



DATA**SHIFT**



PREMISE

CASE STUDY

INITIATIVE NAME:
PREMISE

ONLINE PRESENCE:
[HTTPS://WWW.PREMISE.COM/](https://www.premise.com/)

GEOGRAPHICAL SCOPE:
INTERNATIONAL

A three-year-old startup-turned-successful research company, Premise is able to capture economic data in near real-time, thanks to its machine reading technologies, a free Android application and the 25,000 people who contribute to the datasets by taking photos and documenting information. This group of contributors is consistently growing in numbers as Premise projects reach more countries and towns around the world, all with the common objective of increasing transparency in their communities, economies and societies.

“A picture can be worth about 1,000 data points,” says David Soloff, Co-founder and CEO at Premise and, with potentially “billions of photographers around the world”, new ways of measuring economic activity are emerging.¹

Launched in October of 2013, the 40-person² San Francisco-based research company Premise indexes and analyses millions of photos and data captured by a global network of contributors using the company’s free Android app³ with the objective of providing real-time information on economic conditions on the ground. Its ultimate mission is “to improve people’s communities and livelihoods around the world by increasing economic and societal transparency”.⁴

Anyone, from hedge fund managers to relief agencies to consumer goods companies, can track the true value of currency in a country, spot potential problems arising from food shortages (or abundances) or even measure how one company stacks up against another in terms of price or presence on stores’ shelves.⁵

“We wanted to focus on the economies that were most dynamic, the most wondered about, the most opined about, and, for outsiders, the most difficult to read,” says Soloff.⁶

Premise’s network has grown exponentially, from 25 cities in its launch to over 200 in 32 countries in 2015. Today, the company collects over 240,000 real-time prices from physical stores and the web.⁷ Premise sells its data to clients, such as Bloomberg and Standard Chartered Bank, that want a faster understanding of consumer prices and inflation than official government statistics supply. Premise also has clients such as the UN and the World Bank that want a better sense of economic conditions on the ground and whether development money is actually getting to its destination.⁸ At the same time, Premise is giving away its data for free to nonprofits

1 Farah Halime. “Introducing The ‘Trillion Dollar Industry That Is Dying To Be Destroyed.’” BuzzFeed News, March 10, 2015: <http://www.buzzfeed.com/farahhalime/premise-economic-data#.lwqmRx4e7>.

2 Find out more about the executive team members here: <https://www.premise.com/ourteam/>

3 Download the Premise App at the Google Play store here: <https://play.google.com/store/apps/details?id=com.premise.v1&hl=en>

4 <https://www.premise.com/whatwedo/>

5 Derrick Harris. “Premise Data Wants to Revitalize Economic Data, and Android Plays a Big Role.” GigaOm Research, October 14, 2013: <https://gigaom.com/2013/10/14/premise-data-is-trying-to-revitalize-economic-data-and-android-is-playing-a-big-role/>

6 Vijith Assar. “A New Premise to Capture Prices Around the World.” The New Yorker, October 14, 2013: [.http://www.newyorker.com/business/currency/a-new-premise-to-capture-prices-around-the-world](http://www.newyorker.com/business/currency/a-new-premise-to-capture-prices-around-the-world).

7 Connie Loizos. “Premise Raises \$50 Million To Outsource The Collection Of Economic Data.” TechCrunch: CrunchBase, September 24, 2015: <http://techcrunch.com/2015/09/24/premise-raises-50-million-to-outsource-the-collection-of-economic-data/>

8 Sean Captain. “Premise Pays App Users to Gather Real-World Economic Data.” Fast Company, September 24, 2015: www.fastcompany.com/3051471/elasticity/premise-pays-app-users-to-gather-real-world-economic-data

and academic institutions, and plans to continue building products on top of its data platform.⁹

Most recently, Premise was named one of Fast Company's 50 Most Innovative Companies of 2015.¹⁰ It is due to receive \$35 million from Valor Equity Partners and \$50 million in Series C funding from earlier backer Social + Capital Partnership.¹¹

HOW PREMISE WORKS

In order to monitor the economic conditions in real time, Premise monitors the price, quality, availability and other metrics of goods and services, from online and on-the-ground sources. This data includes price, list price, discount, in-stock and ratings information for food, grocery items, clothing and much more. The online data draws from 20,000 e-commerce websites.¹²

However, while e-commerce data is helpful for gauging the prices of certain products in certain economies, it doesn't really touch emerging economies, where the vast majority of transactions are still local and cash-based. The "stuff of life", as Soloff calls it. If food prices are rising across Asia, for example, this likely means, among other things, worse health and less money to spend on non-essential consumer goods.¹³ The official versions of such numbers can move commodity prices and stock markets, and getting an early peak can be extremely valuable.

But perhaps the most innovative and powerful is the crowdsourcing strategy. Today, not only is Premise deployed in more countries, but also its network of "contributors" has grown from 700 to over 25,000 people in less than three years. "We use them as a sort of discovery agent," Soloff says. Part of the reason behind this explosion in numbers of crowdsourced talent: Premise pays its contributors for each piece of data.

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- 9 Derrick Harris. "Premise Data Wants to Revitalize Economic Data, and Android Plays a Big Role." GigaOm Research, October 14, 2013: <https://gigaom.com/2013/10/14/premise-data-is-trying-to-revitalize-economic-data-and-android-is-playing-a-big-role/>
 - 10 Sean Captain. "Premise Pays App Users to Gather Real-World Economic Data." Fast Company. September 24, 2015: www.fastcompany.com/3051471/elasticity/premise-pays-app-users-to-gather-real-world-economic-data
 - 11 Connie Loizos. "Premise Raises \$50 Million To Outsource The Collection Of Economic Data." TechCrunch: CrunchBase, September 24, 2015: <http://techcrunch.com/2015/09/24/premise-raises-50-million-to-outsource-the-collection-of-economic-data/>
 - 12 Leena Rao. "Real-Time Economic Data Tracking Platform Premise Raises \$11M From Social+Capital Partnership." TechCrunch, March 13, 2014: <http://techcrunch.com/2014/03/13/real-time-economic-data-tracking-platform-premise-raises-11m-from-socialcapital-partnership/>
 - 13 Derrick Harris. "Premise Data Wants to Revitalize Economic Data, and Android Plays a Big Role." GigaOm Research, October 14, 2013: <https://gigaom.com/2013/10/14/premise-data-is-trying-to-revitalize-economic-data-and-android-is-playing-a-big-role/>

“We follow a cost-per-capture model that’s a function of supply and demand. Some observations are easy to find and there are lots of opportunities to make them. Then there are others that require more time to locate, meaning they are geographically specific in a region that doesn’t have a lot of coverage. The range right now is 6 to 7 cents [per observation] at the low end and 30 to 40 cents or more [for harder-to-find information] ... People typically spend between six and eight hours a week [contributing information to the platform] and average monthly earnings are in the \$100 to \$120 range. Over the last year-and-a-half, we’ve paid out close to \$3 million, and that will significantly ramp up going forward.”¹⁴

In some cases, as Soloff points out, “You have people earning 40, 50, 60 dollars [a week] now in countries like India or Indonesia or Ghana or Nigeria. That can be very significant.”¹⁵ Thus far, Premise claims to have paid out nearly \$3 million in fees to its contributors.¹⁶

The decisions of which countries to work in and where to develop a network are generally customer-driven, depending on the data needs. There are also some networks Premise selects out of its own desire to create greater societal transparency, including, for example, Liberia and Venezuela.¹⁷

THE PROCESS BEHIND A PREMISE PROJECT

Another strategy unique to Premise is its involvement of decision-makers. From financial services to tech, from retail to public service, these decision-makers are involved from the beginning in defining the issue and formulating the questions they need answered. For example, which populations in Kano are being deprived of electricity or are shelves stocked with the right product in Harare or is it counterfeit?¹⁸ As Soloff notes, “A big part of how we work with customers is spending time up front defining what a sample space looks like, the number of locations we’ll need to visit, the number of measurements we’ll need to take, how

14 Connie Loizos. “Premise Raises \$50 Million To Outsource The Collection Of Economic Data.” TechCrunch: CrunchBase, September 24, 2015: <http://techcrunch.com/2015/09/24/premise-raises-50-million-to-outsource-the-collection-of-economic-data/>

15 Sean Captain. “Premise Pays App Users to Gather Real-World Economic Data.” Fast Company, September 24, 2015: www.fastcompany.com/3051471/elasticity/premise-pays-app-users-to-gather-real-world-economic-data

16 Ibid.

17 <https://www.premise.com/faq/>

18 <https://www.premise.com/whatwedo/>

many observations we'll need and [thus] how many contributors."¹⁹

Once the research questions are formulated, the next steps are as follows:²⁰

- **Schedule:**
The customer's campaign is scheduled onto the Premise network, deploying contributors in the field to collect photos, surveys and data tailored to the relevant geographic and coverage parameters.
- **Optimise:**
Premise machine learning algorithms monitor the observation stream in real-time, continually optimising the campaign allocation and targeting parameters, refining the sampling design and assigning more resources as needed.
- **Analyse:**
In tandem, Premise monitors the campaign at scale, surfacing trends, patterns and anomalies in the data, which are then layered with a set of predictive analytics.
- **Discover:**
Aggregate indices, condition reports, trend maps and data feeds are published in real time, layered with contextualisation to quantify and qualify human impact.

PREMISE PROJECTS

Premise has already been deployed in 32 countries, in nearly 200 towns and cities.²¹ Its network has worked on collecting, indexing and analysing data in places reaching from Nigeria to Vietnam and India to Argentina.²²

Given that the collaborator network and data platform are both flexible and scalable, the projects range from monitoring food prices in India²³ to tracking frequency of political advertisements in Brazil;²⁴ from providing critical data to aid organisations

19 Connie Loizos. "Premise Raises \$50 Million To Outsource The Collection Of Economic Data." TechCrunch: CrunchBase, September 24, 2015: <http://techcrunch.com/2015/09/24/premise-raises-50-million-to-outsource-the-collection-of-economic-data/>

20 Ibid.

21 <https://www.premise.com/thenetwork/>

22 <https://www.premise.com/whatwedo/>

23 Nicholai Lidow. "Politics, Storage, and Food Prices in India." Premise Blog, September 15, 2014: <http://blog.premise.com/data/science/2014/09/15/politics-storage-and-food-prices-in-india/>

24 Nikila Sri-Kumar. "Political Poster Wars in Brazil's Presidential Election." Premise Blog, October 2, 2014: <http://blog.premise.com/data/science/2014/10/02/posters/>

during the Ebola crisis in Liberia²⁵ to helping the government see if businesses are complying with a new cigarette tax in the Philippines, in partnership with the World Bank.²⁶

For the team at Premise, “Any data that can be captured by a mobile phone and which has societal value is fair game for us.”²⁷

In one particularly interesting example, Premise is working to identify the number of homes without electricity in remote regions of Sub-Saharan Africa.²⁸ Using thousands of photos of homes, Premise trained its image analysis to recognise, from a picture of a house, whether or not that building is connected to a power line. Premise is also using photos to determine if roads that were meant to be built actually were, and if people are using them.

In a future project, it will use its network of data contributors to capture information on price, volume, size and quantity of cigarettes and spirits to create a new index, published in real time for the World Bank. In fact, some data is so granular that it includes measuring alcohol content. The information will be used to determine a floor for the Sin Tax price and availability on tobacco and alcohol.²⁹

The research company also creates attention-grabbing charts like the Coca Cola Index,³⁰ a take on The Economist’s famous Big Mac Index. The Coca Cola Index reveals economic trends about the world based on the price of a bottle of Coke. In China, for instance, a bottle is roughly half the price it is in the US, possibly hinting at an undervalued renminbi.

CONTRIBUTE WITH PREMISE

Anyone can apply to contribute to Premise. While many contributors are university students, others, like domestic workers, bank tellers, drivers and shopkeepers, are supplementing their income.³¹

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- 25 Nicholai Lidow. “Firsthand Look at Liberia’s Markets During Ebola.” Premise Blog, November 10, 2014: <http://blog.premise.com/data/science/2014/11/10/liberia-update/>
 - 26 Farah Halime. “Introducing The ‘Trillion Dollar Industry That Is Dying To Be Destroyed.’” Buzzfeed News, March 10, 2015: <http://www.buzzfeed.com/farahhalime/premise-economic-data#lwqmRx4e7>
 - 27 <https://www.premise.com/faq/>
 - 28 “Helping Investors Bring Electricity to the First Mile in Sub-Saharan Africa.” Premise Blog: <https://www.premise.com/case/#1>
 - 29 Sarah Halime. “Introducing The ‘Trillion Dollar Industry That Is Dying To Be Destroyed.’” Buzzfeed News, March 10, 2015: <http://www.buzzfeed.com/farahhalime/premise-economic-data#lwqmRx4e7>
 - 30 Allen Tran. “Introducing Premise’s Coca-Cola Index.” Premise Blog, September 26, 2014: <http://blog.premise.com/data/science/2014/09/26/introducing-premise-coca-cola-index/>
 - 31 Connie Loizos. “Premise Raises \$50 Million To Outsource The Collection Of Economic Data.” TechCrunch: CrunchBase, September 24, 2015: <http://techcrunch.com/2015/09/24/premise-raises-50-million-to-outsource-the-collection-of-economic-data/>

In order to develop a network in a town or country, the initial strategy is going through student communities and expanding from there. Premise starts a referral programme, bringing in many people by word of mouth, through an ad or through a link through a WhatsApp or Facebook post. It then enters information into the Premise form,³² after which the app calibrates whether the person's camera is high resolution enough and if their GPS is working and so forth.³³

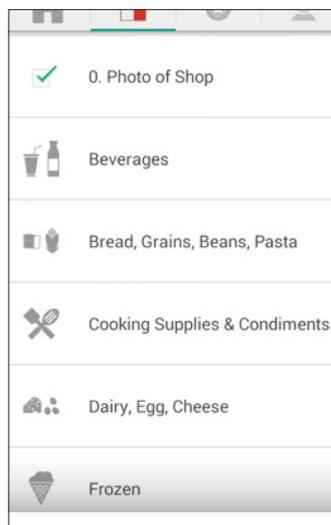
To train new contributors, Premise starts them off with simple tasks to help familiarise them with the process of capturing information. As they complete more tasks, the research team assesses each submission, sending feedback to the contributor through the app when a task isn't properly completed. With an impressive 95 retention rate,³⁴ the training process has a proven track record.

USING THE PREMISE APP TO CONTRIBUTE DATA

Getting started with Premise is a very simple process. Contributors must first download the Android application from the Google Play store. Then, they log into Premise with their Facebook or Google account. They select their city from a drop down menu and go through a brief tutorial. In the instructional YouTube video,³⁵ the tutorial example is collecting data on food prices.

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First, the contributor selects a product from the list developed by Premise specifically for the project.



32 The Premise contact form can be found here: <https://www.premise.com/contact/>

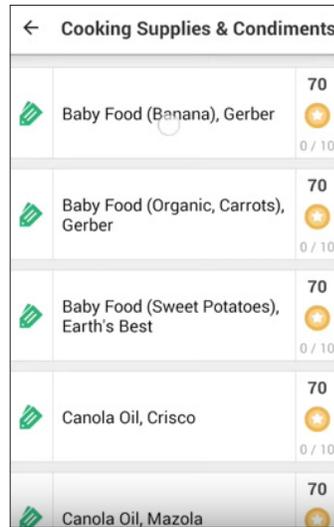
33 Connie Loizos. "Premise Raises \$50 Million To Outsource The Collection Of Economic Data." TechCrunch: CrunchBase, September 24, 2015: <http://techcrunch.com/2015/09/24/premise-raises-50-million-to-outsource-the-collection-of-economic-data/>

34 If a collaborator violates the terms of service, Premise will either suspend or terminate the account. Ibid.

35 English video tutorial <https://www.youtube.com/watch?v=KmiveKslAfw>
Spanish video tutorial: <https://youtu.be/KmiveKslAfw>

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Second, they select a product that is available from the shelf.



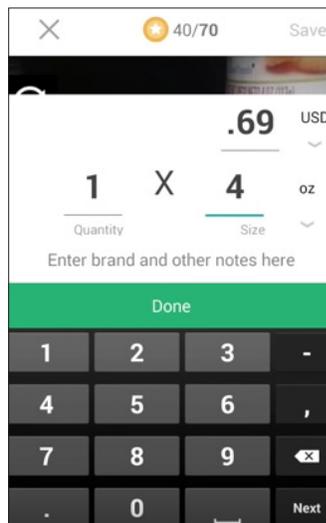
3

Third, they take a picture of the product. Later, Premise analyses the photo with its computer vision system to help verify the facts. The system has become so good that usually a photo is all that is needed to determine what the item is and to read the price tag.³⁶



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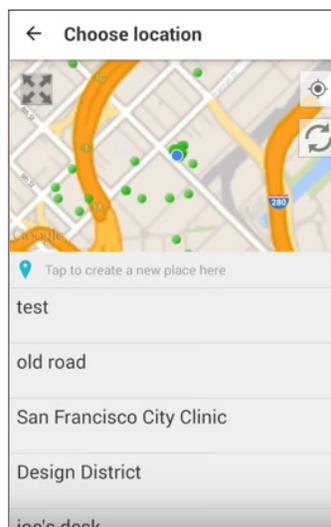
Fourth, the contributor must enter the product information, including the weight, price, and unit of the item.



36 Sean Captain. "Premise Pays App Users to Gather Real-World Economic Data." Fast Company. September 24, 2015: <http://www.fastcompany.com/3051471/elasticity/premise-pays-app-users-to-gather-real-world-economic-data>

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Fifth, the contributor adds the location of the item. They can select from a drop down menu developed by Premise. If a location is not on there, they can add it themselves.



Finally, they save the task and are able to edit the entry before submitting.

The contributor can do Steps 1 through 6 completely offline. Once they have an internet connection, they can then submit their data entry for approval to Premise. Once the submission has been reviewed by the team, the contributor will be notified if it was rejected or accepted. A submission could be rejected for the following reasons:

- Don't take duplicates, products must be different size and weight
- No groups, this means no more than one account should be taking pictures of products at a time in a location
- All pictures must be taken on location, not from a newspaper, off another phone or in your house

Premise has developed algorithms in-house to detect fraud and has gone to great lengths to ensure the quality of the data: "Since our contributors have varying degrees of technical expertise, ensuring data integrity is a major focus. Post-capture, on-the-ground observations are submitted to a rigorous quality control process which is designed to eliminate noise introduced by both accidental and deliberate contributor error (fraud). The methodology consists of a combination of automated machine learning techniques and input from human experts."³⁷

37 <https://www.premise.com/faq/>

CHALLENGES AND THE FUTURE FOR PREMISE

With newly raised funds and internationally influential customers including the UN, the World Bank and the Gates Foundation, Premise will continue to grow not only in terms of projects and its network of collaborators but also in terms of prestige. Premise is already on the radar of high-level organisations including the UN Food and Agriculture Organization, which has published a paper pitting Premise's data for Brazil against numbers from the Instituto Brasileiro de Geografia e Estatística, the country's official statistics agency.³⁸

Steve Hanke, Professor of Applied Economics at Johns Hopkins University and Director of the Troubled Currencies Project at the Cato Institute, says, "Right away for me, as a professional economist, I'd pay attention to this." But Hanke also mentions that, while the data may be useful to provide an early warning about changing rates of inflation, he is sceptical that Premise's numbers can completely replace official statistics, because the data focuses on food prices, which are the most volatile numbers among consumer prices and cannot be taken on their own. As a new service, the data lacks a historical element, which can also cause problems for those looking to use it in decision-making.³⁹

Although Soloff doesn't expect to turn a profit for several years, Premise is not a charity, as today's investment and the parties backing the company make clear. But Premise does a lot of work for governments and non-governmental organisations that is designed to benefit people on the ground. "We do really believe that there is sort of a double bottom-line business to build here. One, to ... build a very large, very profitable company, but also to build one that is net positive in a social agenda," says Soloff. "I don't think they're mutually exclusive."⁴⁰

CONTACT POINT

For contributing data:

<https://www.premise.com/contact/>

For press inquiries:

press@premise.com

For contributing data:

For general inquiries:

38 Farah Halime. "Introducing The 'Trillion Dollar Industry That Is Dying To Be Destroyed.'" *Buzzfeed News*, March 10, 2015: <http://www.buzzfeed.com/farahhalime/premise-economic-data#.lwqmRx4e7>

39 Ibid.

40 Sean Captain. "Premise Pays App Users to Gather Real-World Economic Data." *Fast Company*. September 24, 2015: www.fastcompany.com/3051471/elasticity/premise-pays-app-users-to-gather-real-world-economic-data



DataShift is a multi-stakeholder, demand-driven initiative that builds the capacity and confidence of civil society to produce and use citizen-generated data to monitor sustainable development progress, demand accountability and campaign for transformative change. Ultimately, our vision is a world where people-powered accountability drives progress on sustainable development.

DataShift is an initiative of **CIVICUS**, in partnership with **the engine room** and **Wingu**. For more information, visit www.thedatashift.org or contact datashift@civicus.org.

