TwinSphere

A window into the future…

Part 1

Setting the scene

In the near future, climate changes has gotten out of control and natural disasters ravage the earth. Decades of negligence have betrayed the planet, and the green deal's importance is manifesting itself clearly in everyday life. Environmental conscience is nothing new, it has been around for decades. Yet, the long term nature of climate change makes it invisible to the average human. Hence, governments and individuals are reluctant to leave behind practices and habits for something they cannot see.

Finally though, the time has come. Climate change stands before humanity as a fierce lion, and the need for immediate change is now obvious. But time is running short. Scientists need a way to evaluate solutions and figure out the right path. TwinSphere, aims to be their ultimate tool.

Part 2

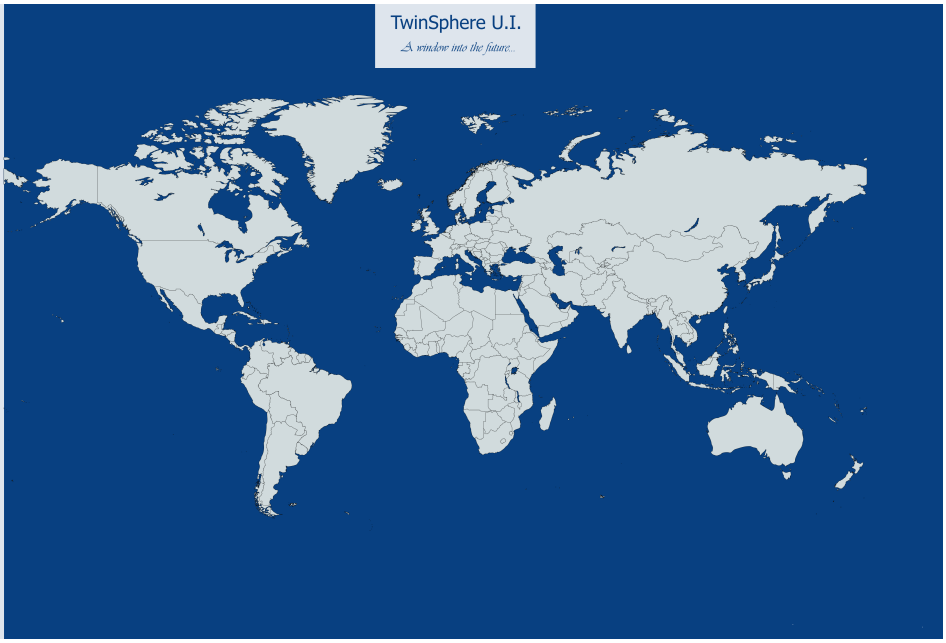
What is TwinSphere?

Imagine a high-technology digital twin of the earth, which can simulate and provide accurate data about every single climatological scenario. That is what TwinSphere. Assembled by a coalition of European nations, TwinSphere will make use of existing and future databases to accurately predict the outcome of natural disaster, temperature changes, human activity and much more. In addition, it will also offer a monitoring function, allowing users to easily locate and respond to impending or ongoing natural disasters.

Simulation:

The primary function of TwinSphere will be aimed towards simulating and predicting the outcome of future scenarios. The user interface will provide the ability to adjust parameters including but not limited to: moisture, rainfall, snowfall, forest fires and temperature increases, but also human activity such as industrial activity and energy consumption . It will also be possible to adjust the month, season to account for the near future. Finally, the users inputs will be processed in order to produce accurate numeral results, describing the aftermath. For example, were the user to simulate a global increase of 1C, the digital twin would output the percentage of ice that would melt, the amount of species that would go extinct etc. Another examples is, if a user decided to double electricity consumption of Greece. TwinSphere would fetch data regarding how Greece produces energy (93% fossil fuels) etc. in order to accurately show the increase in greenhouse gasses and the ozone layer Dobson Units above Greece. The inputs and outputs would come in the form of a text based A.I. chat bot. As seen in the visualisations below:

Insert simulation input...



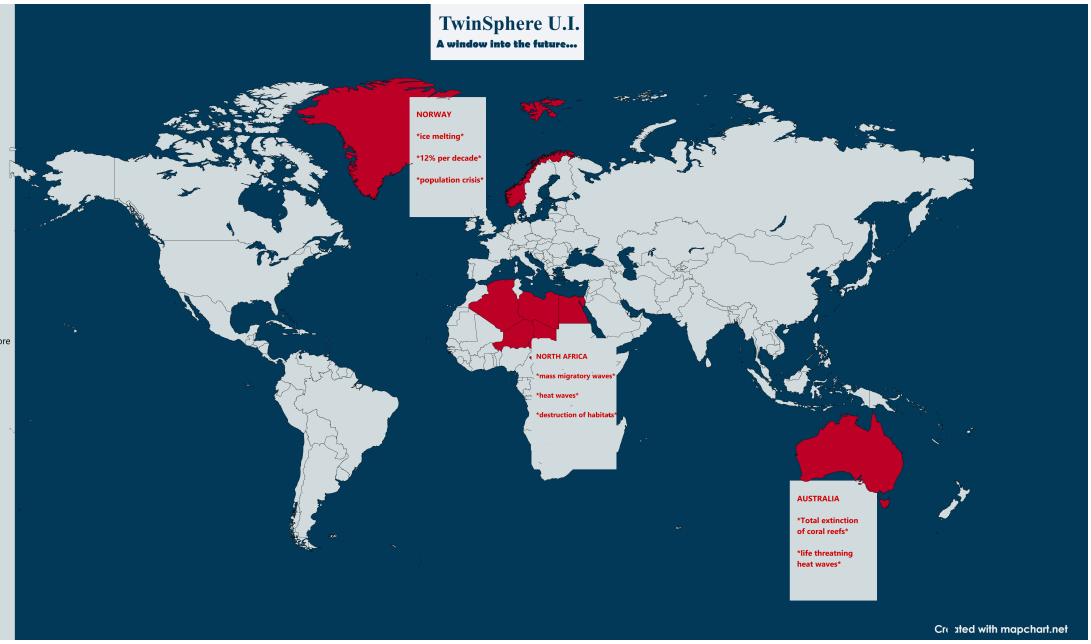
User: Increase global

temprature

by 1 degree celcius

TwinSphereA.I.:
Such an increase would have devestating effects on the planet.
Most notably, 9% of all species would become extinct.
Meanwhile, Australias entire coral reef population would vanish.
The above would all happen while vast amounts of land would become uninhabitable due to melting ice and the sun's radiation would threaten humans more prominently

TwinSphereA.I.
Please provide further input for more specific information



User: Please decrease indrustrial activity of Norway by 15%

TwinSphereAI: Processing....

TwinSphereAI: Such a decrease would largely benefit the climate. Norway
relies heavily on oil exports for its economy
which accounts for 1/4 of total greenhouse gas emissions.
A 15% decrease would see emissions drop by approximately 6 million tonnes.

User: Increase average global temprature by 1 degree celcius,
and give me a general description of the aftermath on a global scale

TwinSphereAI: Processing...

TwinSphereAI: A 1 degree celcius increase in

global temprature would have devestating results.

Most notably, 9% of all species on the planet would

lose their habitat and become extinct.

Meanwhile, the entirety of Australias coral reef population would vanish.

The above are only 2 specific events that would ensue alongside mass

flooding of coastal areas due to rising sea levels and major migratory

waves of animals who lost their habitat.

TwinSphereAI: Please provide additional input
for further or more specific information

Such a technology is already prevalent and advanced, making for an intuitive, comprehensible and technically feasible interface, especially with the technological advancements of 25 years.

But how? :

As was aforementioned, the digital twin will wield the power of A.I. as its main driving force. The generative A.I. will derive the results by combining data from multiple datasets with information on animals and plant populations, biome and geographical data of regions and also climatological data bases. Examples include: EOL(insect database), FishBase(fish database), HNMS (national weather service of Greece, there will be one for each nation respectively), the EUMETSAT database on weather induced extremes and also yearly declarations of nations regarding their energy production and greenhouse gas emissions. In addition, predator-prey relations between species will also be assessed in order to accurately predict ecological impact.

Monitoring aspect:

Complimentary to the simulation function, TwinSphere will also offer a real-time U.I. that provides information on weather induced extremes currently happening on a national level. Specifically, using data from weather services such as HNMS, the A.I. chatbot will provide visual and verbal warnings regarding potentially dangerous weather phenomena and the impact they could have on a region. The potential impact will be assessed by taking into account the elevation and biome of the area. The above, will be coupled with information regarding the areas rescue forces in order to aid decision makers and local governments in responding early and with the adequate forces. The data regarding rescue capability will require manual updates by regional governments and will include airlift capability, personnel count and vehicle availability. If the updates are done sincerely and without bias, the monitoring function will be a major tool in the adequate handling of natural disasters. A visualisation of the tool can be seen below:

TwinSphere A.I.: Currently viewing Greece.
Current CO2: 62.800.000 tonnes

Average temprature: 22C

Ozone layer: 322 DU

Main energy source: Fossil fuel (93%)

TwinSphereA.I.: Weather risk report

**Heavy rainfall at Kalochori Village

-High risk of flooding
-Road obstruction

Low danger

**Snowstorm at Smolikas

-High danger risk

Rescue assesment:

-No airlift capability
-Snowmobiles available
-30 personnel

By who, for who?

Finally, there is only one aspect left to be assessed. Who will do it, and who will use it? TwinSphere, aims to be a military grade tool which will provide an immense boost to sustainability sciences. Therefore, it will require adequate funding and innovative prowess, which will come from a coalition of nations led by the European Commission DestinE branch. Such a project does not benefit a single country or alliance, but the planet as a whole, which makes it an equal responsibility for all to contribute, with more powerful and advanced countries “chipping-in” were others cannot. The development process, on top of scientific thinking, will require a humanitarian approach. Nations will need to leave hypocrisy and rivalry aside, to create this powerful tool. After it is accomplished, TwinSphere will be in the hands of decision makers and their advisors (scientists and alike), in order to plan and assess future solutions for the planet. The monitoring function will be open-access to the public, in order for all civilians to use it and view the current weather risks in their region. Specifically, they will connect to a number of different domains hosting the TwinSphere monitoring U.I. in order to prepare accordingly for disasters. Meanwhile, the large processing requirements of the Simulation function, will restrict it to leaders, due to its costly operation. Yet, TwinSphere aims to open a window into the future. Through its detailed description of events, TwinSphere will be the shortcut to a sustainable and lengthy future if all is done properly, and each nation contributes to the best of their ability.