

MANGO SOFTWARE

Metis Partners presents the unique opportunity to acquire the intellectual property (“IP”) portfolio relating to the Mango Software Platform (“Mango”), an award-winning mHealth software solution owned by Greenmash Limited (“Greenmash” or the “Company”).

Mango is an established mobile mHealth software solution proven to have demonstrable effect on healthcare quality and service delivery across areas with varying levels of communications infrastructure. Mango has a broad range of functionality including data collection, intelligent survey deployment and automatic report generation that provides greater visibility into health campaigns and initiatives by tracking every step of the supply, distribution, and service delivery chain, which ultimately aids the key decision-making process for users. This has had a proven effect on the quality of service provision in the healthcare sector, including the reduction of stock-outs of vital medicines which has ultimately helped to save lives.

We are currently seeking expressions of interest in relation to this opportunity.

If you are interested in finding out more about this opportunity, please contact Emre Turan at emre@metispartners.com

OPPORTUNITY HIGHLIGHTS

- To obtain access to the mHealth sector, which is currently estimated to be worth \$51bn and is estimated to grow at a CAGR of 11% between 2022 and 2030 [1];
- To acquire an easily-integrated and scalable software solution that has been deployed in numerous countries including Kenya, Uganda and Pakistan, and has been utilised by world leading pharmaceutical companies and Non-Governmental Organisations ('NGOs') including Novartis, PSI and the United Nations, for more than 10 years;
- To acquire a fully commercialized mobile software platform that is certain to be of interest to a range of parties including mHealth software solution providers, Governmental projects and NGOs, and software solutions providers looking to enter or strengthen their positions in the mHealth market;
- To take advantage of the potential growth opportunities for an award-winning mobile healthcare platform designed for use in remote areas and which could potentially be utilised in areas of conflict to combat relief efforts impacted by medical supply shortages;
- To address the evident need for enhanced global mHealth infrastructure to combat a wide range of healthcare related issues, including current issues with the delivery of the COVID-19 vaccination in rural areas;
- Following successful deployment with clients in the healthcare industry, the software has a broad application and can be configured for any data type and process across almost any sector, providing an acquirer with access to potential licensing opportunities across multiple sectors.

[1] Grand View Research, 'mHealth Market Size, Share & Trends Analysis Report By Component, By Services (Monitoring Services, Diagnosis Services), By Participants (Mobile Operators, Devices Vendors), By Region, And Segment Forecasts, 2022 – 2030' February 2022



WHERE MANGO IS USED

Mango was developed in 2011 after Greenmash identified an opportunity in the market to provide more visibility on disparate health programmes specifically in lower to middle-income countries. The platform was initially developed as a basic mobile data collection platform with built-in surveys. Mango was successfully deployed in Ghana and Kenya, which enabled Greenmash to develop a strong reputation amongst international development organisations as a credible provider of clear and useful data collection reports.

Mango was further developed to handle more complex questions and incorporated branch logic, which meant that respondents did not have to answer questions that were not relevant to them. This was the catalyst for a period of sustained growth, allowing Greenmash to generate circa £1m annual revenues at its peak, fully underpinned by the Mango platform. In 2020, Greenmash won a Resilient Health Systems award for its deployment of the Mango platform in the Sahel, after it successfully reduced stock-outs and helped manage outbreaks of COVID-19 in the area.



WHO RELIES ON MANGO

To date, Mango has been trusted and utilised as an effective health campaign platform by global healthcare companies including Novartis, along with world leading organisations such as: the United Nations; PSI; and the Clinton Health Access Initiative.



HOW MANGO IS USED

Mango has been used to improve a variety of processes necessary to the effective functioning of the health industry, which include commodity tracking, patient case tracking, supply chain management and demand forecasting. The platform has proven itself to be an invaluable tool in addressing critical health-related issues faced by billions of people across the globe, including HIV/AIDS; STIs; obstetrics and family planning; women's health; reproductive health; neglected tropical diseases (NTDs); malaria; blindness & visual impairment; population health statistics; testing & treatment surveillance; and health education & training.

WHO RELIES ON MANGO

SOFTWARE FUNCTIONALITY

The Mango software platform enables clients to gain more visibility into health-related activities in a specific region or operation, as well as to accurately evaluate a project or programme's performance.

CORE FUNCTIONALITIES

- **Intelligent Survey Deployment:** The platform allows the delivery of intelligent surveys according to clients' schedules. Surveys can be delivered electronically using standard mobile, network, and internet communications services. Whilst the surveys deployed previously have been related to healthcare, the software can be used to deliver surveys in almost any space.
- **Data Collection & Data Security:** Data collection can be performed via email, web forms, SMS, USSD, or mobile app. Following the delivery of client surveys, data is received quickly and updated in real time. High response rates are ensured through the use of automatic reminder messages sent to the user's mobile phone or computer. Data privacy is at the forefront of the platform's design, and collected data can be anonymised, and securely stored in clients' cloud accounts to safeguard data integrity. This also allows clients to access historical data for later analysis or comparison.
- **Automatic Report Generation:** The Mango platform utilises the data collected to output accurate information in the form of automatically generated reports, which are updated in real-time based on the latest available information. Powerful data filtering tools are available to help quickly sift through data, and find the exact data set required with a high degree of granularity. Data can be viewed in a variety of chart and graph types, and tabulated data is available for extraction and further analysis. Reports can be delivered to authorised users via email, mobile app or web browser at any desired schedule.

TECHNOLOGY OVERVIEW

- The software is stored in Azure Devops and is deployed as a cloud service. The platform's source code is written in up to date .NET, and the latest version of the platform runs on Kubernetes. The platform is hosted by AWS.
- The platform is capable of freely exchanging data with 3rd party systems and databases. Integrations are possible at the application layer or by using a separate mapping layer. It is possible to have real-time data exchanges between Mango and other systems. The platform is built using modular architecture and so new tools and modules can be added seamlessly by any developer, without disrupting the rest of the system.
- It is possible to include various forms of user incentives in the Mango system. These can include financial rewards, such as vouchers and mobile data accounts top ups.
- The platform is provided to clients along with extensive documentation, a knowledge base, and a support portal. Clients are also able to log, track, and manage all reported issues. All software architecture documentation is retained.
- The platform contains a built-in training function. This involves the creation of a virtual sandbox environment, where trainees can practice sending data without risking the live application. The platform is however, designed to be extremely simple, self-explanatory and logical to use.
- The platform contains mechanisms to protect sensitive information and data is encrypted at transit and at rest.
- Multiple languages can be used in one installation of the platform. Menu items, text fields, labels, reports and charts can all be customised to support different languages. Current available languages include: English; French; Swahili; Somali; and Malagasy.

CASE STUDY (1)

MAJOR HEALTH ISSUE

Greenmash were engaged by the SMS for Life program to implement a 26-week pilot of Mango to combat the issue of stock-outs of vital malaria tests and treatments in Kenya.

Although malaria is a treatable disease, it can often be fatal, particularly without access to treatment, and was responsible for 241m cases and 627k deaths worldwide during 2020. [2] Consequently, it is imperative that geographic areas where malaria is prevalent, often low-to mid-income areas, can maintain access to diagnosis tests and treatments in order to limit preventable deaths caused by malaria.

Prior to the engagement, stock-outs of malaria tests and treatments were common, with over 40% of facilities experiencing stock-outs at one time.

[2] World Malaria Report 2021, World Health Organisation



CASE STUDY (2)

MANGO-BASED SOLUTION

1

Greenmash deployed an SMS-based solution using the Mango platform which connected 87 public health facilities across Kenya to the Mango system. This enabled facilities to rapidly report stock levels using only basic mobile devices.

2

Weekly scheduled data collection surveys were implemented to ensure a regular supply of information from all facilities.

3

Minimum stock alerts were configured for all tests and treatments, and an automatic alert system was put in place to warn of critically low levels of stock across 87 facilities.

4

Mango's real-time reporting ensured that decision makers could make informed decisions and immediately address and action any stock-related issues that facilities were experiencing.

CASE STUDY (3)

PROVEN RESULTS

1

During the first week of the pilot, 48% of facilities reported stock-outs of first-line malaria treatments. By Week 21, all stock-outs of first-line malaria treatments had been eliminated.

2

The data collection programme generated a response rate that exceeded 97%, which provided decision makers with key oversight of stock levels.

3

Automatically generated reports ensured that response times to stock issues were within days rather than weeks.

4

The successful results of the pilot led the National Malaria Control Programme to recommend that the Mango solution was rolled out across all 4700 public health facilities within Kenya.

MARKET SIZE



mHealth

The software provides the opportunity to obtain access to the mHealth sector, which is currently estimated to be worth \$51bn and is estimated to grow at a CAGR of 11% between 2022 and 2030.



Data Collection

The software has uses outside of its current space and can be used as a proven data collection tool in almost any sector. The total data collection market was valued at \$1.6bn in 2021 and is estimated to grow at a CAGR of 25.6% from 2021 to 2028.

ASSETS FOR SALE

- Mango software platform;
- Organisational Knowledge including software architecture and extensive supporting documentation such as user guides and case studies;
- Goodwill rights in the Mango product brand.



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