The GSMA represents the interests of mobile operators worldwide, uniting more than 750 operators with almost 400 companies in the broader mobile ecosystem, including handset and device makers, software companies, equipment providers and internet companies, as well as organisations in adjacent industry sectors. The GSMA also produces the industry-leading MWC events held annually in Barcelona, Los Angeles and Shanghai, as well as the Mobile 360 Series of regional conferences.

For more information, please visit the GSMA corporate website at www.gsma.com

Follow the GSMA on Twitter: @GSMA

The Ecosystem Accelerator programme focuses on bridging the gap between mobile operators and start-ups, enabling strong partnerships that foster the growth of innovative mobile products and services. These partnerships bring impactful mobile solutions to the people and places that need them most, generating the greatest socio-economic impact. In particular, the programme operates an Innovation Fund which supports African and Asian start-ups with direct funding, technical assistance, and connections with mobile operators. The programme is supported by the GSMA, its members, the UK Department for International Development (DFID) and Australia’s Department of Foreign Affairs & Trade (DFAT).

Learn more at www.gsma.com/ecosystemaccelerator or contact us at accelerator@gsma.com

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Foreword

Welcome to the sixth edition of the GSMA Ecosystem Accelerator Compass, a publication covering the latest developments from start-ups and mobile operators across Africa and Asia Pacific, and the collaborations and sustainable solutions that are helping to address the United Nations Sustainable Development Goals (SDGs).

More than ever, we are encouraged by the achievements of the 34 start-ups in the three cohorts of the GSMA Ecosystem Accelerator Innovation Fund. As of August 2019, they have served the needs of over 2.7 million users across 23 markets and have raised a combined 42 million GBP since joining our portfolio — eight times more than we allocated to them through the Fund. This is not only a testament to the relevance of their solutions, but more importantly it gives them the means to continue scaling their business and have an impact on the lives of their customers. Through 20 different partnerships with mobile operators, they are ensuring that digital technology is truly at the core of their solutions.

Whether one considers data the new oil or the new gold, there is no denying the growing importance of data analytics. We decided to make that trend the focus of this edition’s Mobile Technologies for the SDGs section, showing how data analytics, when used appropriately, can help start-ups unlock social impact in areas as diverse as health, energy and education. All companies generate data, and those in emerging markets are no exception; most collect data and, increasingly, many are extracting insights from it. The section looks at the various types of data analytics, how start-ups are leveraging them and highlights how mobile operators and data-driven start-ups can work together to create positive socio-economic benefits for users.

Like previous editions, we turn the spotlight on initiatives launched by mobile operators to play a stronger role in local and regional entrepreneurship ecosystems, whether as investors, sponsors or mentors. We also feature solutions from four start-ups in our Innovation Fund portfolio that are leveraging mobile and digital technology to address challenges in their societies and economies, from health (CoDoc in Sri Lanka) to agriculture (AgroCenta in Ghana), recycling (Coliba in Côte d’Ivoire) and logistics (Kargo in Myanmar). All four ventures are working with mobile operator partners and using data analytics to unlock value for both their business and their customers.

We hope you enjoy this edition and would appreciate your help in drawing attention to the inspiring work of start-ups and mobile operators to address the SDGs. As always, feedback and questions are welcome.

Max Cuvellier
Head of M4D Utilities and Ecosystem Accelerator
MOBILE TECHNOLOGY FOR THE SDGs

How emerging market start-ups are using data analytics to unlock local socio-economic impact
Processing, analysing and understanding data are critical to achieving the SDGs. Data analytics1 have the potential to improve the lives of those at the bottom of the pyramid through advancements in health, education and other development outcomes. The advantages of data analytics for enterprises of all sizes are well documented: data analytics have a profound impact on the ability of a business to improve efficiency, cut costs and drive revenue and profits. Similarly, data analytics can unveil a great deal about their customer base, markets and much more. A survey conducted by Accenture revealed that data analytics scored very high among African and Asia Pacific business leaders: 57 per cent and 61 per cent, respectively, report that this is an investment area for their businesses2 as it enables them to better understand their customers and improve business outcomes.

### Types of data analytics and their uses

All companies generate data. Most collect data and, increasingly, many are extracting insights from it. Data analytics is a multi-stage process in which each step produces a particular conclusion. There are four types of data analytics — descriptive, diagnostic, predictive and prescriptive — each of which involves a distinct set of actions that yield different results depending on the business need.

- **Descriptive analytics** answer the question: *What’s happening?* They describe or summarise historical data and make it easier to interpret. Common examples of descriptive analytics are reports or data visualisation dashboards that provide historical insights into a company’s operational or financial metrics.

- **Diagnostic analytics** go beyond presenting information to understand *why something is happening*. With diagnostic analytics, one could understand a sudden increase or decrease in website traffic or why sales from a business unit are up or down significantly from the same quarter last year. The goal of diagnostic analytics is to locate the root cause.

- **Prescriptive analytics** prescribe *what action to take* to eliminate a future problem or take full advantage of a promising trend. Prescriptive analytics is an emerging area of analysis that leverages both existing data and action/feedback data to guide decision makers towards a desired outcome. For instance, prescriptive analytics is being able to identify repeat purchases based on customer analytics and sales history. Apart from answering “What will happen if...?”, prescriptive analytics also tackles the question, “*What should we do to reach the desired outcome?”*

- **Predictive analytics** reveal *what is likely to happen*. They use the findings of descriptive and diagnostic analytics to detect tendencies, clusters and exceptions, and then predict future trends, making it a valuable forecasting tool. Through predictive analytics, companies can anticipate consumer behaviours and identify subscribers most likely to churn.

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1. Data analytics refers to extracting, translating, modelling and drawing conclusions from data to derive insights.
3. To avoid algorithmic bias, companies can avoid algorithmic bias by actively striving to avoid discrimination in the data that is provided to the AI in the first place.
<table>
<thead>
<tr>
<th>Start-ups</th>
<th>High-level description</th>
<th>Descriptive</th>
<th>Diagnostic</th>
<th>Predictive</th>
<th>Prescriptive</th>
</tr>
</thead>
<tbody>
<tr>
<td>PrepClass (Nigeria)</td>
<td>Digital tutoring marketplace that connects learners and teachers</td>
<td></td>
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<tr>
<td>Greenovator (Myanmar)</td>
<td>Digital marketplace for agricultural inputs and outputs</td>
<td></td>
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<tr>
<td>Baye7 (Egypt)</td>
<td>Culturally sensitive digital carpooling solution for daily commuting</td>
<td></td>
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<tr>
<td>Kargo (Myanmar)</td>
<td>Online platform allowing businesses or individuals to request a truck for pick-up and delivery services</td>
<td></td>
<td>✓</td>
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<tr>
<td>Musanga (Zambia)</td>
<td>Mobile platform to send parcels through a network of independent cyclists, riders and drivers</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Taskmoby (Ethiopia)</td>
<td>Mobile platform connecting skilled workers from the informal sector with customers</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Optimetriks (East Africa)</td>
<td>Crowdsourced mobile-based and real-time data collection service for African retail companies</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Qlue (Indonesia)</td>
<td>Civic engagement app for users to report or share their neighbourhood conditions with city officials or businesses</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>
**Start-ups, data analytics and the SDGs**

Data-driven start-ups using mobile technology continue to make significant contributions to the SDGs. The examples below feature the GSMA Ecosystem Accelerator start-ups and Mobile for Development Utilities grantees that are leveraging data analytics to effect positive socio-economic change through their operations.

### Start-ups

**GREENOVATOR (MYANMAR)** is a platform that provides farmers with information and advice to improve their operations and increase yields. The solution also allows traders to identify where to source produce promptly and provides a platform for vendors to project demand for agricultural inputs. Greenovator also falls under SDG 2.

**EFISHERY (INDONESIA)** runs an Internet of Things (IoT) mobile-based solution that boosts the efficiency and productivity of fish and shrimp farmers. The solution, Smart Feeder, uses sensors to detect the appetite of fish and shrimp and automatically feeds them the optimal amount.

**SEHAT KAHANI (PAKISTAN)** is a platform that provides affordable health care to people in rural areas and urban slums across Pakistan. The platform connects users to qualified women doctors through virtual and mobile-enabled consultations. Learn more here: Sehat Kahani case study.

**PREPCCLASS (NIGERIA)** is a tutoring marketplace that connects students and tutors through an online platform. A pool of curated teachers who have been interviewed and thoroughly vetted offer their services to learners, providing a source of income for tutors while also supporting the education of Nigeria’s students. Learn more here: PrepClass case study.

### Use of data analytics

**Greenovator**'s current focus is on descriptive analytics. It collects data and information from farmers, vendors and agricultural input suppliers. The start-up is trying to understand how to use data analytics to serve customers more effectively and gain better insights by working with an external data scientist through the Australian Volunteer Network.

**Efishery** collects and analyses fish and shrimp farm data, such as feed usage, productivity, survival rate, water quality and fish behaviour. After analysing the data points and information, eFishery provides recommendations to farmers on how to optimise the yield. The data can be accessed through a web dashboard and mobile apps. Using a proprietary algorithm, eFishery helps fish and shrimp farmers connect with feed manufacturers, banks and buyers by predicting feed usage and harvest, and generates credit scores.

**Sehat Kahani** uses its patients’ anonymised data to better understand disease epidemics, dynamics and trends in different geographical areas of Pakistan. PrepClass relies mainly on descriptive analytics by gathering tutors’ and learners’ data points from records and then using the data to connect learners with the most suitable tutor.

### SDGs

**CITYTAPS (NIGER)** developed a water utility subscriber management solution that includes a smart prepaid water meter using Orange mobile money and M2M technologies. The solution allows households to make micro-prepayments for their water at any time using mobile money. CityTaps’ solution monitors meter usage and performance remotely. The start-up’s target customers are primarily water utility providers.

**KOPAGAS (TANZANIA)** makes clean and efficient liquid petroleum gas (LPG) affordable and available to low-income households through its pay-as-you-go (PAYG) smart metering technology and partnership with Tanzania’s leading LPG importer.

**KARGO (MYANMAR)** uses mobile technology to connect businesses directly to a large network of independent and commercial trucks.

**OPTIMETRIKS (EAST AFRICA)** provides mobile operators and retail companies a way to collect data that leverages its community of users. Users are paid per visit to conduct a retail census and audits, collect data on the ground and take photos at outlets using Optimetriks’ native Android app and a Facebook Messenger chatbot. The aggregated crowdsourced data is then screened, photos are analysed through an artificial intelligence (AI) solution and the results are displayed to clients through live web business intelligence dashboards.

**KOPAGAS** developed an in-house mobile app to track and optimise the delivery of gas cylinders and refills in informal settlements. The app also allows KopaGas agents to engage new customers in informal settlements where there are often no formal addresses. KopaGas collects data from agents on client interest, which in turn informs the company’s expansion strategy. Apart from the app, KopaGas runs an IoT-enabled smart meter for clean cooking called KopaMeter 4.0, which monitors customers’ cooking gas consumption. All this information is used to optimise routes for gas cylinder refills.

**Optimetriks** aims to enhance and improve the data collection capabilities of its business clients. The start-up’s crowdsourced field agents provide regular data feeds on the needs, activities and stock levels of business clients. Optimetriks processes the data through real-time visualisation dashboards, using image recognition algorithms to detect products and merchandising material. Optimetriks then uses the raw data it collected to predict optimal stock-up levels.

**Kargo** uses data on drivers, routes, trip length and business clients to identify optimal routes and delivery times. The logistics start-up initially set out to use a dynamic pricing model that automatically calculates prices and triggers price surges. However, Kargo realised truck pricing in Myanmar is influenced by other external factors that are not easily captured digitally.
Opportunities for collaboration between mobile operators and data-driven start-ups

Data analytics play a vital role for technology-driven businesses in emerging markets. Since mobile operators have a rich collection of customer data points, they are well positioned to unlock and enhance strategic business decisions.

There are opportunities for mobile operators to partner with data-driven start-ups. Partnerships can help both parties broaden their data parameters and better understand users, trends and behaviors. The following are examples of partnerships between mobile operators and data-driven start-ups in emerging markets.

- **Qlue (Indonesia)** is a data analytics start-up in Indonesia. Qlue addresses a city's safety and security issues in real-time through mobile apps, AI-powered computer vision and its GIS Integration Dashboard. More information on how this works can be found in this video.

Looking ahead: How mobile operators can strengthen partnerships with data-driven start-ups in emerging markets

Data analytics is increasingly a core component of decision making. The use of data analytics can enable and establish new value streams and capabilities for both start-ups and mobile operators. Mobile operators can build on their large datasets by partnering with start-ups to access new datasets and generate insights through meaningful prescriptive analysis. For start-ups, partnerships with mobile operators provide an opportunity for technology transfer and, in emerging markets, for socio-economic development through new business opportunities, churn reduction, insights into new services, greater efficiency, cost-cutting and higher revenue and profits for both parties.
MOBILE OPERATORS IN THE NEWS

How mobile operators are collaborating with local start-ups
This map provides a snapshot of mobile operator and start-up collaborations announced between April 2019 and July 2019. Each initiative has been mapped against a framework developed in our 2017 report, Building Synergies: How Mobile Operators and Start-ups Can Partner for Impact in Emerging Markets. This framework has now evolved to include the following categories: investment, competition, API, commercial agreement, tech hub, co-innovation and joint offering. On the next page, we take a closer look at five of these initiatives.

Map 1

Mobile operator and start-up collaborations in emerging markets (April 2019-July 2019)

**SENEGAL**
- **COMMERCIAL AGREEMENT**
  - Expresso and Konnextek, launch Konexpresso (May 2019)

**TUNISIA**
- **TECH HUB**
  - Orange Fab Tunisia selects five start-ups to join accelerator (Apr 2019)

**ALGERIA**
- **COMPETITION**
  - Denedio sponsors Start-up Weekend at Annaba University (Apr 2019)

**KENYA**
- **COMMERCIAL AGREEMENT**
  - Safaricom and BluPass partner to integrate M-PESA (May 2019)

**INDIA**
- **INVESTMENT**
  - Reliance Jio acquires a majority stake in Haptik for $100M (Apr 2019)
  - Telkomsel’s MDI Ventures invests in Kredivo (Jul 2019)

**CAMBODIA**
- **INVESTMENT**
  - Smart Axiata Digital Innovation Fund invests in SALA and GoGames (May 2019)

**INDONESIA**
- **INVESTMENT**
  - Telkomsel’s MVI Ventures invests in Kodak (Jul 2019)
  - Smart Axiata concludes SmartScale with Demo Day (Jul 2019)
  - Telkomsel Innovation Center hosts IoT hackathon (Jul 2019)

**BANGLADESH**
- **COMPETITION**
  - Robi Axiata and Axiata Analytics organise Dataathon (Apr 2019)
  - Robi Axiata Limited launches r-ventures programme (Jul 2019)

**AFRICA**
- **COMPETITION**
  - Applications open for Orange Social Venture Prize in Africa (Apr 2019)

**SOUTH AFRICA**
- **INVESTMENT**
  - Vodacom acquires 51% of start-up IoT.nxt (May 2019)

**UGANDA**
- **API**
  - MTN announces winners of Open API App Challenge (Mar 2019)

**PAKISTAN**
- **API**
  - Telecom hosts summit on driving Pakistan through APIs (Jul 2019)
  - Axiata chooses Globe Telecom’s Kickstart Ventures to manage their new $150M VC fund (May 2019)
API: Telenor hosts digitising Pakistan through APIs

At the hub of technological innovation, Telenor Pakistan organised a first of its kind thought leadership forum, “Digitising Pakistan through APIs” to accelerate the pace of digitisation in the country. The event was attended by industry experts, government officials, digital entities, SMEs, start-ups, digital distribution and retail partners, along with Telenor Pakistan’s top management. The event aimed to discuss the role of APIs in instituting an open innovation paradigm, which is key to democratising digitisation and transformation at the national level. The conference also highlighted Telenor Pakistan’s leading role in digitally transforming the country, especially through initiatives like Telenor API Portal that enables businesses, SMEs and the start-up community to use Telenor APIs in the areas of identity, communication, direct carrier billing and many others.

API & COMPETITION: MTN Uganda grants access to its mobile money API and announces winners of the MTN Open API App Challenge

In December 2018, MTN Uganda launched the MTN Open API App Challenge, calling on developers to develop apps in transport, finance and fast-moving consumer goods (FMCG). Spearheaded by The Innovation Village, the three-month competition selected 23 finalists that pitched to a panel of judges. The winners were FMCG start-up Minute 5, hospitality app About and transport app Easy Matatu. Each start-up received a cash prize in April 2019 and are in the running for UGX one billion in seed capital from the MTN Innovation Fund.

MTN Uganda was the first mobile operator in Uganda to grant third-party access to its mobile money API. An Open API platform enables developers and programmers to get free access to MTN Mobile Money’s proprietary software platform. Developers can now access it to create products that ease payment options and leverage the 10 million MTN customers registered on Mobile Money.

INVESTMENT: Telkomsel’s investment arm MDI Ventures invests in Kredivo

In July 2019, Indonesian mobile operator Telkomsel announced it had invested an undisclosed amount into fintech start-up FinAccel (with flagship product Kredivo) through its venture arm, Telkomsel Mitra Inovasi (TMI), along with MDI Ventures. Kredivo is a digital payment start-up that provides different payment methods options and terms to help customers break large payments into safer and more affordable monthly payments.

In 2016, MDI Ventures launched a USD 100 million single Limited Partner fund from Indonesian state-owned Telkom Group, followed by a $40 million fund in partnership with Telkomsel, the telco giant’s subsidiary. Telkomsel and MDI Ventures invest in promising companies, accelerating growth by providing access to Telkomsel’s ecosystem, assets and expertise. MDI Ventures managed three overseas exits within a month between June and July 2019, including Australian Whispir, Singaporean Red Dot Payment and US-based Wavecell.

INVESTMENT: Cambodia’s Smart Axiata Digital Innovation Fund invests in SALA and GoGames

Smart Axiata Digital Innovation Fund (SADIF) has welcomed two more up-and-coming Cambodian tech companies: school management solution SALA and mobile gaming platform GoGames.

SALA and GoGames are the latest recipients of Cambodia’s first digital venture capital fund, $5 million of which has been used to support digital businesses, such as the GSMA Ecosystem Accelerator’s Joonaak and other start-ups, including Aniwaa, Sousdey and Okra Solar. SADIF also helps these companies to scale their businesses, expand their networks and establish a regional presence.

TECH HUB & INVESTMENT: Vodafone’s global accelerator that empowers women — F-LANE — selects two West African start-ups

The Vodafone Institute Accelerator for Female Empowerment, F-LANE, is a seven-week programme supporting up to five high-potential digital impact ventures for female empowerment. Launched in February 2017, it aims to sharpen business and impact models and get start-ups ready for investment. Each selected team receives a stipend of EUR 12,000 (USD 13,400) to cover living, travel and venture expenses, while the Vodafone Institute introduces them to personal mentors and potential business partners and investors.

Five start-ups have been selected to take part in the latest programme. They include Ghanaian company Developers in Vogue, which runs female-focused coding bootcamps and reaches participants through an AI-based platform, and Nigeria’s Rubi Health, which offers psychotherapeutic care via video chat in rural hospitals. It will conclude with a demo day in November 2019 when the five finalists will pitch in front of investors and decision makers from business, media and politics.
START-UPS AND MOBILE INNOVATION

How Innovation Fund start-ups are using mobile technology to offer services with impact
AgroCenta

Empowering smallholder farmers through finance, information and market access

**Founding Year**
2016

**Geography**
Ghana

**Founding Team**
Francis Obirikorang | Co-founder and CEO
Michael K. Ocansey | Co-founder and CTO

**Tweet Pitch**
AgroCenta provides smallholder farmers in the staple food value chain (rice, maize, millet and soybean) with access to markets, information and finance.

**Website**
www.agrocenta.com

Smallholder farmers in Ghana, while often poor and illiterate, face two main problems: lack of access to structured markets, which leaves them at the mercy of predatory brokers or middlemen who buy at exploitative prices, and lack of access to finance, which means they may never move beyond smallholder farming to middle-level or even commercial farming.

In 2016, AgroCenta set out to address these challenges. In a country where agriculture is the primary economic occupation of many — employing 32 per cent of Ghana’s labour force — the AgriTech start-up launched AgroTrade, an online platform that connects smallholder farmers in the staple food value chain to a wider online market. The start-up provides access to truck delivery services and real-time market information via SMS and IVR. Building on this platform, AgroCenta now enables farmers to receive mobile money, build their credit score and access financial services (like crop insurance) through its latest mobile product, AgroPay.

As of July 2019, AgroCenta had registered 46,100 smallholder farmers on the AgroTrade platform across four regions and 640 communities. Since launching AgroPay in January 2019, 2,750 smallholder farmers in two regions of Ghana are now active on the platform.
AgroCenta’s mobile app provides two key services to smallholder farmers: access to markets (AgroTrade) and access to finance (AgroPay). On the AgroTrade platform, farmers can trade directly with small, medium and large processing companies that need raw commodities for processing. This is how AgroTrade and AgroPay work:

**How the service works**

**AgroTrade**

1. **AgroCenta** community agents sign up smallholder farmers on the AgroCenta platform by collecting details such as their name, telephone number, form and crop information.
2. Agents begin the trade process by physically inspecting the goods.
3. The agents conduct a few quality checks, including one for moisture content using a moisture meter device.
4. The agent searches for the farmer’s name in the AgroTrade database and enters the following: commodity type, quantity of goods, weight/measure, price per bag (prevailing market price), date of upload, payment mode (mobile money) and registered mobile number (which must be mobile money-enabled).
5. The agent confirms payment with the smallholder farmer through mobile money, records the payment and the transaction is completed.
6. Goods are dispatched to the warehouse for further processing and onward delivery to buyers.
7. After harvest, the smallholder farmer contacts AgroCenta’s community agent and indicates that they have X number of commodities to sell.
8. Once the crops pass the initial quality checks, the agent uploads the trade deal to the AgroTrade platform.

**AgroPay**

1. Smallholder farmers reach out to AgroCents field agents to request loans to purchase inputs, such as seeds and fertilizer. They must have a minimum credit score to receive a loan of $100 to $500.
2. Once the smallholder farmer meets the minimum loan criteria, an agent uploads the loan request to the AgroPay platform. Additional KYC is completed by participating financial institutions before lending.
3. A farmer’s credit score is calculated using the following data: number of active months on the AgroTrade platform (minimum 12 months), average income per farming cycle (minimum $100) and farm size (minimum one acre).
4. Once a loan request is approved, the farmer receives an SMS notification with information on where to pick up inputs from the input dealers.
5. Reconciliation occurs at the end of the month — the input dealer/service provider is credited (via mobile money) and loans are disbursed to smallholder farmers.
6. Goods are dispatched to the warehouse for further processing and onward delivery to buyers.
Working with mobile operators

In Ghana, AgroCenta has set up a mobile money API integration partnership with MTN and Vodafone to pay smallholder farmers directly and seamlessly via mobile money through its AgroPay platform. Both mobile operators will also be supporting AgroCenta farmers with financial literacy training on the ground.

AgroCenta has also strengthened its partnership with Vodafone Ghana to allow smallholder farmers on its platform to access free voice calls between farmers and discounted mobile devices and bundles. Through this partnership, Vodafone Ghana can liaise with the AgroCenta team to onboard AgroCenta farmers on its Small Office / Home Office (SoHo) packages. Vodafone Ghana now pays AgroCenta monthly commissions based on farmers’ usage of the SoHo services, and provides all the necessary support and training to farmers.

AgroCenta also received a grant from the GSMA Ecosystem Accelerator Innovation Fund in November 2018 to further develop and scale its financial solution, AgroPay. This will enable smallholder farmers in rural Ghana to receive digital payments and build their financial identity to complete deliveries through the platform. It also gives smallholder farmers the ability to avoid middlemen and sell their products directly to the agribusiness at better prices. This is expected to improve the livelihood of smallholder farmers in Ghana and increase food production and food security in the country.

By matching smallholder farmers with buyers on its platform, AgroCenta eliminates inefficiencies in the value chain and ensures farmers are remunerated fairly. The start-up also provides farmers with higher and less volatile incomes, enabling them to provide for their families and improve their livelihoods. AgroCenta has increased the income of the smallholder farmers on its platform by 35 per cent on average, while reducing food waste by 25 per cent and increasing yields by 40 per cent.5

Changing lives

By combining agro-training with microloans, the company is providing the extension services farmers need to expand and improve their farms, yields and revenues, and contribute to greater agricultural production and food security.

“Vodafone’s partnership with AgroCenta is to unlock the financial potential of the rural economy, particularly smallholder farmers in the agricultural value chain where the services of the MNOs are on a steady increase. With the AgroCenta platform, it presents millions of opportunities for Vodafone to deliver services to these rural informal sectors.”

Jerry John Quarshie, Head of SME and SoHo, Vodafone Ghana

“AgroCenta now assures me of a ready market for my commodities so I no longer have to worry about where I will sell. All I need to do is to produce, knowing AgroCenta will take care of the market for me. I couldn’t be any happier.”

AgroCenta project beneficiary from Talensi, Upper East Region

With the timeline and consistent delivery of commodities by AgroCenta, we have managed to boost production by 40 per cent and also reduce importation costs by sourcing locally.

Stephen Ghansah, Head of Agribusiness, Guinness Ghana Limited (subsidiary of Diageo Group)
According to a 2018 report by the World Bank, more than five million tonnes of waste are generated each year in Côte d’Ivoire, a number that is expected to double by 2030. Less than half of the current waste is collected and only about three per cent is recycled, with the rest ending up primarily in open landfills or streets. The waste pollutes the environment, especially water reserves, and since plastic takes hundreds to thousands of years to decompose naturally, it is having a disastrous impact on nature. Waste and lack of waste management can lead to flooding when drains are clogged, shorter lifespans for animals that consume it, contaminated water bodies when dumped into rivers or oceans, disrupted food chains from degrading microplastics and respiration problems when burned.

In 2017, Coliba launched a mobile-supported plastic recycling solution to address these challenges, protect the environment, create jobs and improve public health in Côte d’Ivoire, a country of over 24 million people. The start-up formally employs waste pickers who collect plastic bottles from businesses and households in exchange for points that they collect via SMS and convert into mobile data credit or other rewards. After being cleaned up, the plastic waste is turned into pellets in Coliba’s local factory and resold to local or international companies to produce repurposed and recycled products.

As of June 2019, Coliba has processed over 300 tonnes of plastic waste and collected plastic bottles from over 4,500 monthly active users on its mobile app, recycling up to two tonnes of plastic a day. As of July 2019, over 8,000 households and 25 business partners have used the Coliba app. Coliba also formally employs 45 waste collectors and 23 full-time employees.
How the service works

The Coliba platform is accessible to households and business customers that want their plastic waste collected. Requests for pick-up can be made via Coliba’s website, mobile app or SMS platform.

** USER SEEKING WASTE COLLECTION **

1. User downloads the Coliba app on Google Play (version IOS available soon)
2. User clicks on “Ask for collection”, indicating their location on a map. User can also leave a voice message to give additional information about their location.
3. User receives an automatic message saying “Thank you for using our Coliba service” that confirms and validates delivery.
4. The Coliba waste collector arrives at the confirmed collection address. They collect the plastic waste, weigh it and enter the weight into the Coliba app.
5. User receives an SMS confirming the points received. The user can convert the points into mobile data or other products supported by Coliba partners.
6. The user receives a call from the Coliba waste collector confirming the day they will arrive.
7. User selects the number of plastic bottles to be taken away, takes photos of the bottles, uploads them to Coliba’s mobile app then clicks “Validate”.
8. User registers using their mobile number and then receives an SMS with a code to activate their Coliba account.

** WASTE COLLECTOR **

1. The Coliba waste collector receives a notification of a new collection request.
2. On collection day, the collector goes to the user’s house, enters the quantity of waste in the Coliba app and validates it.
3. The waste collector calls the user to inform them of their municipal collection day.
4. The waste collector takes the waste to the Coliba plastic centre.

Working with mobile operators

In 2017, Coliba joined mobile operator MTN’s Y’ello Startup, an incubator programme that supports early-stage local tech entrepreneurs and identifies future business partners for MTN.

In addition to this initial support, Coliba and MTN have collaborated through a commercial and co-branding partnership. Households that recycle plastic bottles through Coliba’s mobile app are granted MTN data credits, allowing them to access the internet on their mobile phones.

1. User clicks on “It’s here” as Coliba has an inbuilt geolocation system.
2. In Côte d’Ivoire, most streets do not have names so it is always important to have more details about the location.

The benefits of this partnership with Coliba is on three levels. First, it’s a business opportunity, because the idea is to be able to help Coliba with their development. Secondly, there are socio-economic issues, and thirdly, environmental issues.

Guillaume N’gouan, Deputy General Manager, MTN Business

We have opened our various APIs to Coliba — specifically our SMS and Mobile Money APIs. Today Coliba is able to pay its collectors using mobile money. We hope this collaboration will be long lasting because it is really the type of activity we look for with our Y’ello Startup incubation programme and we need long lasting solutions.

Idriss N’daho, VAS & ICT Manager, MTN Côte d’Ivoire
Changing lives

Leveraging mobile technology, Coliba reduces plastic waste as it works through the entire plastic recycling value chain, creating jobs for informal workers and opening access to controlled waste disposal facilities. As of July 2019, 45 Coliba waste collectors had collected between 30 and 35 tonnes of plastic waste every month from private households and businesses.

Coliba is tackling a critical challenge in Côte d’Ivoire. By formalising the collection of plastic waste, it is encouraging households to recycle and turn plastic waste into pellets that can be re-used. As of July 2019, Coliba had collected plastic bottles from over 4,500 monthly active users on the mobile app and recycled up to two tonnes of plastic a day.

The start-up is protecting the environment by diverting tonnes of plastic waste from landfills, streets, rivers and the ocean. As of July 2019, Coliba had educated and raised awareness of climate change and the need to reduce plastic consumption among over 6,000 students in schools across Abidjan.

I have been using Coliba for six months and it has completely changed the way I manage my plastic waste. Now, I can accumulate points by sorting my waste. Thanks to their collection innovation, people are equipped to better protect the environment. I am proud to be an active member of Coliba’s app.

Diane, Coliba user

It has now been a year since I started working with Coliba. I did not know the importance of plastic waste, but now I know that we can give them real value. This not only helps to support my family but also contribute to the development of the country by limiting the spread of waste on the streets.

Moussa, Coliba waste collector

Working with the GSMA Ecosystem Accelerator

Coliba received a grant from the GSMA Ecosystem Accelerator Innovation Fund in November 2018 to deploy a large-scale, mobile-supported plastic recycling value chain in 10 districts in Abidjan (with a population of about three million people) to collect, recycle and resell plastic waste from households and businesses.

Through the support of the GSMA Ecosystem Accelerator programme, Coliba has developed an app to enable plastic waste collectors to work efficiently and manage the process as seamlessly as possible. Waste collectors with basic feature phones can also use a USSD interface to access Coliba services.
A shortage of practicing physicians, combined with a dense population, makes access to health care a serious issue in Sri Lanka. According to the World Health Organization, there are fewer than 0.9 physicians per 1,000 people in Sri Lanka. These figures hide an even greater disparity between urban and rural areas. According to a PWC report, approximately 60 to 70 per cent of the rural population relies on traditional and natural medicine for their primary health care.

Despite the provision of free primary health care by the Sri Lankan government, the system is increasingly under pressure. A high burden of non-communicable diseases, increasing care needs for the elderly and rising out-of-pocket expenditure for chronic diseases are also partly to blame. The alternative — private health care — is expensive and only affordable to middle-income citizens and above.

oDoc was founded in 2016 to provide greater access to primary health care. The oDoc service connects doctors with patients, using mobile technologies (smartphone app, SMS, voice, video) to provide high-quality and affordable primary health care. The solution serves all segments of the population, but it is specifically designed for low-income workers as it takes away the worry of travelling long distances to meet a qualified doctor. Employers pay on behalf of their workers at a rate of 35 Sri Lankan rupees ($0.20) per employee per month, giving the employee and their family access to unlimited free consultations. Through oDoc, users can have a doctor’s appointment within minutes. As of July 2019, 484 doctors have registered and over 45,363 users are on the oDoc platform.

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The oDoc service facilitates patient-doctor consultations for both business accounts and direct patients. oDoc also provides services to businesses offered on a monthly per-employee subscription model that gives enrolled employees unlimited access to consultations. Employees who cannot afford a smartphone can access the oDoc services through a tablet provided by their employer. Users can choose to have their appointment in one of the following languages: English, Sinhala, Tamil, Kannada, Hindi and Telugu. Before a doctor can be registered as a consultant on the platform, their credentials are thoroughly vetted and oDoc’s Chief Medical Officer runs a clinical test with the doctor to ensure they can handle teledmedicine appointments effectively.

How the service works

1. The patient can request the consultation to be conducted in English, Sinhala, Tamil, Kannada, Hindi or Telugu.
2. The user chooses a GP or specialist, or clicks the “See a doctor now” button for an immediate consultation.
3. Consultation payments are made upfront through carrier billing15 or by debit/credit card. B2B users simply enter their corporate ID16.
4. The consultation begins and the doctor gives a diagnosis and/or prescription. The doctor can issue an electronic prescription via the oDoc app.
5. The patient can send notes, images and chat with the doctor if they have follow-up questions or updates for 24 hours after the consultation.
6. The user selects a convenient time and date for a call or books an in-person appointment through eChannelling, Mobitel’s appointment booking platform.14

Working with mobile operators

In 2018, oDoc partnered with Dialog, the country’s largest mobile network operator (MNO), to integrate carrier billing with the oDoc platform and enable customers to pay for teledmedicine services using mobile airtime.

In April 2018, oDoc also partnered with Mobitel, the MNO unit of Sri Lanka Telecom. Mobitel owns eChannelling, one of the largest in-person appointment booking platforms in Sri Lanka. The oDoc partnership with eChannelling enables users to book oDoc video or audio consultations directly through the eChannelling website, and consultations are charged to the user’s mobile phone bill. The partnership has significantly increased the number of consultations booked through the oDoc platform.

“Through our partnership with oDoc, we were able to provide an online video medical consultation solution to our customers much faster and more cost effectively rather than building it ourselves. By combining oDoc’s speed with our reach, we have been able to create and distribute a market leading product that not only benefits us and oDoc but the country as well.”

Suneth Haputhanthri, General Manager, eChannelling & Senior Manager, Digital Service & Prepaid, Mobitel

“We partnered with oDoc to increase accessibility to high-quality healthcare across Sri Lanka. Dialog’s ideamart, has provided carrier billing as a payment method via Dialog APIs on the oDoc app. This feature allows users to add the video consultation fee to their phone bill. By providing this convenient payment method, we are allowing all Sri Lankans to have easier access to healthcare.”

Roshanth Gardiarachchi, Senior Manager, ideamart Services, Dialog
Changing lives

ODoc’s solution grants health care access to low-income earners in underserved areas of Sri Lanka. Employers pay a monthly subscription per employee to provide employees and their families access to unlimited free doctor consultations via the ODoc app. Between September 2018 and July 2019, over 30,475 blue collar workers used the ODoc mobile services.

As of July 2019, half the doctors on the ODoc platform are women and an average of 65 per cent of ODoc end users are women.

ODoc is evolving beyond primary care and is increasingly used for follow-up visits. It helps chronically ill patients connect with their doctor easily through a mobile app. It also saves time and money for the patients. This mobile app has helped me reach more patients from all over the country.

Dr. Malika Weerasinghe, Psychiatrist

As a mother of two kids, their health is the top-most priority to me. With ODoc, I can have access to the best medical advice within minutes. As a working mum, ODoc has really changed the way I look at healthcare for my kids. It allows me to speak to doctors from the comfort of our home without the kids having to travel when they are ill.

Sujani, female ODoc user, mother of two children, works in a textile factory

Usually if anyone in my family is unwell, I have to skip a day of work to take them to the hospital, but with ODoc I don’t have to do that anymore. ODoc has allowed us to speak with qualified doctors, who are far from where I live, within a few minutes using just a mobile device. It has made getting good healthcare simpler for me and my family without having to lose out on a day’s pay.

Amila, male ODoc user, works in a textile factory

Working with the GSMA Ecosystem Accelerator

ODoc received a grant from the GSMA Ecosystem Accelerator Innovation Fund in November 2018 to scale up their service in Sri Lanka to offer low-income earners access to quality and affordable health services. The grant is used to develop ODoc’s mobile technology and platform and scale their B2B solution for low-income earners in factories, construction sites and the transport industry.

By the end of the grant in December 2019, ODoc plans to have reached over 90,000 users through its mobile app. In addition to funding, the GSMA continues to support ODoc to strengthen its relationship with mobile operators across the Asia Pacific region. In July 2019, ODoc began expanding into India.
CASE STUDY
Kargo
Connecting businesses to truck owners for logistics services in Myanmar

**FOUNDING YEAR**
2016

**GEOGRAPHY**
Myanmar

**FOUNDING TEAM**
Alex Wicks | Founder and CEO

**TWEET PITCH**
Kargo runs an online platform that allows businesses to book trucks for logistics services.

**WEBSITE**
www.kargo.com.mm

Myanmar has a highly fragmented logistics and transportation industry that is not conducive to small logistics companies and independent truck owners. Although over 4,000 small companies operate in the transportation and storage sector, small logistics companies and independent truck owners are losing money every day from underutilized trucks and an inefficient marketplace. Meanwhile, as scooters and motorbikes are prohibited in Yangon, small businesses and individuals have no reliable, cost-efficient or trackable way to manage logistics and facilitate deliveries. On the other hand, SMEs lack the supporting infrastructure for small-scale logistics.

Kargo launched in 2016 to improve logistics in Myanmar through greater accessibility, ease of administration, traceability, transparency and autonomy. Kargo is an online platform connecting truck owners to businesses for efficient and reliable logistics services. Drivers can sign up to the platform and fulfill logistics for small retail and wholesale businesses. As of June 2019, Kargo had registered 2,306 drivers on its platform and a total of 859 SMEs and small businesses were using the Kargo platform to source drivers and fleets.
How the service works

Kargo enables its customers to deliver goods in Myanmar by using mobile technology to connect businesses directly to a large network of independent and commercial trucks.

**The individual or SME client registers with Kargo through the website or mobile app.** (The clients then have access to a dedicated customer dashboard.)

**Available drivers can bid for the order based on cost, geographical and vehicle suitability, and driver rating.**

**The driver arrives with their truck, and labour if requested, at the arranged time and location.**

**The driver accepts and confirms either via the app or online profile, allowing clients to follow the order and prepare for delivery.**

**Once the order is confirmed, the customer confirms completion of the order using either a unique four-digit code or QR code, which the driver inputs or scans in his own driver app. The driver or customer can take photos through the app for proof of delivery, which will be appended to the customer invoice. This sets the order to “Complete” on the mobile app.**

**Once goods are delivered, the customer invoice is then trackable on the customer’s mobile app or online profile, allowing clients to complete, with supporting proof of delivery, the driver is paid by Kargo via mobile money, bank transfer or cash. (Customers can access a comprehensive history of orders, order routes and prices.)**

**Once the order is completed, with supporting proof of delivery, the driver is paid by Kargo via mobile money, bank transfer or cash. (Customers can access a comprehensive history of orders, order routes and prices.)**

**Working with mobile operators**

In May 2019, Kargo partnered with Telenor Myanmar to provide mobile internet connectivity to its drivers. Through the partnership, Kargo gains access to Telenor’s pre-paid SIM IoT, which will provide reliable and cost-efficient traceability on trucks even in the most remote and underserved areas of the country. The partnership will allow Kargo to scale up its IoT efforts, and in turn increase data usage for the mobile operator partner. In a move away from the traditional prepaid payment model used by network providers in Myanmar, Telenor and Kargo are working with an innovative post-pay monthly plan based on data consumption.

Telenor Myanmar is pleased to offer an effective and cost-efficient solution to Kargo to meet the start-up’s business needs. Pre-paid data SIM cards from Telenor Myanmar enables Kargo to connect to its drivers’ fleet and run real-time tracking via GPS devices all around the clock. With more than 8,600 network sites nationwide covering over 300 townships, Telenor serves more than 18 million customers in Myanmar through its high quality network supported by 2G/3G/4G technology.

Shwe Yinn Mar Oo, Manager, External Communications, Corporate Affairs Group, Telenor Myanmar
Changing lives

Through mobile technology, Kargo empowers SMEs with a cost-efficient way to fulfil logistics requirements without having to invest in their own truck or fleet. Through its online trucking marketplace, SMEs can book and track trucks at fairer market prices. For drivers, Kargo provides higher income, greater access to more orders and previously unattainable contracts. Kargo’s use of data to track orders and order history will in time lead to reliable credit records and build measurable creditworthiness for drivers and greater financial inclusion. Prompt payment also improves financial security for drivers. According to an impact survey conducted by Kargo, intracity drivers on the platform have increased their income by 42 per cent since using the platform while interstate drivers’ income grew by 25 per cent due to higher usage rates and faster turnaround times between trips.

I have previously found working with companies a bit troublesome so I didn’t used to work with companies earlier. With Kargo though, I know exactly what goods to transport, the exact pickup time and they also provide me with more jobs than I had before. I am very pleased working for Kargo.

Ko Thiha, one of Kargo’s first independent truck drivers

Kargo’s services provide businesses like Acecook direct access to Myanmar’s largest fleet of trucks which impacted our business in two specific ways. Firstly, it saves logistics cost due to transparent pricing offered by open market of truck drivers. Second is time and manpower savings due to use of Kargo’s app instead of making calls with drivers for negotiating price, arranging pick-up/drop-off, timings and locations and handling cash.

Thet Hnin, Manager, Purchasing Department, Acecook

Working with the GSMA Ecosystem Accelerator

Kargo received a grant from the GSMA Ecosystem Accelerator Innovation Fund in February 2018 to improve and expand its local operations by automating most of its key processes. With the expansion of Kargo’s platform, SMEs can now aggregate their products into one or more shipments, giving them access to logistics and delivery solutions for shipments across the country for the first time. This benefits SMEs by improving their access to markets and providing additional jobs for truck drivers.

The grant ended in June 2019. Kargo reached 1,526 users, exceeding its target of 380 users by four times. The GSMA is committed to continuing to support Kargo in strengthening its relationships with local mobile operators in Myanmar.

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