

## **Contract mechanization apps (e.g. Hello Tractor)**

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### **Summary**

A growing number of service companies and private owners in Sub-Saharan Africa offers mechanized agricultural equipment like sensors, robots and tractors for rental to farmers. Yet, such contracted use of modern technologies has remained very limited for small-scale producers because businesses face major challenges to inform and onboard low-income communities, and minimize costs and risks of operations. Phone applications and data systems provide unique opportunities for addressing these roadblocks that slow down agricultural mechanization by making it possible for contractors to take better informed decisions, increase cost-effectiveness and grow businesses faster. One of the success stories in this innovation space is Hello Tractor, a power equipment sharing application that connects tractor owners and smallholder farmers in rural parts of SSA. This digital platform tractor promotes collaborative consumption by creating a market place for equipment owners and companies where farmers can request and pay for services via SMS and mobile wallets, as and when needed. Data supports everything from credit scoring to market intelligence for underwriting, risk management, and loan repayment structures that match the seasonality of crop production and linked cash flows.

### **Technical Description**

Digital information and communication technology is making it possible for equipment owners to track movement and use of assets, expand their serviceable geography, and manage payments in a timely and transparent way. For farmers, phone-based information and communication is creating equitable access to agricultural mechanization that enhances crop productivity, reduces labour costs and grows incomes from farming. The Hello Tractor application embeds advanced financial analytic tools that minimize the costs and risks of using tractors and other power equipment on farms which increases confidence and investments in mechanization across emerging markets of SSA. Sensor technology lies at the heart of collecting intelligence on the internal workings of two-wheel and four-wheel tractors, and combine harvesters. Hello Tractor integrates multiple telematic solutions for commercial vehicles like GPS tracking, fuel management, driver management, maintenance and servicing, fleet management, fraud prevention and customer booking; which are operated via easy-to-use dashboard. In this way, equipment owners can add value to their business and ensure sustainability of

agricultural mechanization which are very important factors for widespread scaling to take place across smallholder farming communities in SSA.

### **Uses**

Digital applications offer major opportunities for promoting and managing use of agricultural power equipment in all types of crop and livestock production systems across SSA, both with subsistence farmers and commercial agribusinesses. Hello Tractor, in particular, is available as a mobile and web application, which have extended offline capability for the various modules to allow operations in remote rural areas. The digital platform for contracting agricultural equipment can be used anywhere in SSA since it has the ability to roam different telecom networks, and achieves a GPS accuracy of up to 2 meters. To date, more than 3,000 dealers, fleet owners and banks in SSA make use of Hello Tractor to scale their business for contracted mechanization services on farms.

### **Composition**

Platforms for contracted use of commercial vehicles and other agricultural equipment are integrating different telecommunication and information systems. Devices fitted on tractors to monitor operations are rugged design, high sensitivity, tamper-proof, weather-resistant and best of all fits. Hello Tractor, like other platforms, is based on the Internet of Things that creates a network for physical objects through software applications, and embeds a pay-as-you-go system. Machine learning and artificial intelligence are widely employed by the applications for carrying out tasks related to the optimization of equipment movement and analysis of performance data.

### **Means of application**

For equipment owners and service providers to make use of digital contracting applications they need to have smart devices installed onto machines by an accredited technician. These actors can offer services directly to farmers, or may work through booking agents that aggregate demand within their community, or a combination of the two. Farmers who wish to contract mechanization services have to request, schedule and prepay for these via the SMS messaging or mobile applications which puts them in touch with equipment owners or booking agents. A trained operator will bring the equipment to the field and carry out the task after consultation with the farmer. Once a job is completed the balance of payment is settled through the digital system. Equipment owners and investors get detailed reports about the user and cost-effectiveness which allows them to improve business models and access financing for new equipment.

<b>Agroecologies</b>	Dryland area, Highlands, Humid forest, Moist savanna.
<b>Regions</b>	Africa South of Sahara.
<b>Developed in Countries</b>	Kenya, Nigeria.

<b>Available in</b>	Kenya, Nigeria.
<b>Solution Forms</b>	Digital Application.
<b>Solution Applications</b>	Mechanized Farming.
<b>Agricultural Commodities</b>	Maize, Rice, Wheat, Sorghum/Millet, Cowpea, Groundnut, Soybean, Common bean, Cassava, Cacao, Vegetable crop.
<b>Target Beneficiaries</b>	Small-scale farmers, Commercial farmers.

## Commercialization

### Commercialization Category

Commercially available

### Startup Requirements

1) Purchase and install smart devices for tracking equipment, and download the Hello Tractor application from Google Play Store, 2) Upload tractor specifications, trained operators and booking agents to your account, 3) Service farmers within the area of operation through booking agents, and 4) Track movement and performance of tractors, operators and booking agents to ensure maximum machine uptime, profits and reduced fraud.

### Production Costs

Digital applications that help managing the contracted use of agricultural power equipment, such as Hello Tractor, can be downloaded for free by owners, farmers and investors. Aside from the capital for equipment acquisition, owners are having to invest in smart mobile devices and their installation by accredited so that critical information about its performance can be collected. The base cost of renting a four-wheel tractor for half a day (4 hours) typically amounts to US \$60-70, and farmers making use of the service also need to pay the salary of the trained operator. Contracts for agricultural mechanization set up through a booking agent incur a commission that is paid by the farmer.

### Customer Segmentation

Tractor and power equipment owners, Agricultural service companies, Subsistence and commercial farmers

### **Potential Profitability**

Digital technology for contracted agricultural mechanization allow to reduces operational costs of equipment and increases reliability and asset salvage value. Route optimization, as is offered by Hello Tractor, ensure that tractors spend more time on the field making money and less time on the road travelling between jobs. Digitization of asset management and service contracting is helping equipment owners to cut down on transaction costs, and dealers to sell more with contractors and cooperatives. Monitoring performance and risks of power equipment through mobile data applications enhances transparency which allows farmers, owners and dealers to secure more financing from lenders. Hello Tractor activities in Nigeria has shown that access to agricultural mechanization at the lowest possible price by integration of digital technology enables smallholder farmers to increase crop yields and save on labour costs in comparison to manual practices they relied on.

### **Licensing Requirements**

Digital applications for contracted use of power equipment, such as Hello Tractor, are free of commercial licenses and royalties. Tractors, sensors and other tools need to comply with operating standards and environmental regulations that are in place within countries of SSA, and equipment dealers need permits to import, assemble and sell these.

### **Innovation as Public Good**

The Hello Tractor platform was developed as a regional public good for farmers in SSA but its intellectual property right are held by the company.

**Solution Images**

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# Tractors



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## HTDEMO1



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## HTDEMO10



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# Institutions

