian Nwakah, CEO, has a background in clean tech in Nigeria and previously ran a home care in health business in the US. Winner of Gates Foundation's 2019 Seedstar Malaria Challenge.

CORE OFFERINGS

Medsaf's core value proposition is providing hospitals and retail pharmacies access to group purchasing from manufacturers (tiers 1-3) to reduce price and improve quality of the products they require.

Medsaf is particularly focused on simplified, quality-assured access to 2nd and 3rd tier generics. Medsaf aims to improve product quality by cutting down purchases from the open drug markets, and reduce costs through volume-based negotiations and through improved inventory management processes.

Core Service Areas Group purchasing, Inventory management, Marketplace & fulfillment, Stock financing & ownership



Medsaf acts as a group purchaser, connecting hospital pharmacies and retail pharmacies to medications with a focus on ensuring access to quality, low-cost generic manufacturers

BUSINESS MODEL

Revenue generated from subscription payments and margins on medications.

Product quality assurance A core part of Medsaf's value proposition, quality control processes include: standardized checks for authenticity, signs of tampering/compromises, NADFAC certification and batch numbers. *Products are also randomly batch tested.*

Projected areas of highest public health impact

- ✓ Availability of health products
- ✓ Quality of health products
- ✓ Cost of products to the providers

Key investors Recently raised \$1.4M from an institutional investor, family offices and angel investors.

Key developments In addition to raising capital, established trail partnerships with insurance companies and payers/providers as a route to customer acquisition. Secured partnerships with 1st tier manufacturers to act as a tech-enabled direct distributor, which allows Medsaf to cover a broader swath of products required by their customers.

Companies with similar business models

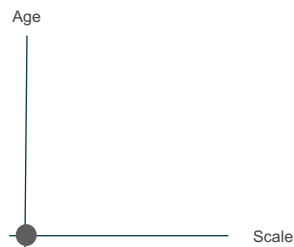


COMPANY OVERVIEW



Founded
2018

staff
3



Geographies Tanzania

Leadership profile

The concept is led by Mr. Abraham Okore, the CEO of Pyramid Pharma, an importer-distributor with operations in 7 countries. Pyramid Pharma has been a successful supplier of rural 2nd tier drug shops in Tanzania for many years

Scale pre-launch

CORE OFFERINGS

Dawaplus is a pre-launch concept for a chain of rural, 2nd tier drug shops who offer high-quality, low-cost care for NHIF beneficiaries and rural customers paying out-of-pocket. Dawaplus will leverage a partnership with a wholesaler already servicing rural 2nd tier drug shops (Pyramid) in the supply of generics and supply of fast-moving FMCG products. Disintermediation allows Dawaplus to cut out significant markups along the traditional supply chain, and mandate their shops sell at price points lower than what is currently available on the market. They expect the savings to reduce the price to consumers by 75%. Dawaplus will franchise and own the shops.

Core Service Areas Inventory management, Stock financing & ownership

Emerging Offerings Group purchasing, Marketplace & fulfillment, D2C distribution



Dawaplus is a pre-launch chain of rural, 2nd tier drug shops that offers consumers access to low-cost generics and FMGC products through partnership with a wholesaler.

BUSINESS MODEL

Revenue Revenues are expected for customers paying out-of-pocket and from payments by the national health insurance scheme. Over time, they seek 80% of revenues from NHIF beneficiaries.

Product quality assurance Many products are sourced from Pyramid Pharma, who control for quality tightly. Franchisees can also source from other suppliers that are approved by TFDA and PC. Regulation of product quality in Tanzania by the TFDA and PC is quite strong.

Companies with similar business models



Projected areas of highest public health impact

- ✓ Availability of health products
- ✓ Quality of health products
- ✓ Quality of dispensation
- ✓ Cost to provider
- ✓ Cost to consumer
- ✓ Customer convenience
- ✓ Rural reach

Key investors Dawaplus is self-financed and expects to break even after 4 years. They're not currently accepting outside investment.

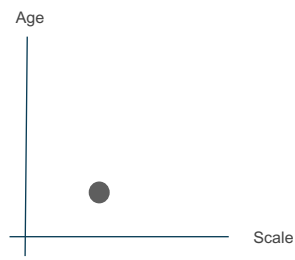
Key developments Pharmacy and PPMV ownership and franchising laws are nascent. Clarity on the regulations would ease entry of a chain. Dawaplus is in discussion with the Pharmacy Council on the regulations for licensure and monitoring of chains.

COMPANY OVERVIEW



Founded
2016

staff
50 core staff,
75 support staff



Geographies Kenya, Rwanda

Leadership profile
Joanna Bichsel, CEO and co-founder, held roles at Microsoft and the Bill & Melinda Gates Foundation before launching Kasha in Rwanda and Kenya.

Scale 215K units of products delivered to date. At end of 2018 selling close to 18k units per month.

CORE OFFERINGS

Accessible e-commerce platform focused on women’s health and personal care, accessible via feature phones. Kasha’s platform allows customers to purchase products and facilitates the confidential delivery of these products to D2C, through pick-up points or via agents. Movement of product is facilitated by 3rd parties in Kenya. For some personal care products Kasha works directly with manufacturers or key suppliers, for others Kasha sources from trusted pharmacies in local areas. Kasha provides customers (largely manufacturers) a channel to reach women (especially lower-income women), and market insights on these untapped consumers. For some priority products (e.g. HIVST, contraceptives for youth) Kasha distributes for free on behalf of the Rwandan government through a sustainable model.

Core Service Areas Marketplace & fulfillment, D2C distribution
Emerging Offerings none

! Kasha is a women-focused accessible e-commerce company offering direct access to low-cost, high-quality health and personal products and providing global manufacturers access to new markets and consumer data

BUSINESS MODEL

Revenue 60% of revenues are driven by B2B relationships with manufacturers and donors (e.g. Unilever, J&J) for whom they provide market insights and a channel. Between 2017-18 in Rwanda D2C revenues grew ~800% year-over-year.

Product quality assurance For personal care products Kasha sources direct from manufacturer and key distributors. For pharmaceutical products Kasha has partnerships with pharmacies who are vetted through a standardized process.

- Projected areas of highest public health impact**
- ✓ Availability of health products
 - ✓ Quality of dispensation
 - ✓ Customer transaction costs
 - ✓ Rural reach

Key investors Have raised \$2.5M in equity-level investments from investors including VestedWorld (lead), Partner’s Group Impact, Sorenson Impact Fund, East Africa Investments, The Case for Her, Sunu Capital, Beyond Capital, and others. Have received \$2.5M in grant financing from Unilever Transform, The Bill & Melinda Gates Foundation, Packard Foundation. Began valuation in June and recently launched Series A to scale across Kenya, achieve profitability and start piloting in 3rd country end of 2020.

Key developments Launched in Kenya in 2019 and have developed a model that allows for delivery to rural areas. With Packard Foundation, working with youth in Rwanda to provide access to products at a subsidized rate in a subscription model.

Companies with similar business models

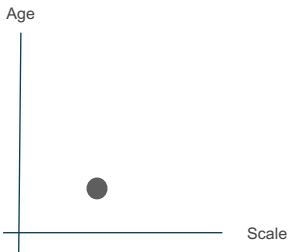
In the D2C space, Kasha’s model appears unique.

COMPANY OVERVIEW



Founded
2017

staff
30



Geographies Kenya (focused on greater Nairobi, with delivery nationally overnight)

Scale 80K registered. 40% of orders on a monthly basis from repeat customers.

Leadership profile
Founder & Chairman Neil O’Leary (CEO, Ion Equity) has created businesses with a combined turnover of over \$7B. Tony Wood, Managing Director, has a history of scaling software, internet, broadcasting services in East Africa through roles with Wananchi Group and Nokia.

CORE OFFERINGS

MYDAWA is a licensed e-pharmacy and supply chain solution provider for Rx, OTC and food supplement products that controls the entire supply chain, down to delivery to the patient. Platform carries MYDAWA branded generics, other prescription, OTC, wellness, cosmetic and self-test products for a total of 5,000 products available on the platform. Enabled by fully digitized and transparent process sitting on a Microsoft Nav ERP. MYDAWA delivers to locations of the customer’s choice, using qualified Pharmtechs who are backed by a call center. MYDAWA boasts an impressive system for product tracking and packaging, to ensure quality from point of origin to dispensation. For MYDAWA branded products, control of distribution from manufacturer to patient reduces costs by ~40%. Pricing to consumers for entire basket of products is ~20% below current market prices. MYDAWA is starting work in rural areas for high-cost, chronic medications that don’t require immediate delivery. These products are delivered direct to pharmacist, and pharmacist takes 10% of the cost of the sale.

Core Service Areas Inventory management, Stock financing & ownership, D2C distribution
Emerging Offerings None

! MYDAWA, a D2C model, offers quality controls along the entire supply chain from the manufacturer to the consumer, paired with highly controlled quality of dispensing advice, and price reductions. Offering hybrid “D2C” model for rural areas.

BUSINESS MODEL

Revenue Generated from product sales, from both consumers, insurers and wholesale of MYDAWA branded generics.

Product quality assurance Products sourced directly from WHO-certified manufacturers. Products are tracked from manufacturer to patient delivery through unique track and trace system. Each product has a tamper proof seal with a unique authentication code that is specific to the product source, patient, provider and product.

Companies with similar business models

In the D2C space, MYDAWA’s model is unique.

Projected areas of highest public health impact

- ✓ Availability of health products
- ✓ Quality of health products
- ✓ Quality of dispensation
- ✓ Cost to provider
- ✓ Cost to consumer
- ✓ Customer convenience
- ✓ Rural reach

Key investors Hold \$7M in private equity from ION Equity. Recently secured \$3M in additional investment from Africa HealthCare Master Fund for national expansion in Kenya.

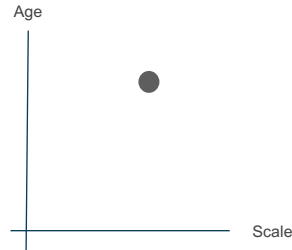
Key developments Have begun working with several private insurers in Kenya, and are now generating some revenues from wholesale of MYDAWA branded generics.

COMPANY OVERVIEW



Founded
2012

employees
30



Geographies Uganda, Kenya, Tanzania, Ghana

Scale Grown 150% since 2018 report with 4,000 active Entrepreneurs, 90% of whom have repaid initial loans for products in their first two years

Leadership profile

Joost van Engen (CEO) brings many years of experience in the distribution of generic medications & foods across Africa. Cees Rustenhoven (CFO) previously served as financial director of Haydom hospital in Tanzania.

CORE OFFERINGS

Healthy Entrepreneurs engages existing rural community health workers in a sustainable business by providing them access to low-cost, high-quality branded generics and health commodities. The business is driven by a tightly-controlled supply chain that reduces mark-ups and allows the Entrepreneurs to sell high-quality products at lower cost than what is currently available in rural areas, and retain a margin on each sale. The savings generated also fund Healthy Entrepreneurs' lean management model. Entrepreneurs use low-cost smartphones to provide accurate and accessible information to their customers about a wide range of health-related topics, to manage their business and reordering, and provide Healthy Entrepreneurs, their funders and the governments real-time visibility into the flow of information, services and products in rural areas.

Core Service Areas Inventory management, Stock financing & ownership, D2C distribution



Healthy Entrepreneurs engages existing rural community health workers in a sustainable, customer-oriented business by providing them access to tightly-controlled supply of low-cost, high-quality branded generics. This agent-based franchise model is unique in seeking sustainability, powered by the cost savings generated through better control of supply.

BUSINESS MODEL

Revenue derived from by the sale of Healthy Entrepreneurs products, which finance the Entrepreneurs' income and the 30 in-country network management staff salaries.

Product quality assurance buying from suppliers preselected based on their QA/QC system.

Companies with similar business models


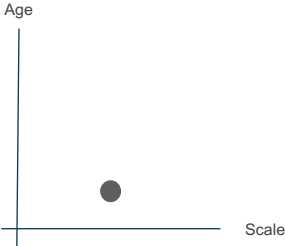


Indian and national wholesalers and resellers of pharmaceuticals; however, do not operate in the remote villages where HE operates.

Projected areas of highest public health impact

- ✓ Availability of health products
- ✓ Quality of health products
- ✓ Quality of dispensation
- ✓ Cost to provider
- ✓ Cost to consumer
- ✓ Customer convenience
- ✓ Rural reach

Key investors Original investment from small grants.

Key developments Piloting with telemedicine with nurses & physicians in Kenya & Uganda providing advice, consultations and prescriptions.

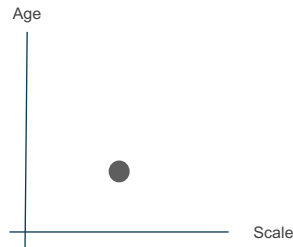
COMPANY OVERVIEW		CORE OFFERINGS
	Founded 2017	Advantage Health Africa offers several products to support pharmacies. My-medicines.com is a digital platform that leverages its network of pharmacies to fulfill orders and deliveries to end consumers. Employing an online-offline business model, the consumer-facing platform allows consumers to purchase and arrange for direct delivery from a selection of 5,000 listed products through a network of franchise and affiliated pharmacies. The platform also provides visibility into several retail chain pharmacies inventories using a back end aggregating platform called CPN-Nexus (Community Pharmacists of Nigeria - Nexus). The information on stock is made available to consumers in the area who can fulfill their orders more easily. Advantage Health Africa also has products related to loans for pharmacies, upskilling, customer acquisition, low-cost loans.
	# staff 4	
		Core Service Areas D2C distribution, Stock financing & ownership, Consumer information Emerging Offerings Franchising of offline pharmacy chain (myPharmacy)
<div> <div> Geographies Nigeria (Lagos is the largest concentration), with delivery to towns and rural areas throughout the country Scale 981 pharmacies on platform. 1,000 total users on the consumer-facing platform with 30-70 monthly orders and 40% using repetitively </div> <div> Leadership profile Abimbola Adebakin, CEO, of Advantage Health Africa, has four service lines related to pharmacy. Previously Adebakin held roles in pharmacy, consulting, and in support to entrepreneurship. </div> </div> <div>  Leverages an online-offline network of pharmacies to arrange for D2C distribution of medications throughout the country; uses inventory management platform and other tech-enabled services to link consumers to retailers who have desired products in stock </div>		
BUSINESS MODEL		
Revenue derived from product commissions product (convenience fee per transaction), advertising on the website, and product promotion	Projected areas of highest public health impact <ul style="list-style-type: none"> ✓ Availability of health products ✓ Consumer convenience ✓ Rural reach 	Key investors Currently self-financed. Seeking private equity to expand. Participated in SeedStars competition and were 1st runner up.
Product quality assurance The companies vet the pharmacies and ensure they have adequate quality assurance standards in place.		Key developments Partnership for deliveries in rural areas EMS. Recent focus on developing online-offline network through acquired and franchised pharmacies in order to expand D2C service offerings. In the process of uploading 6,000 additional products to the digital platform.
Companies with similar business models 		

COMPANY OVERVIEW



Founded
2014

staff
30



Geographies India (2500 villages)

Scale Fulfill >15K orders per month. Growing 15% month-over-month, 4.5X over last 4 quarters. In April moved 85 tonnes of pharmaceuticals through 5K shipments.

Leadership profile In summer of 2019, Amit Akkihal will join as CEO. Over the previous 8 years, Amit led strategy at Logistimo, balancing impacts across Africa and Asia with business sustainability.

CORE OFFERINGS

Tusker has developed a marketplace to facilitate low-cost delivery of health products to rural areas. Tusker aggregates orders for health products, combining them with orders for consumer goods, industrial goods, and more. The software system optimizes the truck loads and routes, auctions fulfillment tasks to drivers and logistics managers to ensure quality. Deliveries are largely fulfilled same-day. The ability to restock more easily has changed the stocking behavior of the pharmacists – not waiting for categories of drugs to stock out and broadening the range of stocks that they carry. Tusker's services can be utilized as a 3PL solution for manufacturers.

Core Service Areas Marketplace & fulfillment
Emerging Offerings

Tusker creates a novel last-mile transport network in rural areas through data-driven aggregation of demand for transport and constructing optimal truck loads, routes and schedules. Data systems allow for real-time tracking of fulfillment and continual optimization of the driver and end-consumer experience. The platform enables delivery of a broad range of products, of which pharma and FMCG are the largest categories

BUSINESS MODEL

Revenue generated from the difference in prices paid to drivers and prices paid to Tusker for delivery.

Product quality assurance Tusker does not quality assure the products, but quality assures the fulfillment services through a photo-enabled track and trace system. This reduces opportunities for tampering, degradation, entry of counterfeits, diversion of product, more. Temperature controls, via Logistimo, are developed but not yet utilized.

Companies with similar business models

Real rural competitors still lacking though this may change as companies like Senga, Sendy, MaxGo, Grab, Uber Freight grow. Today, competing against the existing solution (informal agents) with whom they hope to partner to improve market function.

Projected areas of highest public health impact

- ✓ Availability of health products
- ✓ Cost to provider
- ✓ Rural reach

Key investors To date \$2.45M has been invested, mostly through non-dilutive grant financing from the Shell Foundation. Equity investors (through Logistimo) are Rao Romano, Vinod Khosla.

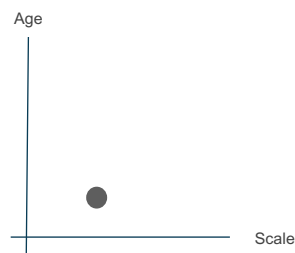
Key developments Appointed CEO Amit Akkihal, signed a bridge round of \$750K. Geographic expansion in India is underway. Tusker technology has been licensed for a Gavi project for vaccine distribution in Uganda.

COMPANY OVERVIEW



Founded
2015

staff
9



Geographies Global

Scale Delivered product to over 48 countries with ~450 distributors in the network. Total transaction volumes are still growing, with over 2x growth in 2018. Biggest markets by volume are S Africa, India, Ghana. Biggest markets by value are S Africa, Ghana, Mali.

Leadership profile
Noah Perin (co-founder & CEO) previously worked on the commercialization team at PATH, and held roles at Genentech, Microsoft.

CORE OFFERINGS

VIA Global Health is a purchasing platform for medical equipment linking manufacturers and distributors in underserved markets. VIA eliminates the friction and inefficiencies of serving local markets by 1) building product awareness and transparency around pricing, 2) optimizing delivery logistics and reducing costs, and 3) freeing the flow of capital, and derisking payments and financing.

Core Service Areas Marketplace & fulfillment
Emerging Offerings None

! VIA creates a marketplace by linking global manufacturers with distributors in new and 'harder-to-reach' markets. VIA provides services to de-risk and simplify market entry, expanding access to devices globally.

BUSINESS MODEL

Revenue are derived from a percentage of each sale and advisory services on market entry, plus some emerging monetization of market data. 300% growth in revenue in 2018.

Product quality assurance All products are approved by regulatory boards in the countries in which they are sold.

Companies with similar business models

None.

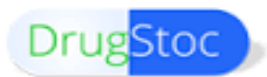
Projected areas of highest public health impact
✓ Availability of health products

The model has the potential to reduce costs to providers as well.

Key investors Have raised \$725K from 500 Start Ups, DRK Foundation and other angel investors.

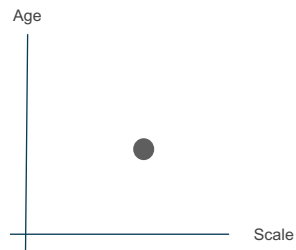
Key developments 2x growth in transaction, 3x growth in revenues in 2018. Since 2017 have impacted 450K patients.

COMPANY OVERVIEW



Founded 2015

employees
27



Geographies Nigeria (Lagos, Ogun) and others not disclosed

Scale 300 hospitals, 850 pharmacies, 1M prescriptions/year and 300% growth rate PA.

> 1,000 products including OTC, generic & branded, nutritional, supplements, consumables

Leadership profile

Chibuzo Opara, MD and Adham Yehia co-founded the company as an outgrowth of their advisory firm Integra Health.

CORE OFFERINGS

DrugStoc is an omni-channel procurement partner for health providers that offers

- 1) A marketplace for 850 retail pharmacies and PPMVs providing quality control, cost control, elimination of counterfeiting, merchandising services, and unhindered platform access to health providers;
- 2) Group purchasing for over 300 hospitals in Lagos; and
- 3) Direct-to-provider services for chronic care patients, where the physician can provide the prescription online, which is verified, and then picked up by the consumer at the physician's office.

Core Service Areas Direct to provider distribution, Group purchasing, Marketplace & fulfillment, Stock financing & ownership

Emerging Offerings Inventory management, Information



First digitally enabled platform in Nigeria for pharmaceuticals, DrugStoc provides group purchasing to hospitals & offers a marketplace for health products to retail pharmacies and accredited drug shops. It is the largest company on the continent in this category, by number of providers served.

BUSINESS MODEL

Revenue based on sales commissions and drug distribution markup. Cost drivers for growth are warehouse operational costs, distribution costs, quality control and human resources.

Product quality assurance DrugStoc is ISO9001/2015 Certified for QMS and QDP. Tracks batch numbers and expiry dates, and replaces expired product (<2 years) free of charge.

Projected areas of highest public health impact

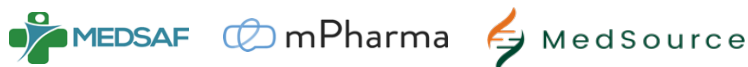
- ✓ Availability of health products
- ✓ Quality of health products
- ✓ Rural reach
- ✓ Health provider compliance

Further expansion to serve PPMV could create exponential impact on quality, price for lower-income consumers.

Key investors mix of private investment from founders, Vested World, Growth Capital, and grant/social investment. Currently supported by a Foundation grant to service PPMV and vaccine tracking using RFID.

Key developments the Associate GP Network of Private Practitioners (AGPNPN) have recently signed on to DrugStoc's group purchasing program. Track and trace using blockchain and markers, cold chain services and data analytics for internal optimisation and external use in 2022 are emerging offerings. New platform launching in Q4 of 2019.

Companies with similar business models

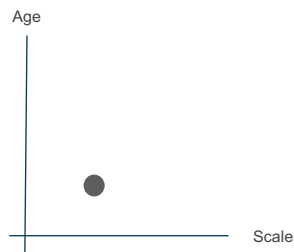


COMPANY OVERVIEW



Founded 2015

employees
12



Geographies Ghana
(Accra, W. Region, E.
Region, Central, Ashante)

Leadership profile
Hayford Nkansah Brako, CEO, is a
pharmacist by training.

Scale Serves 421 retail
pharmacies. The app itself
has over 10,000 downloads.

CORE OFFERINGS

MedRx offers

1. Group purchasing where retailers place orders and suppliers bid to fulfill the requests. Prices are set every 3-6 months and are ~15% below market rates.
2. Inventory Management is through IT application that handles stocking and reordering and uses predictive analytics to support “automated requisitions”.
3. Direct-to-Consumer through a mobile app that allows customers to find health products & refill prescriptions – currently in its pilot stage, with full launch imminent.

Core Service Areas Group purchasing, Inventory Management, Marketplace & fulfillment
Emerging Offerings D2C distribution



MedRx offers retail pharmacies access to digitally-enabled group purchasing with reduced prices and pricing variability. It also offers a consumer-facing solution that can help direct customers to pharmacies it serves.

BUSINESS MODEL

Revenue derived from a undisclosed sign-on fee that retail pharmacies, wholesalers and importers pay as well as a 1% transaction fee. D2C app expected to generate revenue through paid advertisements and delivery to consumers in the near future.

Product quality assurance Quality assurance is done at the pharmacy level, ensuring all medicines carried are from FDA-approved and registered sources. Batch testing is not currently performed.

Companies with similar business models



Projected areas of highest public health impact

- ✓ Availability of health products
- ✓ Quality of dispensation
- ✓ Cost to consumer
- ✓ Consumer convenience

Model has high potential to directly improve the quality of products, costs to providers and rural reach. It has the potential to *indirectly* improve the quality of dispensation by reducing provider incentives to push products they've already purchased. Low projected impact on costs to consumer, consumer convenience which is likely to increase with the full launch of the D2C app.

Key investors Grants and private equity. Member of the Merck Accelerator (\$15K), winner of the MTN Entrepreneurship challenge (\$25K) and winner of the GAIN Pitch Competition at the British Council.

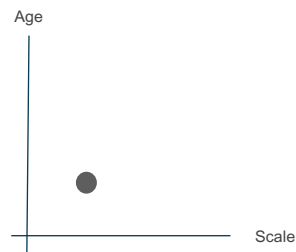
Key developments The current revenue model has allowed the company to expand from 300 to 421 providers, and widen the consumer base through app downloads. Plans to start monitoring daily active use of the D2C app are underway.

COMPANY OVERVIEW



Founded
2016

staff
12



Geographies Kenya, Tanzania, Zimbabwe, Zambia, (pre-launch in Uganda, Egypt and Ghana forthcoming)

Scale 20,000 active users (3,000 glucometers distributed to date)

Leadership profile

The app is a service line of Baobab Circle Limited, a firm founded in 2016 and dedicated to using mobile technology to address the burden of chronic diseases in Africa.

CORE OFFERINGS

Afya Pap is a health app centered on hypertension, diabetes, sexual health and pregnancy. The app offers an AI-enabled chatbot, personalized daily health tips, direct-to-doctor chatting, a peer-to-peer forum, and detailed insights on physiological readings uploaded by users. The physiological tracking algorithm is further refined with blood sugar and blood pressure readings taken through a smartphone-enabled glucometer, for which Afya Pap has exclusive distribution rights. Glucometers and a 6-week supply of test strips are made available to consumers at a discounted cost through private insurance delivery networks.

Core Service Areas Information, inventory management



Afya Pap offers a consultative channel for users with high blood pressure, diabetes or sexual health queries to seek professional health advice and receive personalized health tips to manage their conditions, and a unique product distribution channel for a low-cost glucometer and test strip manufacturer.

BUSINESS MODEL

Revenue Revenue-sharing agreements with telecommunications companies and partnerships with insurance companies and corporates (buy into chatbot service, glucometers and test strips to offer as benefits to customers).

Product quality assurance Glucometer and test strips are FDA-approved, compliant with EU and national regulations. There is no option for track and trace, but are currently setting up a warranty system with country distributors for product replacement.

Companies with similar business models

Some Chinese companies have started to integrate data-tracking components but have not deeply penetrated markets on the African continent. Other companies (Health Coach, Ask a Doc) have developed chatbots and daily health tracking tools for topics such as mental and sexual health, but do not engage in product distribution.

Projected areas of highest public health impact

- ✓ Customer convenience
- ✓ Quality of dispensation
- ✓ Cost to provider (insurance companies)
- ✓ Cost to consumers (insurance beneficiaries)

Key investors Seed financing (pre-seed round closed at 500k USD at end of 2016; official seed round obtained an additional 1.3M USD). Lead investor is CRE, a venture capital firm largely focused on commercial investments on the African continent.

Key developments Geographic range and user base have expanded in the previous 10 months, and the scope of the app has widened to include sexual health and pregnancy. Primary focus has shifted from mobile network operators to insurance partners (incl. Strategic in Tanzania, Fidelity and Madison Life in Zambia, and Jubilee in Kenya).