

COPERNICUS & ME

Improving financial estimates and forecasts



THE LACK OF REAL-TIME DATA MAKES IT HARD TO ASSESS AND ESTIMATE ECONOMIC GROWTH AND BUSINESS OPPORTUNITIES COMPARABLY IN DIFFERENT GEOGRAPHICAL ZONES.



QUANTCUBE, A FRENCH SME, USES SATELLITE-BASED DATA TO PROVIDE ECONOMIC INDICATORS IN REAL-TIME.



USING COPERNICUS DATA, QUANTCUBE CAN ENHANCE ITS MACROECONOMIC INDICATORS WITH GRANULAR, RELIABLE AND TRANSPARENT DATA.



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COPERNICUS



ESA/ATG medialab

COPERNICUS, EUROPE'S EYES ON EARTH

Copernicus is the Earth Observation Programme of the European Union, looking at our planet and its environment for the benefit of global citizens.

Five Copernicus missions are currently in orbit. The data they provide is coupled with ground-based, airborne, and seaborne measurements to make six information services focused on monitoring: Atmosphere, Marine environment, Land, Climate change, Security, and Emergency.

Such services are free and openly accessible and can be used by private, public and international organisations to improve life on Earth.

For more information about Copernicus, visit www.copernicus.eu

TO HELP COMPANIES DEVELOP BUSINESS STRATEGIES, FINANCIAL FORECASTING REQUIRES PRO-ACTIVELY COLLECTING FINANCIAL AND NON-FINANCIAL DATA THAT IS USEFUL TO IDENTIFY GROWTH OPPORTUNITIES AND MATERIAL RISKS.

Financial forecasting is the process by which companies think about and prepare for the future. Forecasting involves assessing historical and current data concerning macroeconomics, environmental, social and governance (ESG) factors.

While plenty of official economic data exists, these are often published with a lag of three or four months and for some areas of the world such data is difficult to access.

As an example, up-to-date information on urban growth or maritime traffic, which can be linked to economic growth, is not available for many geographic areas, and it needs to be retrieved from sources other than official reports.

The lack of real-time data makes it very challenging for industry practitioners to assess and estimate economic growth and business opportunities in a way that is comparable among different geographical zones and over time.

The uncertainties resulting from the COVID-19 pandemic make it even more challenging to perform financial forecasting to support businesses in their strategic decisions. This challenge highlights the need to procure and analyse macroeconomic data in an alternative fashion.



To boost financial forecasting, the industry is increasingly integrating cutting-edge technologies such as AI, blockchain and deep learning/data science with existing tools and models

FinTech companies are playing an important role in this area and serving their clients in almost every area of finance, from payments and loans to credit scoring and stock trading.



QUANTCUBE TECHNOLOGY

Type of organisation: SME

Country: France

Annual budget in 2020: Less than €500k

Previous experience with Earth Observation data: Yes

**QUANTCUBE
TECHNOLOGY IS A
FINTECH COMPANY
THAT PROVIDES
HIGH QUALITY
FINANCIAL
PERFORMANCE
INDICATORS TO ITS
CLIENTS.**

QuantCube Technology was founded in 2013 by two entrepreneurs with strong expertise in Artificial Intelligence (AI) and Big Data.

The company develops macroeconomic and ESG nowcasting with real-time analyses of key Macro and ESG factors (i.e., insights into present, near future, and very recent past economic events).

QuantCube leverages a vast amount of alternative data to perform financial analytics that help their clients design and implement evidence-based business and investment strategies.



The QuantCube team. © QuantCube Technology

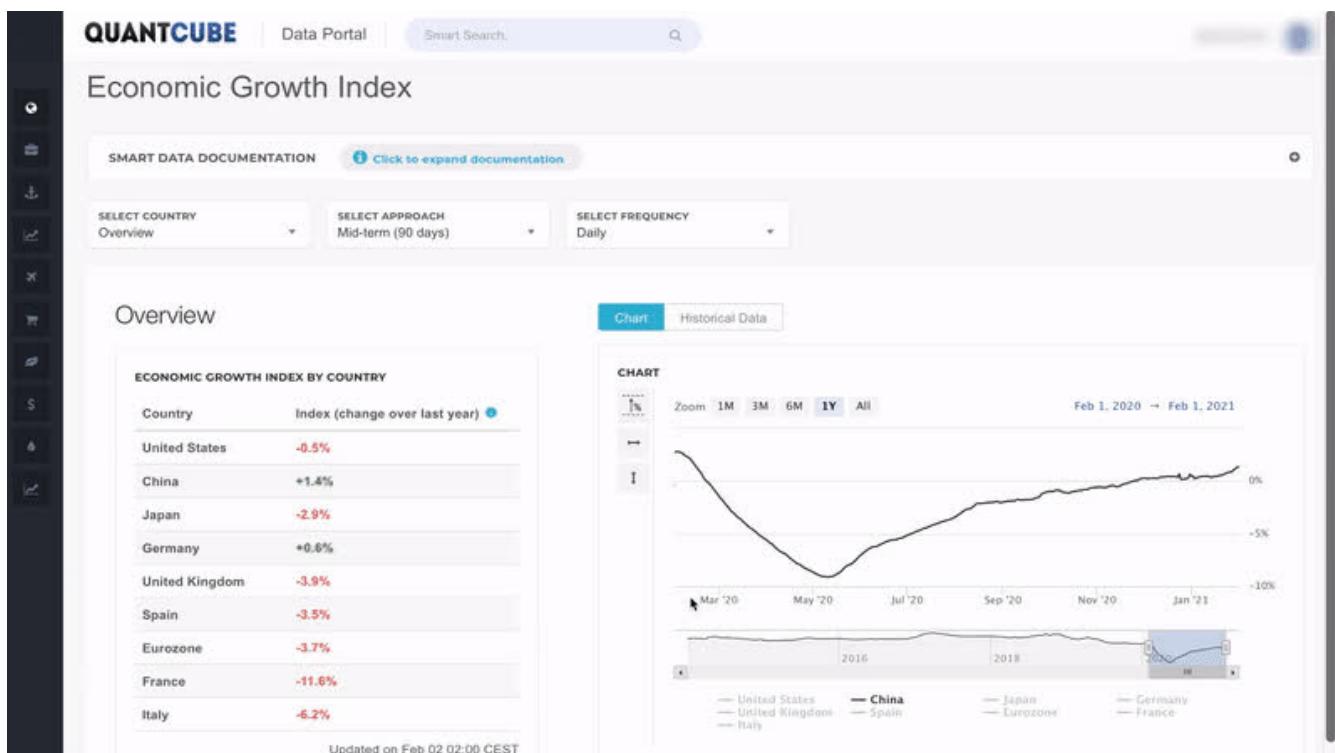
THE TEAM'S VISION IS TO PROVIDE VALUABLE INSIGHTS INTO TOMORROW'S ECONOMY WITH REAL-TIME MACRO INTELLIGENCE.

QuantCube's main product is a Macroeconomic Intelligence Platform (MIP) where users can find real-time macroeconomic indicators based on AI and Big Data technology.

These indicators provide users with timely insights for macroeconomic factors, such as GDP, inflation, job openings and others.

The company processes a variety of alternative data including textual data (news and social media), geospatial data, telecommunications data, and Earth Observation (EO) data from optical, radar and atmospheric satellites.

QuantCube's portfolio of clients includes financial institutions, such as Moody's, the World Bank, Banque de France, Ardian, and Union Bancaire Privée (UBP).



Economic Growth Index. Source: QuantCube's Next Generation Macroeconomic Intelligence Platform

QUANTCUBE USES SATELLITE-BASED DATA FROM THE COPERNICUS CONSTELLATION AND SERVICES TO PROVIDE ITS CLIENTS WITH ECONOMIC INDICATORS IN REAL-TIME.

Copernicus data are used by QuantCube to collect real-time information on four wide sectors of activity that are crucial to economic growth:

Agriculture: Sentinel-2 images, as well as meteorological data, are used to calculate real-time estimates of the crop yield per region and country, allowing for better tracking of agricultural activities.

Pollution: Sentinel-5p satellite images allow QuantCube to estimate the level of pollution per region and per country, focusing on the industrialised areas. Assessing the level of pollution (and in particular of NO2 emissions), allows for the tracking of industrial production.

Urban growth: Sentinel-2 images are used to measure and monitor urbanised surfaces and their yearly evolution. This helps QuantCube to track how cities change over time.

Water stress: Sentinel-2 satellite images are used to monitor water sources. Monitoring the fluctuation of water surfaces enables QuantCube to foresee droughts, which have a noticeable impact on water-intensive economic sectors.

To obtain the best possible accuracy, QuantCube Technology couples information extracted from satellite imagery with other data sources, such as job offers, sentiment data from social media, or logistics flows data.

The results of the analyses are delivered in real-time via the QuantCube Macroeconomic Intelligence Platform (MIP), accessible via a license on the SaaS model. The platform offers users different levels of granularity, ranging from sector data to country-level macroeconomic indices.



The Copernicus Sentinel-2 mission takes us over Morbihan – a French department in the south of Brittany. Credit: © QuantCube Technology. Contains modified Copernicus Sentinel data (2020), processed by ESA, CC BY-SA 3.0 IGO

By using Copernicus data, QuantCube can access information on regions where official statistics and indicators are difficult to obtain or are made available with some delay.

THE USE OF COPERNICUS-BASED DATA ADDS A SIGNIFICANT VALUE- ADDING LAYER TO QUANTCUBE'S GLOBAL MACRO SMART DATA OFFERING.

By using satellite images, QuantCube is able to enhance its macroeconomic indicators with granular, reliable and transparent data.

The satellite images also allow QuantCube to monitor changes in a specific region or country over time to detect unusual trends.

In 2021, the Bank for International Settlements (BIS) Innovation Hub and the Bank of Italy placed QuantCube among the finalists for the G20 green and sustainable financial challenge, which was launched during the Italian G20 presidency

As climate change is increasingly affecting economic growth, environmental parameters are becoming more and more important for financial predictions. Hence, the use of satellite data will continue to play a crucial role in enabling companies to produce reliable financial and macroeconomic forecasts.



LINKS

QuantCube Technology website:

www.quant-cube.com

ESA Space Solutions website:

www.esa.int/Applications/Telecommunications_Integrated_Applications/ESA_Space_Solutions

G20 TechSprint Website:

www.techsprint2021.it/

Discover our satellites, Copernicus

website: www.copernicus.eu/en/about-copernicus/infrastructure/discover-our-satellites

BIS and Bank of Italy announce finalist list of G20 green and sustainable financial challenges, London News Today, 25th June 2021. Consulted on 29 November 2021 :

www.londonnewstime.com/bis-and-bank-of-italy-announce-finalist-list-of-g20-green-and-sustainable-financial-challenges/319032/

QuantCube Technology, Economic Intelligence Factory, ESA Space Solutions, 2021. Consulted on 23 November 2021.

G20 Techsprint 2021 Update, QuantCube, 2021. Consulted on 22 November 2021

CREDITS AND CONTACTS

Alice Froidevaux, Lead Data Scientist
QuantCube Technology
Paris, France
a.froidevaux@quant-cube.com
quant-cube.com



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