Four startups show the way to sustainability

Supported by the Oracle for Startups program

'If working apart we are forces powerful enough to destabilize our planet, surely working together we are powerful enough to save it'

Sir David Attenborough, COP26

Jeremy Cox, Founder CX-Create
Sponsored by Oracle for Startups program

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About this report

This month's theme is focused on four startups making a significant impact in the energy and utilities sector. They are innovating and changing the competitive landscape and holding the promise, so desperately needed, to boost sustainability and optimize the use of the Earth's energy and raw material resources.

Each of the four startups is supported by the Oracle for Startups program, and each brings something different to the global sustainability challenge. The four trailblazers are:

- Complete Intelligence – an intelligent platform for accurate forecasting and resources management
- Evreka – a circular waste management solution
- Faradai – sustainability intelligence for optimal energy management
- Grøn Sky – green cloud storage for documents, images, and videos

Each harnesses Oracle Cloud Infrastructure (OCI) to provide the scalable computing power required for the enormous workloads often involved. Security is another essential feature, and OCI delivers that with its second-generation cloud infrastructure technology. And each startup benefits from Oracle's customer and partner ecosystems, access to business and technical mentoring, and the go-to-market resources provided by the Oracle for Startups program.

Links to more detailed individual reports are provided so that readers can delve into each startup's story, why and how they got started, their successes to date, and what the future holds for them.

CX-Create is an independent IT industry analyst and advisory firm, and this report is sponsored by Oracle for Startups.

Key observations explored in this report

- It's all about the number - 414 parts per million of carbon dioxide.
- Climate change, a global awakening, and increased accountability are the key drivers behind the demand for relevant technologies.
- The four startups supported by the Oracle for Startups program have a major role to play and are already making a significant impact.
- Complete Intelligence provides the accurate evidence base for budgeting and forecasting decisions.
- Evreka's All-In-One SaaS Waste Management Platform promotes a circular waste-capturing economy.
- The Faradai AI-powered Energy & Sustainability Intelligence Platform provides real-time analytics to optimize energy consumption.
- Grøn Sky's vision is to reduce cloud storage's CO2 emissions by 90%.

It is all about the number – 414 parts per million of carbon dioxide

At COP26, the world-famous naturalist and environmentalist Sir David Attenborough delivered a powerful speech, stressing the urgency and exhorting the gathering of world leaders to take action to save the planet. For any still in doubt that we are facing a crisis of incalculable global catastrophic dimensions, he explained the underlying science in his unique and softly penetrating way.

The climate has been stable for the last ten thousand years, plus or minus 1° centigrade. This has allowed humanity to flourish and rely on predictable seasons. He patiently explained the direct correlation between the concentrations of CO_2 in the atmosphere and global warming. Today that stands at 414 parts per million, unchecked, temperatures will rise by as much as 4ºC on average, with catastrophic impact on life, habitats, and ecosystems.

> 'If working apart we are forces powerful enough to destabilize our planet, surely working together we are powerful enough to save it.'
>
> Sir David Attenborough, at COP26

He stated bluntly, the role of delegates and world leaders is to agree on actions to reduce that number closer to the 300ppm levels last seen before the industrial revolution and restrain global warming this century to a maximum of 1.5%.

Having laid out the salutary facts, his message was one of hope, *'If working apart we are forces powerful enough to destabilize our planet, surely working together we are powerful enough to save it.'* He stressed humanity's ability to solve problems by first understanding them and then devising solutions to tackle them – through technology that generates affordable clean energy and creates an environment of healthy air. It is about working with and creating a symbiotic balance with nature as a reliable ally that would do the work of carbon capture through reforestation and rewilding.

Climate change, a global awakening, and increased accountability are the key drivers behind the demand for technological solutions

Few places in the world have not been affected by the impacts of climate change. If the Covid-19 pandemic has helped us realize how interconnected we all are, the almost monthly reports of 'natural' disasters have provided a visceral sense of urgency to do something about climate change now, not in decades or future lifetimes to come.

- In January – fifty-year record snowfalls in Madrid caused $1.5bn in damage. Later that month, Cyclone Ana, a month after category 5 Yasa, ripped through Fiji's northern islands forcing over 10,000 people to seek shelter in 318 evacuation centers.
- In February, 3.5 million businesses and homes in Texas were left without power as temperatures fell to -13ºC/8.6ºFarenheit.

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- March saw deadly dust storms turning Beijing's sky orange as the dust carrying minuscule particles polluted the air. The same month extreme flooding impacted the whole of New South Wales in Australia, bursting dams and flooding homes.
- In April, Cyclone Seroja in Indonesia killed 160 people, and a combination of flash floods and mudslides forced more than 22,000 people to evacuate their homes
- Moscow and neighboring areas suffered record temperatures in June
- July was one of the worst months this year, with a heat dome over the Northwest United States and Canada. Oregon suffered one of the largest wildfires in its history, destroying 364,000 acres of land. Germany suffered catastrophic floods that destroyed homes, killing 184 people. 300 people also died in floods in China's Henan province.
- Massive wildfires ravaged Greece, Italy, and Turkey in August, and at the end of the month, Hurricane Ida hit the southern states of Louisiana and Mississippi.
- India and Nepal also suffered heavy and late monsoon rains causing catastrophic flooding killing over 180 people.

The evidence continues to build that nearly all of these disasters resulted from man-made global warming and that scary number 414ppm. The State of the Global Climate 2021 found that average sea levels reached a record high this year. If the target of 1.5°C isn't met, island communities will lose much more than their homes, and many cities worldwide will become uninhabitable.

It is not all bad news; however, there are several reasons for hope. Not least that climate change has gone mainstream as a concern, and the public and consumers want to know what their governments and businesses are doing about it.

At COP26, governments agree to collaborate and take action on sustainability

Early on at COP26, the governments of 128 countries agreed to reverse deforestation and ensure that finance flows would be aligned around climate goals and not as a catalyst for further destruction. Several other vital agreements to create the conditions that foster affordable green energy were also secured:

- **One Sun Declaration: Green Grids Initiative** promises to harness the sun's energy and develop technologies to share green energy across borders. Developing and deploying cutting-edge techniques and technologies to modernize power systems and support green grids which can integrate billions of rooftop solar panels, wind turbines, and storage systems.
- **Aligning private finance to net-zero** – under the leadership of former Bank of England Governor Mark Carney, over $130trillion of private finance was committed to science-based net-zero targets through the Glasgow Financial Alliance. This underpins the critical role of technology in harnessing clean energy and sustainable waste management.
- **The Glasgow COP26 Pact** resulted in agreement by governments to keep the hope 1.5C target alive, but only just. As the COP president Alok Sharma said: "*We can now say with credibility that we have kept 1.5 degrees alive. But, its pulse is weak and it will only survive if we keep our promises and translate commitments into rapid action. We must now move forward together and deliver on the expectations set out in the Glasgow Climate Pact. It is up to all of us to sustain our lodestar of keeping 1.5 degrees within reach and to continue*

our efforts to get finance flowing and boost adaptation. After the collective dedication which has delivered the Glasgow Climate Pact, our work here cannot be wasted."

Large companies are under growing pressure to report on energy, emissions, and waste management

According to the EY report, The future of sustainability reporting standards, June 2021, there are now around 600 environmental, social, and governance (ESG) reporting requirements globally, a bewildering array of standards facing international companies. At COP26, a degree of standardization is expected with the launch of the International Financial Reporting Standards (IFRS) Foundation's International Sustainability Standard Board (ISSB). According to the report, the most relevant reporting elements, as far as environmental impacts are concerned, will include waste management, emissions impact, energy efficiency, air and water pollution, environmental protection, biodiversity loss, and restoration.

As well as reporting on sustainability, there is a growing demand for technology solutions to help large corporations meet their climate goals.

A new Klondike, but this time it's green, not gold, that is attracting investors

According to the FT, a boom in VC investment in climate tech reached over $17billion in 2020 and is likely to be even higher this year. It's not difficult to see why when social, political, economic, scientific, and technological developments are all pushing in the same direction. The earlier mini-investment boom between 2006 and 2011 petered out because most of the world was still heavily wedded to fossil fuels and localized concerns. Since then, there has also been a revolution in cloud technologies, IoT, and AI, giving startups access to massive computing power at relatively low costs. The opportunities are astronomically immense and are already leading to a new Klondyke, but this time it's green.

The four startups supported by the Oracle for Startups program have a major role to play and are already making a significant impact.

In our report "Oracle for startups program fuels continuous innovation the open way," we highlighted the growing role of entrepreneurial startups as inventive participants in a wide range of ecosystems, many focused on specific industries. Those supported by Oracle for Startups have access to massive computing power and modern development tools, enabling them to develop their businesses without the need for substantial investment.

Figure 1 provides a snapshot of the four startups using Oracle cloud technologies supported by the Oracle for Startups program.

Startups	Beneficiaries	Value provided	Development stage
COMPLETE INTELLIGENCE	Large enterprises that buy raw materials for production including energy, manufacturing, petrochemical, utilities	Complete Intelligence platform provides the accurate evidence base for budgeting and forecasting based on 16 billion data points from proprietary and publicly available data	Launched 2020 and has proved effectiveness with several large global clients
evreka	Facilities management, medical waste management, construction and demolition companies, skip hire, recycling, waste collection, local authorities and municipalities	Evreka solve the waste management problem with its SaaS-based all-in-one platform. Providing a 360° view of waste management	Established 2016 in Turkey, and now has over 10,000 users worldwide and partnerships with leading facilities and local waste management companies
faradai	Any industry or organization that consumes significant amounts of energy, primarily automotive, aerospace, banking, hospitals, hotels, manufacturing, municipalities, office buildings, retail, shopping malls, supermarkets, telecoms, and utilities	AI-powered Energy & Sustainability Intelligence Platform provides real-time analytics to optimize energy consumption	Established in 2017 as Reengen in Turkey, as Faradai internationally, the company serves clients in Europe, the Middle East, Latin America, US, Asia and Australia
Grøn Sky Your Sustainable Cloud	Small and medium enterprises in any industry	Reducing the carbon footprint of cloud storage by enabling customers to archive documents, images and videos in low CO2 emitting archive storage	Early stage, launched May 2019 in Denmark. Crowdfunding for further investment

Individual reports on each of the startups are provided and accessible by following the relevant links in this report. This section provides the main highlights to give you a feel for the innovation being delivered by these remarkable businesses.

Complete Intelligence provides the accurate evidence base for budgeting and forecasting decisions

Tony Nash, founder, CEO, and Chief Data Scientist, is steeped in market intelligence. A former VP of market intelligence firm IHS (now IHS Markit), and The Economist Intelligence Unit, where he was Global Director Consulting and Custom Research. He observed that large international companies he had supported typically followed an annual budgeting cycle based on often inaccurate or opinion-based data. It was not unusual to find large teams of people, sometimes several hundred involved in the process and heavily reliant on gathering data from multiple departments in complicated spreadsheets. The process could last several months, and the variance between forecasts and actuals was often above 35%, which could erode profits or tie up resources unnecessarily.

Trial, error, and persistence

As a data scientist familiar with cloud technologies, he developed algorithms to improve forecast accuracy and a complete process from data ingestion to forecasting and testing the results. He started developing the machine learning ML algorithms in 2017 while still consulting in Asia from his base in Singapore. His first iteration failed to produce a level of accuracy that would provide a sufficiently compelling proposition. He wanted to get down to an error rate of no more than 5%-7%. He adopted the 'ensemble' approach covering thousands of different scenarios layering external data on commodities such as the copper price with a customer's actual costs, identified in their general ledger.

> '' Many companies have budget processes that last months, layered with bias, anecdotal forecasts and friction. Oftentimes, these budgets are so flawed that they're discarded after the first quarter''
>
> Tony Nash, founder and CEO, Complete Intelligence

The Complete Intelligence Platform consists of three modules

The Complete Intelligence Platform hosted on Oracle Cloud Infrastructure (OCI) consists of three forecasting modules:

- **CI Futures** – to forecast market trends. Covering over 1,400 industries in more than 100 countries and a database of over 16 billion data points from proprietary and publicly available data. Millions of learning algorithms are used, which factor in the most recent global events.
- **RevenueFlow** – provides accurate results for demand and forecast sales and revenue projections.
- **CostFlow** – to enhance product line profitability and improve supply chain and procurement outcomes.

For a more detailed analysis of Complete Intelligence, follow this link to the report.

Evreka's All-In-One SaaS Waste Management Platform promotes a circular economy

Four co-founders, including the current CEO, Umutcan Duman, started the company in 2016 in Ankara, Turkey. The idea emerged after the co-founders, former engineering students with a passion for the potential of engineering to boost sustainability, noticed an empty city rubbish collection truck returning to the depot after a wasted journey. This seemed highly inefficient, wasteful, and an unwelcome contribution to pollution.

This gave birth to the initial idea to develop sensor hardware that could be used via IoT as input to help coordinate the dispatch and movement of the city's waste collection trucks. Sensor information via IoT would provide a real-time view of the position of any collection cart enabling the managing company to orchestrate waste collection and avoid wasted CO_2 emitting journeys.

Later that year, they secured their first local order in Turkey. Further clients were added in 2017 but what changed their perspective was securing their first large enterprise client in 2018. This made them realize that while waste management processes might vary from company to company, each faced similar challenges. This broadened their perspective on the entire waste management

opportunity by developing a flexible and modular SaaS platform adapted to different industries, localized rules, and unique company workflows.

By the end of 2019, Evreka had clients in eight countries, expanding eastwards to the Middle East and North Africa. 2020, despite the pandemic, saw further expansion in Europe and Latin America.

> **'Our vision is to lead the digital energy transformation industry'**
>
> Sahin Çağlayan, co-founder and CEO Faradai.

They also realized that waste management could create a circular economy, rather than the collection of waste followed by disposal if carried out efficiently end-to-end, including material recovery. Their vision moved from tackling inefficiencies within the waste collection process to the entire waste management to the extraction of materials that could be sold to manufacturers and reused as raw materials for different industries. The vision had shifted from inefficiency in waste management to 'closing the loop' on the circular waste management economy. Not just generating revenue from waste management but also material recovery. In 2021, Evreka added material recovery to their SaaS platform.

Follow the link to the complete report for a more detailed analysis of Evreka and the All-in-One Waste Management Platform.

The Faradai AI-powered Energy & Sustainability Intelligence Platform provides real-time analytics to optimize energy consumption

> **'Our USP is 360-degree view of waste management.'**
>
> Ahmet Cihat Toplutaş, Head of Staff, Evreka

The company was born out of an idea that germinated while Sahin Çağlayan (CEO) and fellow co-founders Burak Sefer (COO), and Utku Simitli (VP Products and Services) were still at college studying digital energy transformation. They tested out their ideas with early sponsors after graduation, including BSH, IBM, and Siemens. This gave them the confidence to pursue their ideas further.

The co-founders moved to Silicon Valley to deepen their understanding of what it would take to be successful technology entrepreneurs. They enrolled on the Singularity Group Leadership Transformation program, with the aim of 'finalizing our ideas, shaped by academia, corporate work experience, and Silicon Valley. With the desire to be a high impact startup taking advantage of IoT and AI'.

Reengen was launched in 2017, targeting Fortune 500 companies. A Seattle-based investor, Capria Ventures, focused on startups with the potential for high growth and a positive impact on the environment, provided the initial funding. By 2019, Reengen was active in global markets trading as Faradai outside its homeland, Turkey, supporting retail, banking, energy, and telecoms customers.

The Faradai solution is based on a PaaS data analytics platform to help large companies and organizations transform their energy consumption through sustainability intelligence. It provides end-to-end monitoring of energy consumption through nine modular applications outlined below.

Faradai has used its considerable data science expertise to develop advanced algorithms to support energy optimization.

Global reach and security
Hosted on the Oracle Cloud Infrastructure (OCI), the platform is highly scalable, enabling organizations to create a unified view of energy generation and consumption from buildings, renewables, and grid assets. Third-party applications and data can also be integrated and ingested via APIs and data ETL tools.

Oracle has data centers in all world regions and will be adding fourteen more by the end of 2022. This enables organizations to meet or exceed any regional, local, or industry regulatory requirements and provides class-leading cybersecurity levels. The entire IoT value chain is protected for data privacy and cybersecurity from the sensor to the gateway.

Real-time analytics
The Edge Analytics with IoT Gateway allows critical analysis in real-time with zero latency. The platform automatically sends alerts to technicians to resolve any issues swiftly. Faradai predictive intelligence uses ML algorithms optimized for energy management. Faradai also provides monitoring of edge devices to ensure that they are functioning correctly and provide reliable data.

Follow the link to a more detailed analysis of the Faradai company and platform.

Grøn Sky's vision is to reduce CO2 emissions by 90% on cloud storage
Pierre Bennorth is a serial entrepreneur and inventor, a former toolmaker and housebuilder specializing in glass and aluminum construction. He invented a 1:1 stackable rack for storing CDs. In 1997 he had his first foray into software development with a shortcut program for the internet.

He is a father of five children and has a deep interest in sustainability and protecting the future for his children and future generations. In 2017 he decided that heavy lifting in construction was becoming too demanding. It was time to take the plunge. He developed a decentralized data center combined with energy storage creating a prototype Cel2. With a built-in household battery, Cel2 can store power from solar energy produced during the day for use in the evening. In the same way, power can be saved from wind turbines, so they do not have to be turned off when it is windy.

Birth of the idea and serendipity
Later that year, he went to a network meeting at the Danish Energy Association 2019. On the way down in the elevator from the 5th floor, he met Erik Ejdrup Hansen, CX - Senior Sales Executive from Oracle. By the time they reached the ground floor, Hansen had responded positively to Bennorth's pitch and encouraged him to pursue it.

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The next day he was introduced to Lars Vestergaard from Oracle for Startups, Head of Market Connect EMEA, and the relationship with Oracle began. A month later, he attended a webinar that included AWS, Microsoft, and Oracle and was immediately impressed by the highest levels of data security offered by Oracle Cloud Infrastructure. Information on electrical power usage is highly sensitive, and therefore security was his number one concern.

Launch of Grøn Sky – May 2019

On 29th May 2019, the company was officially launched, and Bennorth now runs a team of four plus a student engineer.

On 6th March 2020, the components to build a prototype were delivered to the Danish Technology Institute for testing. Three days later, the Covid pandemic led to nationwide lock-down – hardly an auspicious start. Undeterred, Bennorth and his team have used the time to develop the Grøn Sky platform.

> 'our vision is to reduce CO2 emissions by 90% on cloud storage. We know it is possible to achieve - if the users and the (leaders/politicians/decision-makers) will back us.
>
> Pierre Bennorth , Founder and CEO Grøn Sky

The Grøn Sky cloud solution, all built on OCI, allows customers to archive files or images, videos, and documents that do not require instant access. In addition to the security advantages provided by OCI, Oracle has data centers throughout the world, providing potential global reach as Grøn Sky develops. An additional benefit is that Oracle's goal is to power its cloud with 100 percent renewable energy by 2025, a goal they have already achieved within the EU.

Follow the link for the more detailed analysis of Grøn Sky and the Grøn Sky Platform.

CX-Create's viewpoint

Climate change is the biggest challenge facing us, and organizations and individuals struggle to find ways to make a positive contribution to delivering a sustainable future.

Each of the startups highlighted in this report is making a significant difference that benefits customers and society, providing real hope that we can all make a difference collectively. Complete Intelligence can help large organizations minimize waste and lower costs through smarter forecasting based on accurate data. Faradai is helping businesses and public sector organizations manage energy consumption through sustainability intelligence. Evreka is making a massive difference in reducing waste and CO2 emissions and contributing to a circular economy for waste, not just reducing it but also releasing its value. And lastly, the newest of the four startups, Grøn Sky, is helping us reduce the hidden CO2 costs of cloud storage. Who else didn't realize that today's cloud computing is an unwitting contributor to global warming? And let us not forget the supportive contribution from Oracle in clean cloud infrastructure and the Oracle for Startups program.

Appendix

About CX-Create

Jeremy Cox founded CX-Create Limited in January 2021, a former principal analyst at Omdia (formerly Ovum) focused on customer engagement strategies and platforms.

He is recognized by major CX vendors, clients, and former colleagues as a leading thinker in customer experience and engagement. Formative experiences in the 1990s at IBM convinced him of the critical importance of understanding the business world from the outside in. These insights were put to practical use in his former roles as a principal CRM consultant at KPMG Consulting and as an independent consultant supporting public and private sector organizations.

Our mission

CX-Create's mission is to help enterprises and the vendors and startups that serve them remain relevant. The company's primary focus is to track and understand the constantly evolving customer experience world and share those insights with clients. Continuous innovation is also an essential component of persistent customer relevance, directly and indirectly, which is why we are enthusiastic about startups and the Oracle for Startups program.

Further reading

- Complete Intelligence – an AI-powered intelligence platform for strategic investment and procurement decisions
- The All-in-One Waste Management Platform from Evreka
- Faradai AI-powered Energy & Sustainability Intelligence Platform
- GRØN SKY – a Green Cloud to massively reduce the carbon footprint
- Oracle for Startups program fuels continuous innovation the open way
- Four communications industry trailblazers accelerate the monetization of 5G and Edge

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