Within an international and European environment facing radical changes in the agricultural sector and in food systems in general, NEUROPUBLIC has set in motion and is putting into practice timely and sustainable strategic objectives related to the great challenges of our times, climate change and the efforts to achieve a balance between the goals of food sufficiency, safety and quality and the protection of natural resources.

Based on its many years of experience and know-how, the company is nowadays supporting farmers by providing the necessary technological tools to answer the new and very high demands of the present and the future.

The pioneering smart farming system **gaiasense** has already been applied in the field for years for the benefit of Greek farmers, supporting the collective systems of the primary sector, clearly contributing to their economic and environmental sustainability, and laying the foundations for the green and digital transformation of Greek agriculture as a whole.

At the same time, **NEUROPUBLIC** and its amassed experience have left their mark on another major goal of our times, that of digital governance, by essentially contributing to the modernization of organizations belonging to the public sector and the local authorities and by simplifying procedures for citizens.

Piraeus Bank and **NEUROPUBLIC** have collaborated successfully in recent years in the framework of joint efforts to support the farming world, which aim to modernize and enhance the competitiveness of Greek agriculture.

Their joint work for the green and digital transformation of the agricultural sector in Greece is not simply an extension of their former collaboration but fully outlines the strategic objectives of the Bank, which are clearly and intently focused on the same goals: sustainable development in line with knowledge and technological innovation.

The future of **NEUROPUBLIC** finds the company prepared but not complacent. Our experience and know-how, the relationships of trust that we have built with the representatives of the primary sector, and our long-term presence and networking in Brussels, the centre of developments and decision-making, allow us to safely say that we are and shall remain the leading force in the digital transformation of the agricultural sector, and a powerful agent in the digital transition of public administration and local government.

Christodoulos Antoniadis
Chairman
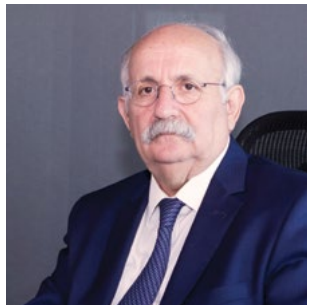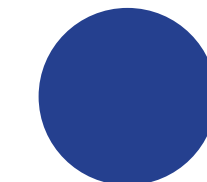
NEUROPUBLIC is one of the largest and most dynamic Greek companies in the IT system development sector.

Since 2003, the year of its establishment by acclaimed IT and business administration executives, and to this day, the company continues to follow a steady upward course and now holds a leading position in the market.

Our vision is to become a dynamic part of the global, European and national drive for the digital transformation of the economy, society and public administration, with respect for humanity and the natural environment.

Our goal is to meet the needs of public administration and businesses in the agri-food sector in relation to their successful green and digital transition, and in accordance with the dictates of the European Green Deal, through the development of specialized information systems and the provision of integrated products and services that answer to their needs, and are fully aligned with the challenges and demands of our times.

Within this framework, our products and services are a guarantee of state-of-the-art, efficient digital governance for a large number of Municipalities in Greece, that use the integrated information systems of **NEUROPUBLIC** to effectively cover all their management processes and provide services to the local population.
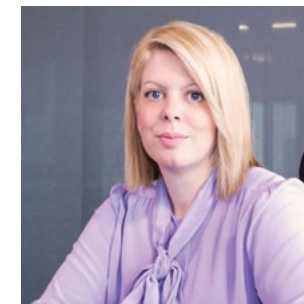
At the same time, we understand the need to support Greek agriculture with the aim to improve its economic, environmental and social sustainability, by focusing our efforts on the digital transformation of the production process through the use of cutting-edge technologies. This has been our vision since 2012, long before digitization became a horizontal goal for Europe in the framework of the European Green Deal and the Common Agricultural Policy (CAP), whose implementation shall begin in 2023.

The development of the innovative **smart farming system gaiasense,** which is presently being used to improve the economic and environmental performance of thousands of producers in Greece and the EU, has been recognized as a best practice on an EU level and is expanding at a rapid pace, a fact which justifies our efforts and fills us with inspiration and strength so as to continue its development further.

In order to achieve our ambitious goals, we are continuously investing in human resources and infrastructure. Our workforce consists of a steadily growing and evolving multidisciplinary **group of IT engineers, data scientists, programmers, agronomists, rural and surveying engineers, as well as experienced business administration executives,** currently numbering over 100 people.

Thanks to the excellent financial status of the company, its experienced personnel, the constant upgrading of our know-how and the reliability of our products, as well as the systematic monitoring of European and global developments, combined with our participation in major alliances and large-scale IT projects, we are able to plan the future steps of **NEUROPUBLIC** with an air of unfailing optimism and certainty.

Roza Gargalakou
CEO

We are committed to the development of high-quality, innovative services.

Consistency and building trust with our clients are our goals!

THE COMPANY

State-of-the-art IT systems

NEUROPUBLIC is a pioneering company in the field of **Computer and Information Technology** that specializes in the development of **cloud and web** integrated IT systems and applications of the highest standard.

The company is active in the fields of agriculture, telecommunications, the defence and aerospace industry, Earth observation, the computerization of public and private sector organisations, and digitized documentation, while also being characterized by its long experience and expertise in the development of IT products and services for the agri-food sector.

NEUROPUBLIC provides high-quality services to organizations and companies active in the Greek and global market. At present, over **800,000 end users** in the sectors of agriculture and Public Administration are successfully using its products and services.

Smart systems for smart growth

NEUROPUBLIC holds a leading position in the field of agriculture, by providing a broad range of technological services to the private and public sector.

At the same time, it is investing largely in the **Research & Development** sector, by focusing on the creation and evolution of the innovative **smart farming system gaiasense,** which aims to digitize and reform agricultural production in Greece.

The company has created the first and only large-scale **Internet of Things** infrastructure in Greece, using thousands of wireless sensors of its own design and manufacture, which have been installed on agricultural land,.

At the same time, it uses ground-breaking technological solutions to develop integrated IT systems that cover a large number of diverse requirements.

Extroversion

Through its specialized IT systems and services, **NEUROPUBLIC** guarantees the successful digital transition of public administration agencies and private sector companies, in line with the developmental goals of the EU for the next decades.

Meanwhile, it is closely following and actively contributing to the debate on **the digitization of the European agricultural sector,** which is taking place on the level of EU and European representative bodies.

It is also participating in European research programmes scientifically related to the range of its activities and applying their research outcomes on innovative products and services.

Finally, **NEUROPUBLIC** is a permanent member of several European and international initiatives and alliances, which aim at the exchange of know-how and collaboration in order to resolve common problems in the most effective manner.

Modern facilities

NEUROPUBLIC has an ultra-modern privately owned office building in Piraeus that covers **1,700 m2,** and a branch in Thessaloniki. There is also a state-of-the-art **Data Center** located at the company's headquarters in Piraeus, which provides **cloud services.**

Furthermore, in 2021, a privately owned 3,000 m2 facility will also be completed in Piraeus (Papastrateio) that will be used for the production of Telemetric Stations and the relocation of the whole group.

OUR MISSION

To support Public Administration and businesses of the agri-food sector in their successful green and digital transition, in accordance with the dictates of the European Green Deal, through the development of specialized IT systems and the provision of integrated products and services that meet their needs, and are fully aligned with the challenges and demands of our times.

Based on our long-term experience, profound know-how and cutting-edge technological infrastructure, we aim to develop innovative solutions that fully cater to our clients' needs.

Supported by our timeless values (reliability, quality and innovation), we create cloud applications that aim to modernize Public Administration, reduce production costs and increase productivity.

OUR PHILOSOPHY

We focus on consistently creating new innovative applications and services, in a high-quality and safe environment.

Addressing the needs of our clients is at the heart of **NEUROPUBLIC's** philosophy, through the development of superior innovative technological solutions that always take into account current demands. In this way:

--- Our services aim at improving the productivity of Public Administration and the quality of the services provided by general government bodies, thus ensuring that citizens enjoy a higher level of service.

--- We contribute to the digitization of the agricultural sector, enhanced competitiveness and rational management of farming activities in Greece through our smart farming services that reduce the environmental footprint of agricultural production and therefore its impact on the environment.
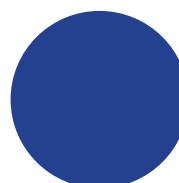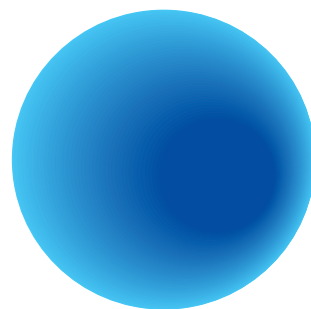
OUR VALUES

The advantage and growth of our company are inextricably linked to our ethos and values, which underline our respect for our clients and the environment.

We respect our clients and offer them solutions that facilitate their work, provide them with new prospects and contribute to the achievement of their goals.

At the same time, we respect the environment: By developing smart farming services that play a role in the reduced use of inputs in agriculture, the protection and sustainable use of natural resources and, consequently, the production of food with a lower environmental footprint.

We understand and offer solutions in relation to the constantly changing needs of the market and of our clients.

At NEUROPUBLIC, we develop and provide premium services to our clients and, by predicting their future needs, envision the expansion of our activities through new integrated solutions that can help us contribute to their development and prosperity.

OUR VISION

Our vision is to be a dynamic part of the global, European and national drive for the digital transformation of the economy, society and public administration, with respect for humanity and the natural environment.

More specifically, our aim is to:

--- Offer the technology of the future today, by providing services that fully address the needs of our clients.

--- Continue to innovate in the field of IT systems and form a key pillar in the restructuring of the agricultural sector.

--- Become a leading force in the sector of smart farming and agriculture in general, both in Greece and in Europe, with the aim to offer innovative services for the development of the agri-food sector.

--- Promote innovation in the provision of digital solutions for Public Administration through IT systems that incorporate and combine a deep knowledge of its needs with avant-garde technologies (Web-based, GIS, IVR etc.); systems to be used as tools for the modernization and simplification of processes for the workforce and for citizens.

STRATEGIC PARTNERSHIPS FOR THE SUSTAINABLE DEVELOPMENT OF THE AGRICULTURAL SECTOR

The first phase of the strategic partnership between **NEUROPUBLIC** and Piraeus Bank is complete, with the participation of the latter in the company's share capital.

The above strategic partnership is the culmination of the two partners' common vision, which points to the sustainable development of the agri-food sector, and dealing with the challenges of climate change.

This strategic partnership validates the commercial strategy of **NEUROPUBLIC** in the most creative and promising way, its key priority being the valorization of smart farming in the new production model of Greece.

SERVICES

Innovation, expertise, reliability, vision.
This is how we plan the future of the agri-food sector!

NEUROPUBLIC focuses on the provision of innovative and reliable services to its clients, combined with its systematic investment in research, growth and innovation, which allows the company to create IT systems of a high quality and performance.

In this context, **NEUROPUBLIC** offers the latest, most efficient solutions to organisations and companies, specializing in the sectors of agriculture and Public Administration.

Smart farming - gaiasense

gaiasense has been fully developed by **NEUROPUBLIC** and is an avant-garde smart farming system that is specially adapted to the needs of agricultural production in Greece, and the whole of the Mediterranean.

It is an innovative tool used for the collection and processing of digital data related to the soil, water, atmosphere and plants belonging to each crop. **gaiasense** has already contributed to the development of digital agricultural consultancy services by providing guidance to thousands of farmers in Greece and abroad; it is now rapidly expanding further.

gaiasense is an integrated system, whose technological infrastructure consists of thousands of IoT sensors, designed and manufactured by **NEUROPUBLIC,** which have been installed in a large number of plots in Greece and Europe.

The **gaiasense** system allows farmers to enjoy one of the most advanced smart farming consultancy services in Europe, for the cost of an annual subscription only, which depends on the size of their holding, and without needing to invest in any technological equipment.

The **gaiasense** system combines numerous information technologies, such as **Big Data, Machine Learning, Cloud Computing, IoT, Service-oriented Architectures,** modern techniques and programming languages and the **Semantic Web,** with multidisciplinary sectors such as soil science, agricultural engineering, meteorology, rural, agricultural and biological sciences, as well as sciences linked to the environment.

NEUROPUBLIC develops all technological components of the gaiasense system, i.e. the software, telemetric stations, sensors, computer systems and data analytics; moreover, the company has the operational responsibility for the development and functioning of its system of stations that cover an extensive network all over Greece.

The gaiasense network in Greece and abroad

Poland & Ukraine

Portugal & Spain

Cyprus

Current Network
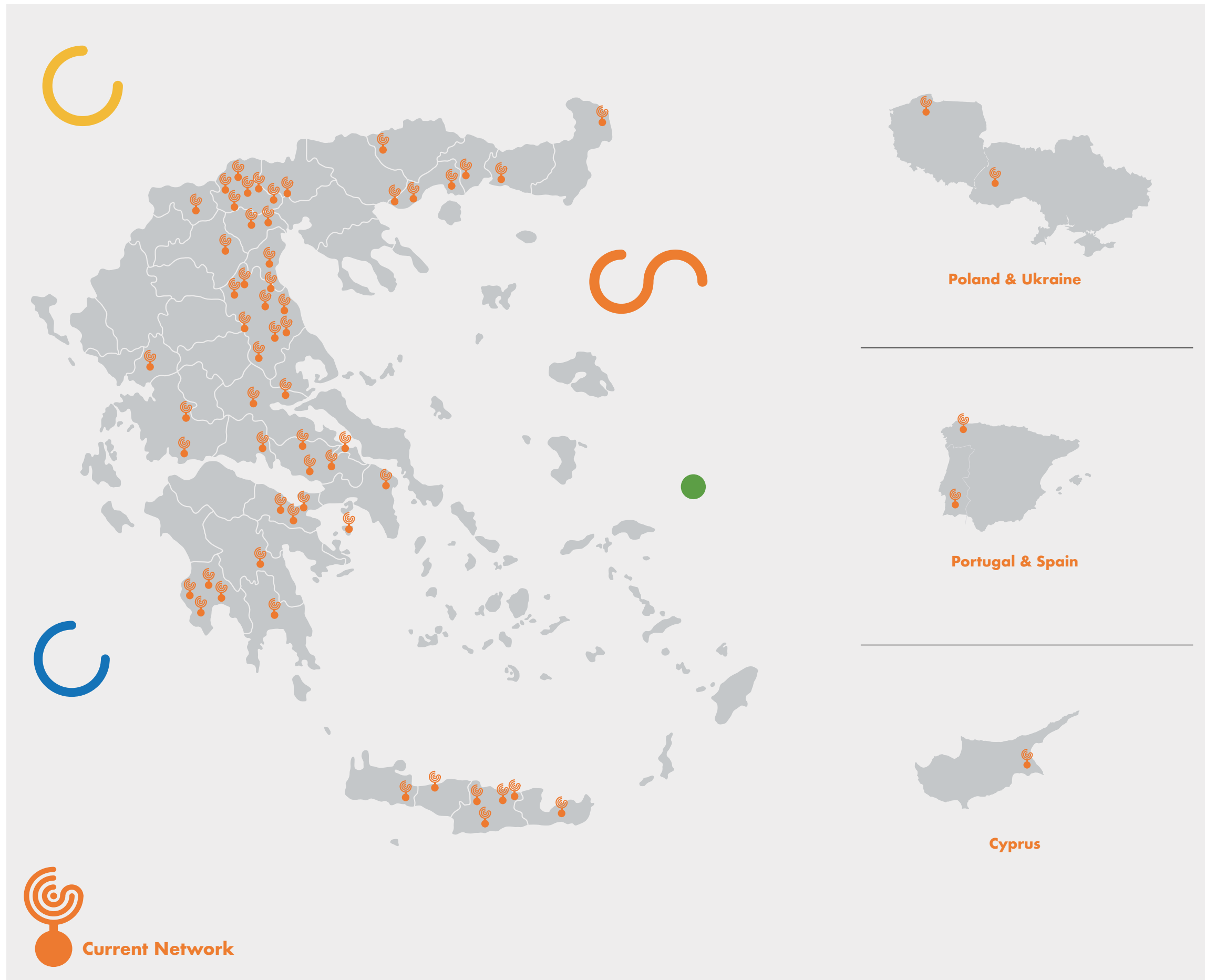
Case Study

The **gaiasense** smart farming system can be applied to a large number of crops of great financial interest, such as **vineyards (table and wine grapes), olives (table olives and those used for olive oil), cotton, peaches (freestone and clingstone), tobacco, potatoes, tree nuts (almond and walnut), vegetables etc.**

Thanks to its high level of adaptability, **gaiasense** is used for both open-field and greenhouse crops, conventional and organic, thus covering a broad range of different needs in areas with major differences related to their microclimate and soil conditions.

The telemetric stations of **gaiasense** are installed in various regions in Greece –from Evros as far as Crete– and abroad, and collect large volumes of atmospheric and soil data, which are then used to optimize agricultural production through the provision of smart farming advice.

The innovative approach of gaiasense which offers **Smart Farming as a Service,** makes it accessible even to small-scale farmers, who comprise the majority of the agricultural sector in Greece and the EU. Bypassing the need to invest in costly technological equipment, **gaiasense** allows all farmers to enjoy the benefits of smart farming.

GAIASENSE MOBILE APP

NEUROPUBLIC has also developed the **gaiasense mobile app**, a **gaiasense** smartphone application.

The **gaiasense mobile app** is based on the technological infrastructure of **gaiasense**, which is an integrated smart farming system that already caters for a large number of crops in various regions of Greece. With over 320 agrometeorological stations installed in fields from Evros as far as Crete, gaiasense exploits scientific models for the irrigation, fertilization and plant protection of each crop and, thanks to its technological and scientific infrastructure, provides information and advice that is highly accurate and effective.

In this way, farmers receive information in real time about each one of their fields, as if they had suddenly acquired an agrometeorological station and had regular visits by an expert agronomist and a team of scientists providing advice that is based on the data collected by **gaiasense**, as well as satellite images. All these services are provided to farmers for a small annual subscription fee only. This is the comparative advantage of the **gaiasense mobile app** that has long characterized **gaiasense** as a remarkable innovation for farming in Europe.

The **gaiasense1** basic package is the first step of entry into smart farming and provides information to farmers regarding:

--- **the weather:** specialized weather forecast for each field along with information on the possibility of extreme weather events occurring in the forthcoming period.

--- **plant protection:** timely warnings in case of a potential crop enemy or disease, as well as updates related to how suitable the weather conditions are for spraying.

--- **irrigation:** information on water indices in order to optimize irrigation.

--- **fertilization:** crop monitoring through satellite images and the NDVI vegetation index.

--- **growth of crops:** monitoring factors such as growing degree-days and chill hours.

--- **the suitability of the soil and climate conditions** of an area in relation to a specific crop, so that farmers know which crops will thrive in their fields and which fields are suitable for growing specific crops.

--- **use of the application and the provision of information on agricultural production issues** by a digital assistant.

All this and more is available through the **gaiasense1** app, which provides support in relation to every field and crop in Greece.
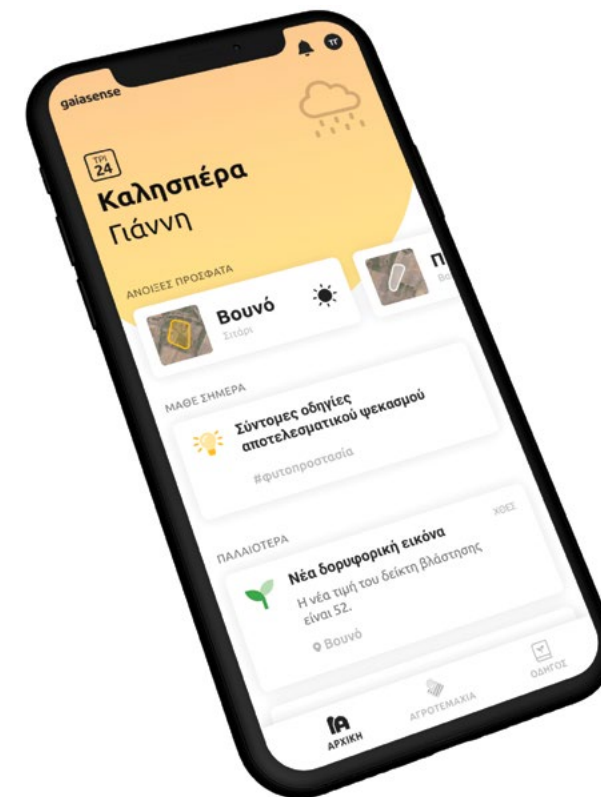
The second package of the app, **gaiasense2**, acts as an advisor and, in addition to all **gaiasense1** services, also provides:

--- Advice on plant protection,

--- Advice on irrigation,

--- Advice on fertilization based on soil analysis,

--- The possibility of plot parameterization through the app.

Finally, **gaiasense3** is the most integrated solution offered by the gaiasesense system, since, in addition to all **gaiasense2** services, it also provides **technical support on irrigation and fertilization issues by an agricultural consultant**, along with a crop production optimization plan.
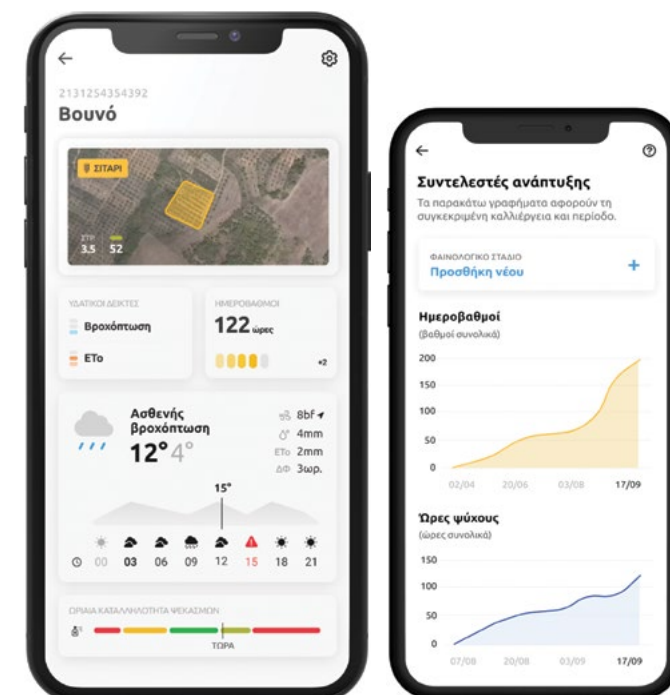
AGRICULTURAL POLICY IT SYSTEMS

The long experience of **NEUROPUBLIC** in the development of Integrated Information Systems, and its accumulated know-how on issues related to the **Common Agricultural Policy (CAP),** have made the company a pioneer in this particular field.

Aiming to support the operational model of the CAP, **NEUROPUBLIC** is planning and developing a range of present-day systems and services, which comply with the proper implementation of the regulatory requirements of the CAP and support a number of interventions related to **Pillar I (Direct Payments)** and **Pillar II (Rural Development Programme).**

The automated solutions for digital governance offered by the company simplify the declaration process for farmers and help payment organisations reduce their administrative costs.

Key features of the system

--- Graphic user interface.

--- Use of aerial photographs and satellite images.

--- Easy integration with current systems.

Case Study

Since 2006, **NEUROPUBLIC** has been the main supplier of the Payment and Control Agency for Guidance and Guarantee Community Aid (OPEKEPE), having undertaken to develop Information Systems to support its work.

One of the most important Information Systems it has developed is the Single Aid Application, which relates to the annual submission of an area aid application by **approximately 850,000 farmers.** Farmers can submit their aid and payment applications electronically, and record the geographical position of the declared plots through the digital platform of the Single Aid Application at one of the **certified Declaration Service Centres (KYD)** or by using their own computer. The integrated control mechanisms of the IT system ensure the accuracy and reliability of the relevant data. In this way, **less time is required** for the submission and debugging of the application, **while the payment process is expedited** for farmers.

It is worth noting that, thanks to the certified assurance of the high reliability of the data entered into the system through the efficient use of digital solutions and electronic tools, **fewer sanctions are imposed** on farmers, which means they are able to receive the **maximum aid possible.**

DIGITAL SERVICES FOR THE AGRICULTURAL SECTOR
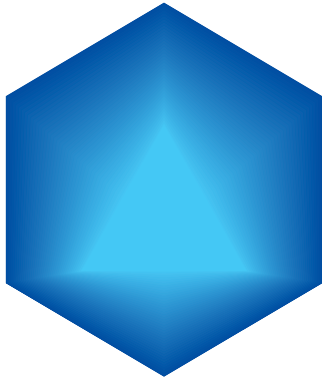
NEUROPUBLIC is in a position to offer the most integrated, pioneering proposals to the agri-food sector, since it has the required expertise, technological background and many years of experience operating in this sector.

The services developed by **NEUROPUBLIC** for the agri-food sector function as "smart" tools and create the digital work environment that is required for the provision of premium, reliable consultancy services in an easy, quick and simple way.

Some of the unique features of these digital services include the following:

--- They are available as Cloud Services,

--- They are accessed and supported online,

--- Their Cloud technology ensures the safety and 99.99% availability and integrity of their data for users,

--- They are based on state-of-the-art technologies,

--- They are available for a low subscription fee.

Access to the applications is through the technology platform of **GAIA EPICHEIREIN** (www.c-gaia.gr), which provides its services through a network of approximately 120 associated Rural Service Centres (RSC/KEA) that cover the whole of Greece. Users of KEA services can receive information and training on how to use the applications, as well as support in order to make use of the said services on their own computer.

Moreover, the digital services of **GAIA EPICHEIREIN** also include the **gaiasense** smart farming system, used to record cultivation work and other processes, and to receive advice related to agricultural production issues.

Case Study

With the help of a specialized agronomist provided by **NEUROPUBLIC,** producers can use the **Integrated Agricultural Holding Management (GAIA iCM)** cloud app to record all work carried out at their holdings (from seeding/planting to harvest), in order to ensure their correct management and monitoring.

Through the app's user-friendly environment, producers can record all cultivation work that takes place in their fields, the on-site checks, and all annual inputs/outputs; several of these operations are recorded automatically. In this way, farmers have direct access to the cultivation history of each field and can avoid unnecessary spraying, fertilization and irrigation, thus reducing their production costs and improving their final product with regard to both quality and quantity.

In addition, farmers can print reports related to all the above information, the profile of the holding, their plan of operations, the instructions they may be following through a consultant agronomist etc.

By having a full and detailed picture of their holdings at any time, producers can reduce their working time, since they are able to better plan the work required. Moreover, they are able to come to conclusions regarding the organization and exploitation of their holding and compare current results with those of past years, thus improving the way they manage the available resources and their production.

Map of Rural Service Centres for Farmers by GAIA EPICHEIREIN

COMPUTERIZATION – ERP

NEUROPUBLIC plays a major role in the upgrading, digital transformation and development of general government organizations, by providing single, integrated computerization solutions, which enable them to operate efficiently within a new digital environment.

The company has developed and supported specialized, web-based, Integrated Information Systems for important Public Sector organizations for many years. Its systems combine cutting-edge technology and function within a safe operating environment, providing clients with extensive scalability and interconnection capabilities with a large number of electronic services.

Several local authorities are using the **Integrated Information System ERP-OTA by NEUROPUBLIC,** which consists of the following subsystems:

--- Accounting and Financial Management

--- Supply Management

--- Warehouse Management

--- Human Resource Management

--- Income Management

--- Project Management

--- E-Protocol

It comprises an Integrated Information Enterprise Resource Planning (ERP) System that is used to run all financial processes, as well as individual financial management operations. The ERP-OTA is highly adaptable to the financial management structure of any local government authority.

In addition, the **Integrated Financial Management Information Systems by NEUROPUBLIC** are used by various agencies, such as Public and Private Legal Entities. The above IIS operates in a web environment and fully meets the accounting management requirements of Public and Private Legal Entities.

It should be noted that both the ERP-OTA and the Integrated Financial Management Information Systems for Public and Private Legal Entities include the necessary interconnection and interoperability interfaces with third party systems from the Public Sector. Furthermore, ERP-OTA is also able to connect to decentralized services that are in charge of financial management issues on a local authority level (e.g. municipal gyms, nursery schools etc.), as well as third party public bodies supervised by local authorities.

Case Study

Within the framework of the modernization and digitization of its processes, the Municipality of Thessaloniki has chosen the advanced systems of **NEUROPUBLIC** for the electronic control of a large number of documents and claims submitted by citizens and companies, for their interoperability with applications used by other bodies, and for the rapid-flexible access they provide to any information on the system.

The initial project concerns the implementation of the **"Upgrade – Extension of the Integrated Financial Service Information System".** It involves an integrated, avant-garde system, which will form the main pillar related to the monitoring, control and rational depiction of the Municipality's financial figures. Through the implementation of the system, the modernization of the infrastructure and business processes will be achieved, and economies of scale will be created through the use of free open source software and the unification of independent applications. Its key advantages are its interoperability with applications used by other Public and non-Public Organizations, the simplification of administrative procedures, a reduction in bureaucracy, and the rapid processing and preparation of infrastructure at the Municipality of Thessaloniki for the provision of advanced electronic services to Citizens – Companies.

Furthermore, through the **"Integrated Citizen Service Information System", NEUROPUBLIC** is developing a smart interactive platform through which Citizens or Companies can interact with the Municipality's services; the platform will provide Citizens with personalized information in a homogeneous, transparent and reliable manner. The above system aims to fully replace the relevant non-electronic services and promote the exclusive use of the platform, so that Citizens' claims are processed quickly and easily with one "stop" or one "click".

Both Citizens and Companies will be able to submit their claims easily and remotely, and attach the documents required by all Directorates of the Municipality; they will also be able to electronically monitor their claims, without having to visit the Municipal services in person. Moreover, it will be possible for them to receive information electronically regarding any pending financial issues (such as payments of council taxes, fines, etc.) and settle such payments online.

Finally, through the use of the Smart Entrepreneurship system, quality information will be provided, which is an important factor when making business decisions. The information produced will be translated into knowledge to be used by the Municipality's administrative staff, so that suitable actions are designed that will lead to the specification and achievement of business goals in an effective and efficient manner.

TECHNOLOGIES

One step ahead of developments, we use state-of-the-art technology to design and shape the new production model of Greece.

NDVI Vegetation Index

γυμνό έδαφος	growth	harvest	intermediate

NEUROPUBLIC does not simply follow developments, it is a leader in the field. Through innovative methods, it adopts and adapts **the latest technologies** to various levels and sectors, turning them into **accessible tools for growth.**

Within this framework, the company **strategically invests in research and technology,** aiming at **the development of innovative products and services.**

Data Science

NEUROPUBLIC develops and uses statistical analysis and machine learning models in order to develop "smart" applications for the agricultural sector. These models are fed with a large volume of satellite data from the **European Space Agency (ESA),** along with other types of data, with the aim to provide smart observations and solutions to the end users, for example farmers and Public Organizations.

The company has developed an information system based on specific models, which maps the different types of crops grown in Greece and produces statistical data regarding their geographical distribution, by making use of satellite remote sensing technologies.

The system is addressed to organizations in charge of payments and controls under the Common Agricultural Policy (CAP) of the European Union, and enables them to monitor the agricultural land under their responsibility and verify the accuracy of the producers' data.
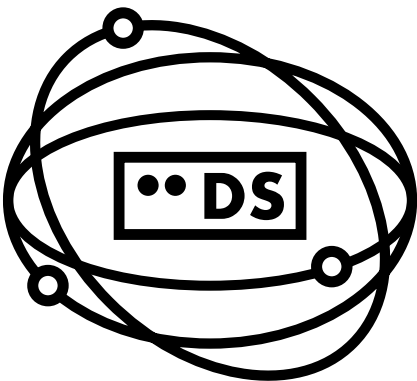
Earth Observation

In recent years, the Earth Observation sector has witnessed significant progress due to the new satellites and micro-satellites that provide a large number of high resolution data, which facilitate the development of methods linked to the systematic mapping of the status of changes to the earth's surface. Moreover, combined with **Data Science** and **Big Data,** this sector is constantly acquiring a much broader field of implementation.

The main applications of Earth Observation involve the sectors of farming, the environment, natural resources, the sea, energy, infrastructure projects and transport. More specifically, in the case of farming, satellite remote sensing in combination with the tools of Data Science are used to **predict the potential performance of crops and specify the yield quantity** to be harvested under specific conditions, through precision agriculture systems, and also to **identify the types of crops and proceed with their mapping.**
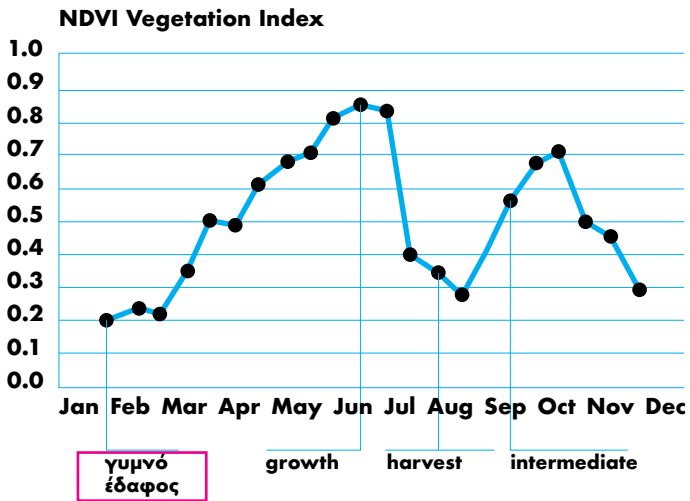
NEUROPUBLIC is a recognized leader in the development of Earth Observation technology applications. It creates coherent solutions for the field of geo-informatics by exploiting satellite data and Artificial Intelligence technologies. The specialist scientists and analysts of NEUROPUBLIC use cutting-edge tools to continuously address various technological challenges, by analysing and managing large volumes of geo-data in order to provide decision making and support services.
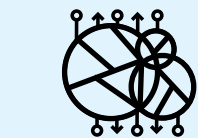
Earth Insight

IMAGE PROCESSING
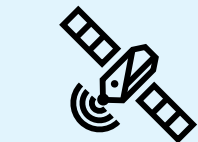
Imaging Satellites
Radar Satellites

→ Direct imagery
→ Retraction
→ Geometrical alignment
→ Radiometric calibration
→ Vegetation indices
→ Multidisciplinary maps
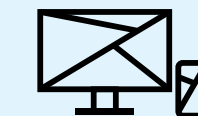
Data processing in real time

DATA ANALYSIS

Big Data
Artificial Intelligence

→ High computational power
→ Automatic classification algorithms
→ Signal processing
→ Geospatial data analysis and processingli

High-accuracy crop identification

PROVISION PLATFORM

Geospatial data
Satellite images

→ Interactive environment
→ Viewing of satellite images
→ Static analysis
→ Comparative analysis
→ Visualization of results

**Effortless presentation of satellite imagery**

Internet of Things (IoT)

NEUROPUBLIC incorporates **Internet of Things (IoT)** technologies in the telemetric stations it designs and develops at its Research and Development Laboratory.

The stations use **embedded technology** and **IP protocol**, which enable the online real-time transmission of the data they collect from the field, regarding atmospheric, soil and biological parameters.

More specifically, with regard to the soil sensors, **NEUROPUBLIC** has developed a strategic collaboration with **Sentek Technologies,** one of the leading sensor manufacturers on a global scale.

Moreover, the network of telemetric stations, which consists of IoT devices, is installed all over Greece and is expanding at a rapid pace.
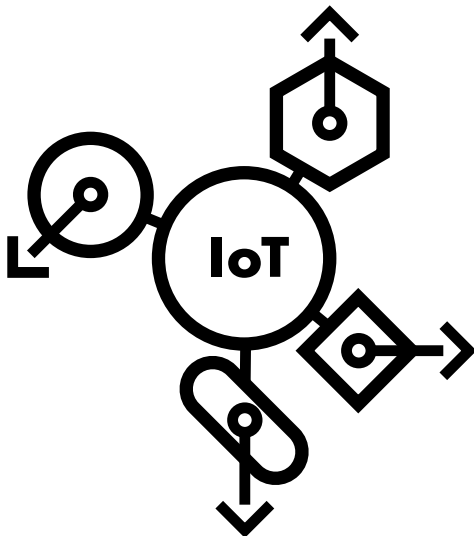
NeuroCode Code Generator

The IT engineers of **NEUROPUBLIC,** based on their experience from relevant projects run by the **European Space Agency (ESA),** have developed and are constantly building on the **NeuroCode** Code Generator. It involves a pioneering technology on a global level, which enables the automatic linking of codes generated using different software modeling tools.

Through the **NeuroCode,** the new codes are generated automatically, thus avoiding the arduous and error-prone manual programming methodology. The applications produced by the Code Generator are web-based crud applications and/or mobile apps for **Android and iOS.**

The **NeuroCode** Code Generator has already generated millions of lines of code for the company's cloud applications, thus reducing any potential errors to a minimum in its systems. It also provides the products and services of **NEUROPUBLIC** with the stability and reliability that only space technology software has enjoyed to date.
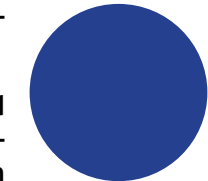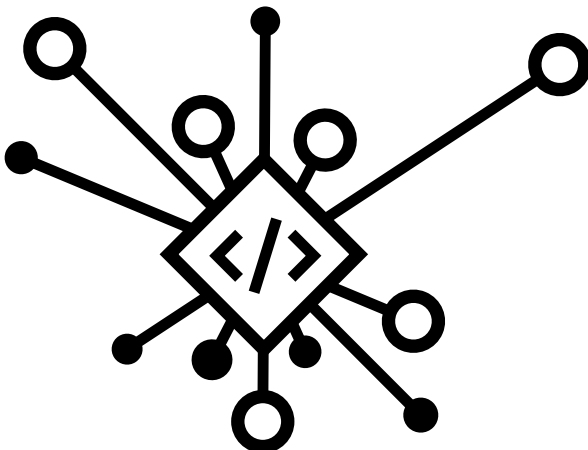
Telemetric agrometeorological station

The network of telemetric stations, which consists of IoT devices, is installed all over Greece and is expanding at a rapid pace, based on a specific investment plan, with the aim to cover over 85% of the arable land.

INFRASTRUCTURE

The presence of **NEUROPUBLIC** in the sector of Cloud Computing, and more specifically in the field of cloud services for the agricultural sector, offers a unique advantage to its clients.

NEUROPUBLIC has created a premium, privately owned cloud infrastructure, which enables its clients to have access to all its web-based information systems, and to the services of the digital platform **GAIA EPICHEIREIN.**

With regard to the smart farming sector, the company's infrastructure involves the development and network of specialized agrometeorological stations, which are designed and manufactured by the Research and Development department of the company.
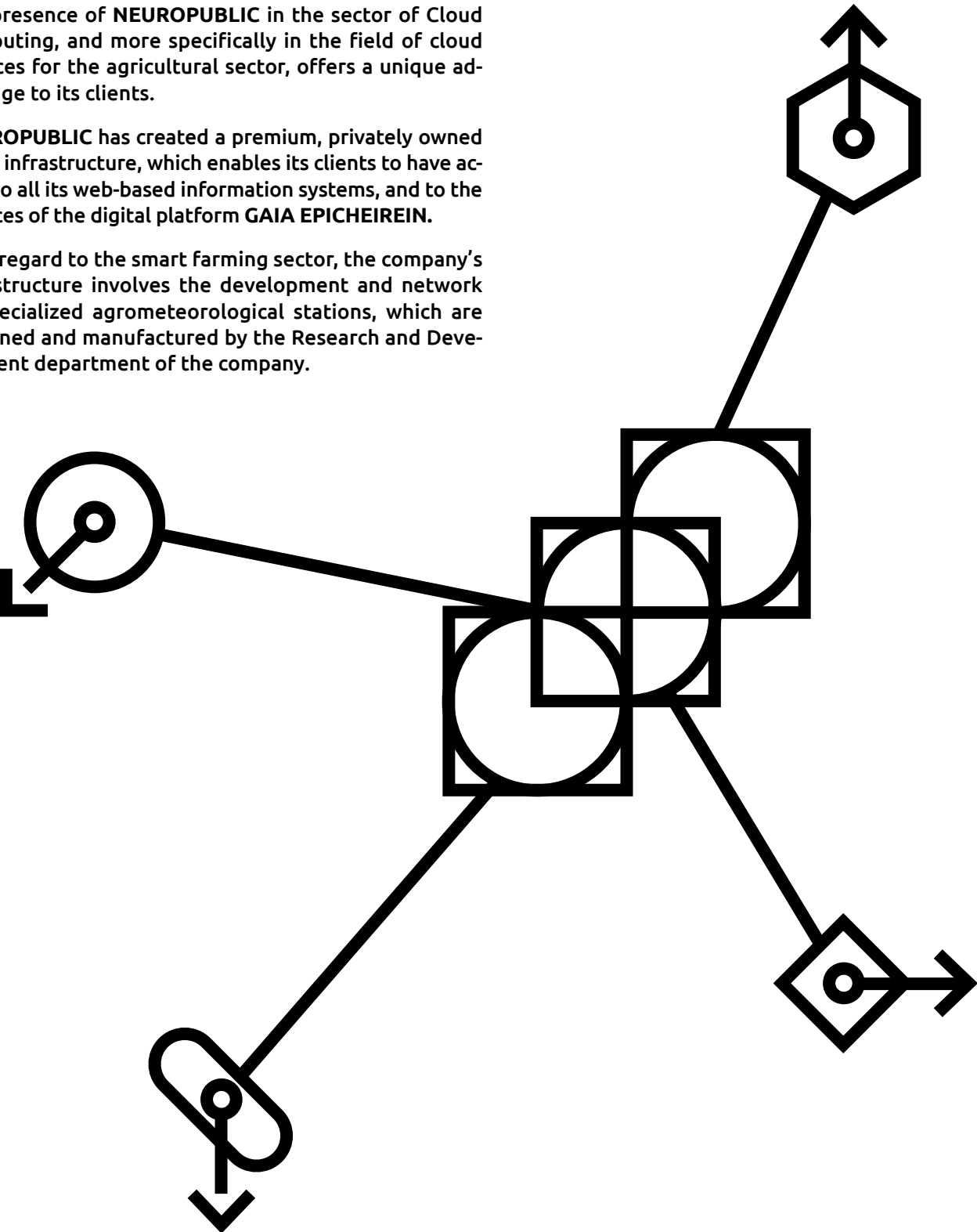
Development of telemetric stations

The research and integrated development of technologies and infrastructure in the smart farming sector are a strategic choice of the company.

NEUROPUBLIC has a state-of-the-art laboratory operating in the framework of its Embedded / IoT R&D department.

Through the combination of highly-qualified personnel and the expertise of many years in the development of cutting-edge electronics and equipment, the company's laboratory functions as a flexible and powerful nursery for IoT solutions in the sector of Agriculture.

NEUROPUBLIC designs and develops all the IoT infrastructure required for the **gaiasense** system: all systems that comprise the **gaiatron telemetric agrometeorological stations** (with regard to hardware, firmware and software), the real-time data acquisition systems/platforms, the retransmission, collection and verified accuracy and validity of all indices, as well as their interconnection and communication (IP, m2m protocols).

IoT Infrastructure

NEUROPUBLIC has created the first and only large-scale **Internet of Things** infrastructure in Greece, with thousands of wireless sensors, of its design and manufacture, installed on agricultural land as part of the **gaiasense** smart farming system.

The infrastructure consists of telemetric stations, which are installed in agricultural plots all over Greece, and in other countries of Europe. Each of these stations is equipped with several dozen sensors that measure environmental (atmospheric and soil) parameters at multiple points.

A large volume of automatic measurements is collected at regular intervals at the special IoT platform of the company's cloud infrastructure. This data is then combined with satellite data and other types of information, which are then fed into decision-making support systems that provide advice and instructions to the agronomists and farmers regarding their daily cultivation work.
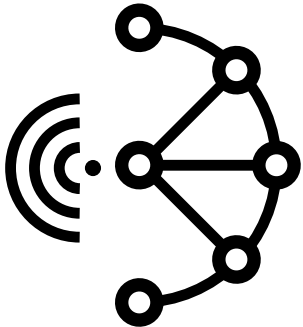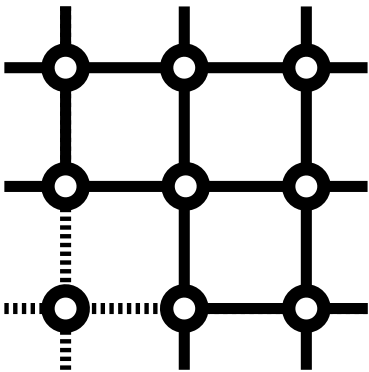
Cloud Data Center

The cloud infrastructure of **NEUROPUBLIC** is housed at a specially designed Data Center, manufactured at the company's new premises, at which all relevant standards and rules regarding its sound operation and safety have been adhered to, in order to enable the provision of premium cloud services. The privately owned cloud infrastructure allows the company's clients to have access to all its information systems and to the cloud-based services of the **GAIA EPICHEIREIN** digital platform.

The Data Center is located at safe premises with a controlled access and is supported by safety mechanisms and systems, both on an operational and an IT level, that ensure its uninterrupted operation and a very high level of resource availability.
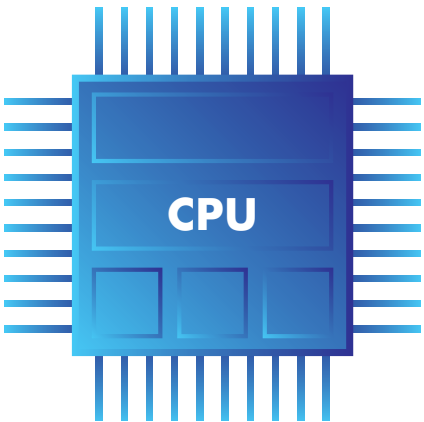
The telecommunication requirements of the Data Center are covered by two providers, through the use of an addressing range owned by the company, which ensures independence from the providers and 100% availability of its online applications.

> 10 TB
Memory

RAM

> 1250
CPU Cores

CPU
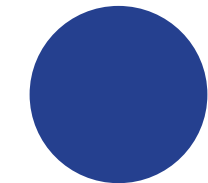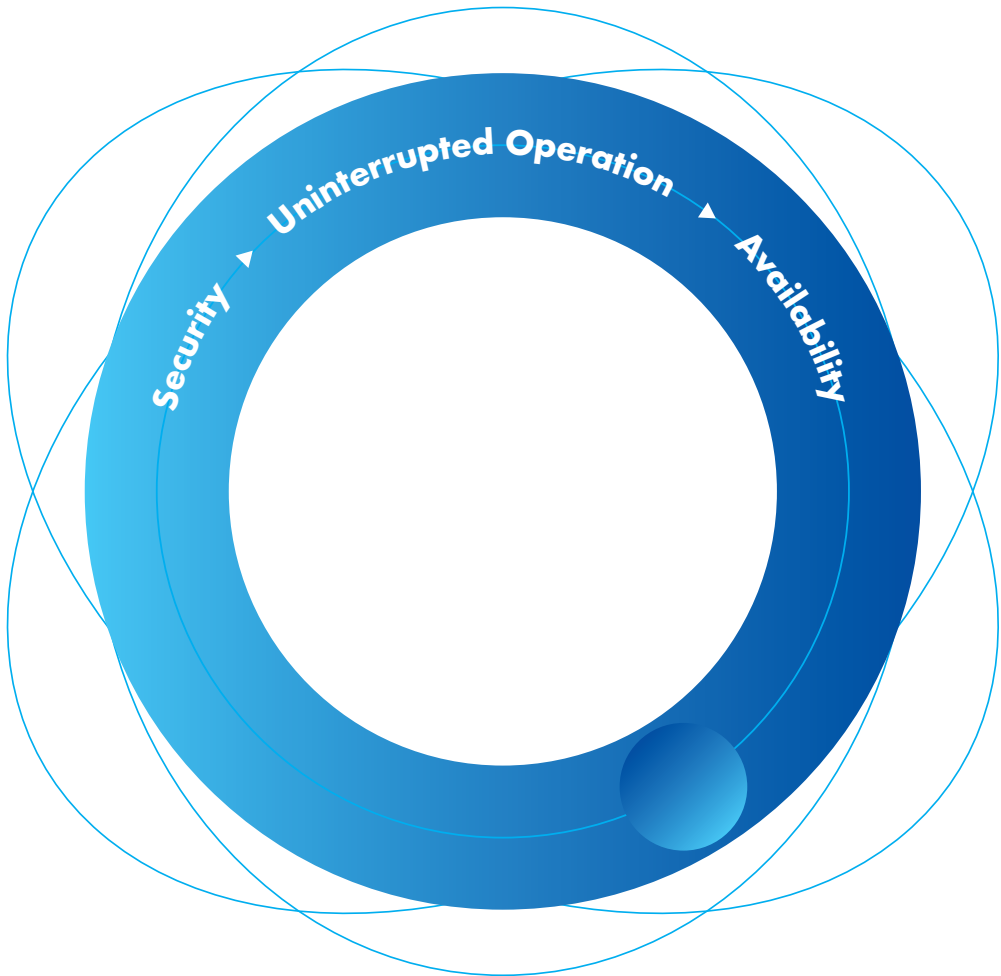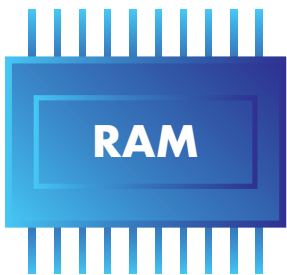
500 TB
Memory drives

SAS   NL-SAS

SSD

The company's cloud services enable its clients – the users of its services to enjoy:

--- The direct upgrading of the Cloud Servers' resources according to the requirements,

--- A daily backup on a separate storage and/or tape drive for security purposes,

--- Different levels of storage depending on the user's needs,

--- Uninterrupted operation (business continuity) and security,

--- 24-hour monitoring by a team of technical staff that ensure the smooth operation of their systems.

Security ▶ Uninterrupted Operation ▶ Availability
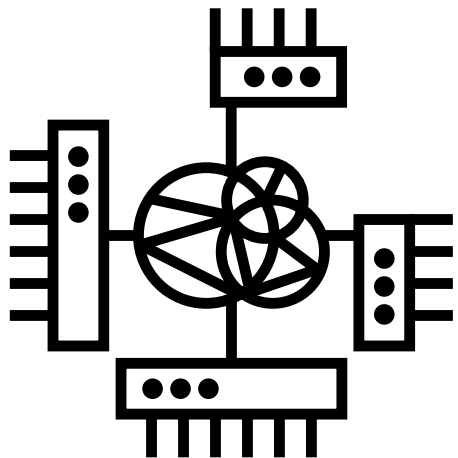
OUR PEOPLE

We continuously invest in professionals with excellent qualifications, who can support our vision and take our services to the next level.
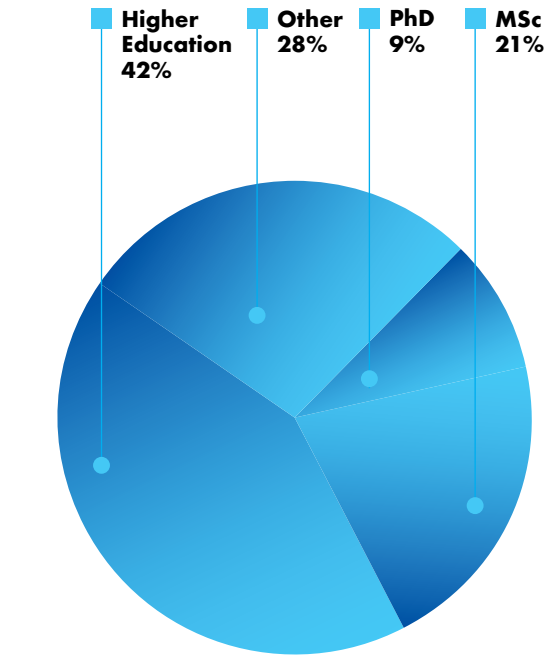
NEUROPUBLIC invests in personnel with outstanding qualifications and know-how, offering them continuous training in new technologies and practices, and ensuring the best possible conditions at the workplace. The company currently employs more than 107 professionals, a very significant percentage of whom (over 72%) are highly specialized (**Data Analysis, IoT, IT Engineers**), higher- education graduates, not only from the IT sector but also from other scientific fields, such as **Earth Engineers, Surveying Engineers, Agronomists, Meteorologists, Electrical and Mechanical Engineers, Doctoral researchers etc.**

The company's personnel consists of tertiary education graduates (40%), postgraduate degree holders (35%), doctoral degree holders (7%) and graduates of other schools (18%).
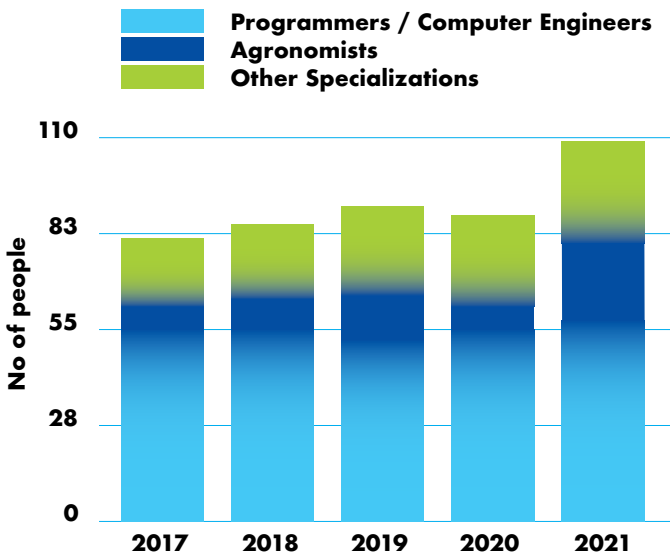
NEUROPUBLIC strongly believes that its personnel is the company's driving engine for the implementation and achievement of its corporate objectives. It views the company's workforce as a major contributor to its success, the operation and quality of the work produced, the fulfilment of its goals and its future prospects.

The company is strongly committed to attracting and selecting personnel with a high level of training and expertise, and offering the right working conditions and lifelong learning opportunities to all employees depending on the requirements of their position and sector. **NEUROPUBLIC** cooperates with all Higher Education Institutes in Greece and provides internship opportunities to their students.

The experienced and specialized personnel of the company is employed in the company's Divisions and Departments, which are suitably organized with the structures and resources they require for the seamless implementation of the company's activities, their consistently improved performance and the efficiency that is essential (with regard to time and quality) for the implementation of complex and demanding projects.

Higher Education 42% | Other 28% | PhD 9% | MSc 21%

Educational level of personnel

Programmers / Computer Engineers
Agronomists
Other Specializations

NEUROPUBLIC personnel distribution according to level of education

95 95 104 104 107
86 85 86 89
52 59 62 71
38
15 14 15 20 27

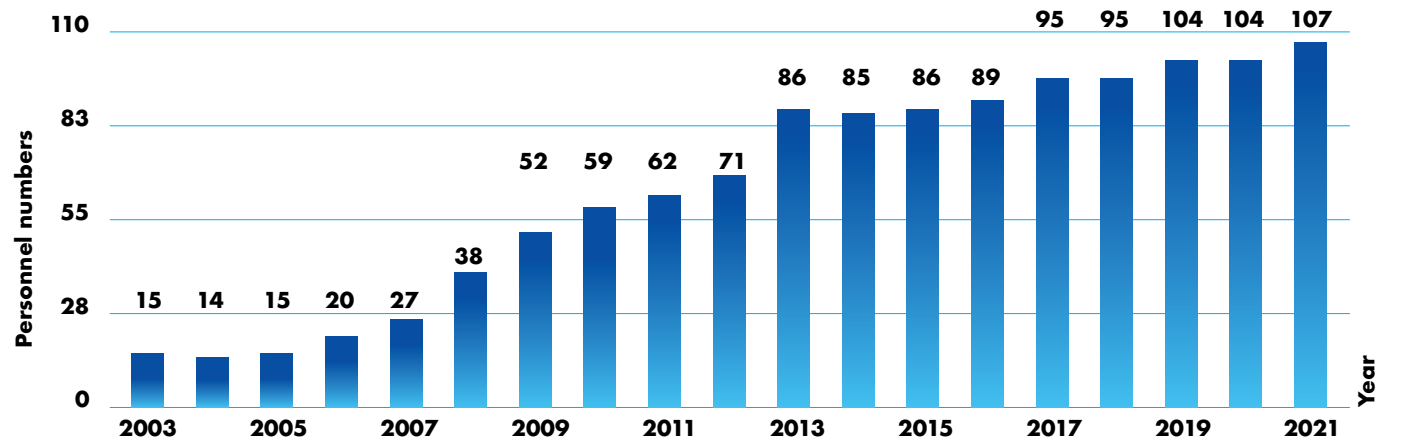2003 2005 2007 2009 2011 2013 2015 2017 2019 2021

Table showing the evolution of the company's personnel

FINANCIAL FIGURES

CERTIFICATIONS

Thanks to its strong economic foundations and major strategic partnerships, NEUROPUBLIC looks to the future with confidence.

With its strong capital base, ongoing profitability, investment planning and rational management, **NEUROPUBLIC** is one of the most reliable and robust companies in Greece and the Balkans.

The company's **total investments during the last decade exceed €9 m.** and include the construction of a modern privately owned building covering 1,700 sq.m. in Piraeus with its own Data Center, through which the company offers cloud services; it also boasts the largest private IoT infrastructure in Greece. At the same time, a new privately owned 3,000 sq.m. facility will be completed in Piraeus in 2021, that will be used for the production of Telemetric Stations and for the relocation of the whole group.

In addition, the initial phase of the strategic partnership between **NEUROPUBLIC** and Piraeus Bank is complete, with the latter represented in the company's share capital. This collaboration is the culmination of the two partners' common vision, which involves the sustainable development of the agri-food sector, and addressing the challenges posed by climate change.

The agreement involving the financing of **NEUROPUBLIC's** investment plan by Piraeus Bank specifically aims at promoting sustainable solutions, while focusing on the adoption of innovation and new technologies for the transformation of the agri-food sector in order to improve its competitiveness, while protecting the environment and society.
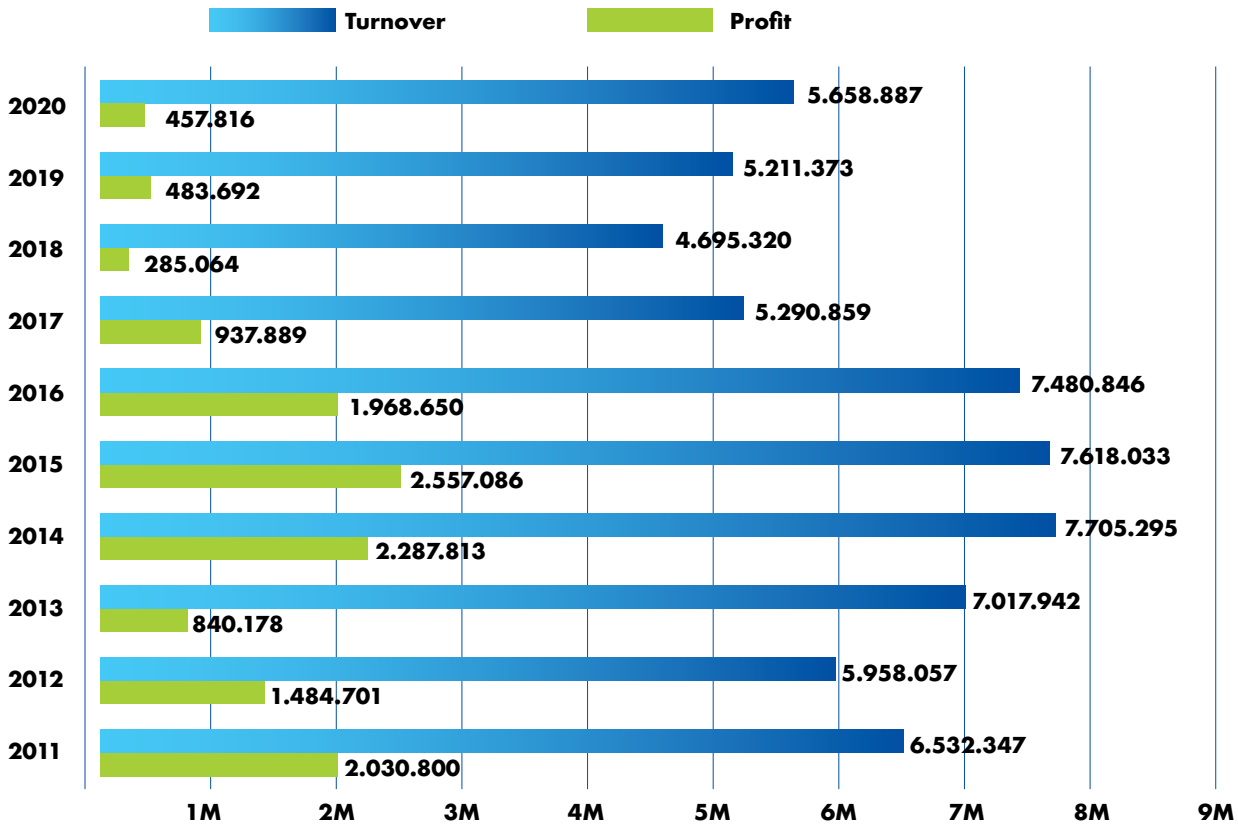
The systematic management of information security is a primary concern of the company and is certified by international organizations. In fact, **NEUROPUBLIC** is the first Greek IT company to provide application hosting services within a single Information Security Management System, that is certified to cover the requirements of the relevant international ISO and BS standards.

More specifically, the company has designed, established and implements a single **Quality & Information Security Management System (QISMS),** certified by **TÜV AUSTRIA HELLAS** to cover the requirements of the following international standards: **EN ISO 9001:2015 (Quality Management Systems)** and **ISO/IEC 27001:2013 (Information Security Management Systems).**

The QISMS involves all Divisions and Departments of **NEUROPUBLIC** at its headquarters in Piraeus, its offices in Thessaloniki, and at another 14 points in Greece, while its scope covers:

--- Provision of Application Hosting Services,

--- Analysis, Design, Development, Parameterization, Installation, Maintenance, Technical Support and Training of IT System users,

--- Analysis, Design, Development, Parameterization, Installation, Maintenance, Technical Support and Training of Geographic Information System users.

Within the framework of the design and implementation of the Single Quality & Information Security Management System, the company is cooperating with the **Information and Communication Systems Security Lab at the University of the Aegean** for the elaboration of the required risk analysis and risk management studies. This certification validates **NEUROPUBLIC's** determination to provide integrated IT solutions and services that offer a high level of quality and information security.

Year	Turnover	Profit
2020	5.658.887	457.816
2019	5.211.373	483.692
2018	4.695.320	285.064
2017	5.290.859	937.889
2016	7.480.846	1.968.650
2015	7.618.033	2.557.086
2014	7.705.295	2.287.813
2013	7.017.942	840.178
2012	5.958.057	1.484.701
2011	6.532.347	2.030.800

EXTROVERSION

We play an active role in European processes related to the digital transformation of the economy by taking part in European networks and projects, with the aim to enhance our products and services and exchange know-how, so as to resolve problems on an international level.

Through its participation in international and European networks and projects, **NEUROPUBLIC** has been closely monitoring developments and is continuously in contact with key organizations, thus contributing to the design of future policies, while simultaneously establishing important collaborations.

NEUROPUBLIC is an active member of networks operating on a European and global level, which aim to work towards common goals by developing synergies. Its participation in these networks allows the company to constantly enhance its services and products, while ensuring its international promotion and networking.

Indicatively, **NEUROPUBLIC** is a member of the following networks:

European Association of Remote Sensing Companies (EARSC)

A European organization that aims to promote remote sensing technologies and, more specifically, those companies in Europe that provide services and products based on remote sensing. **NEUROPUBLIC** is the first Greek organization to become a member of EARSC.

Big Data Value Association (BDVA) BDVA is a private, non-profit union of organizations, such as large-scale industries, SMEs and research institutions, that is industry-led. Its goal is to promote Big Data in relation to research, development and innovation on a European level. The members of BDVA support the development and the establishment of collaborations between European public and private bodies working with Big Data and the EU.

Alliance for Internet of Things Innovation (AIOTI):

AIOTI is an EU initiative and comprises the largest European network in the Internet of Things sector, which brings together the most important private and public sector organizations. The purpose of AIOTI is to contribute to the creation of a dynamic IoT ecosystem and, by extension, to facilitate the adoption of solutions based on IoT technologies. **NEUROPUBLIC** is an active member of AIOTI's Working Group 6, which focuses on smart farming and food safety.

Global Open Data for Agriculture & Nutrition (GODAN)

The global network GODAN encourages the free availability of agricultural and nutritional data, with the aim to make such information more easily accessible and usable, so that it can contribute to addressing challenges related to food safety on a global level.

Hellenic Emerging Technologies Industry Association (HETiA)

The Hellenic Emerging Technologies Industry Association brings innovative companies into contact with the academia, with the aim to disseminate digital technologies and entrepreneurship in the field of emerging technologies.

Hellenic Association of Space Industry (Hellenic ASI)

Hellenic ASI is the result of a coordinate effort made by the majority of the Greek industry that is involved in space technology and applications. It aims to further develop the Space Technology Industry and high technology in Greece in general, through the interaction and coordination of the participating bodies, as well as the promotion and advancement of the Hellenic Association of Space Industry in Greece and abroad.

In addition, **NEUROPUBLIC** actively participates in international conferences, seminars, exhibitions and other related events, which aim to promote its products and services in new markets.

FUTURE GOALS

The economic, environmental and social sustainability of agriculture and citizens are at the core of our activities and form the compass for the development of our products and services.

The successful course followed by **NEUROPUBLIC,** the expertise and tremendous specialization it has acquired since its establishment and to the present, are its main tools for the development of avant-garde applications and solutions for Local Government and the public sector in general, as well as demanding financial sectors, such as the agricultural sector, that is governed by a strict and detailed regulatory framework and is linked to cutting-edge technologies.

NEUROPUBLIC never stops evolving

We keep evolving and enhancing our solution portfolio with information systems now based on cloud technologies, that are fully interoperable with any source of information, with the aim to provide faster services to citizens and inform them in real time, also through mobile apps.

By implementing the largest project undertaken by local government currently at the Municipality of Thessaloniki, we aspire to become the forerunner of all technological developments in Local Government and in the public sector as a whole, by incorporating new technologies in the everyday life of citizens and employees, providing access to the municipality's electronic services online, giving them the possibility to receive direct information regarding their rights and obligations on their mobile phone, and to settle them by simply "clicking" a button.

Our objective, therefore, is to be a leader in the new digital era and use our technological solutions to build a relationship of trust between citizens and organizations, by providing a safe and friendly environment in which they can attend to their obligations.

The activities undertaken to date by **NEUROPUBLIC** in the agricultural sector have enabled the company to enter an ever-increasing part of the Greek and international market, related to the development of new smart farming products and services.

The company's next steps include a state-of-the-art production unit. **NEUROPUBLIC** is already investing in the creation of a privately owned verticalized production unit for cutting-edge electronics. The fully automated unit, which will be located in a refurbished privately owned industrial building covering 3,000 sq.m. in Piraeus, is expected to begin its production process in 2022.
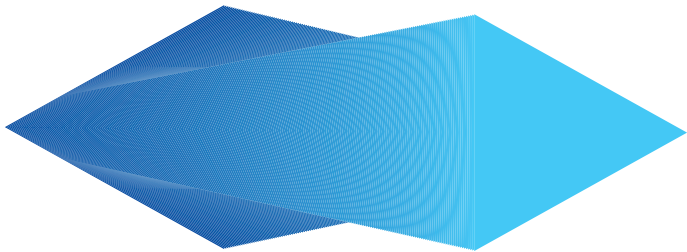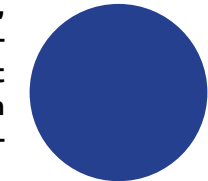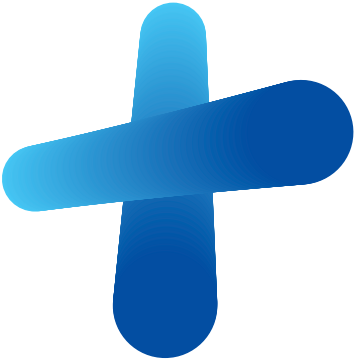
This investment will allow the company to study, develop and produce technological products for the agri-food and other sectors, while maintaining full control of the quality and cost, and directly offering highly reliable and competitively priced solutions made in Greece.
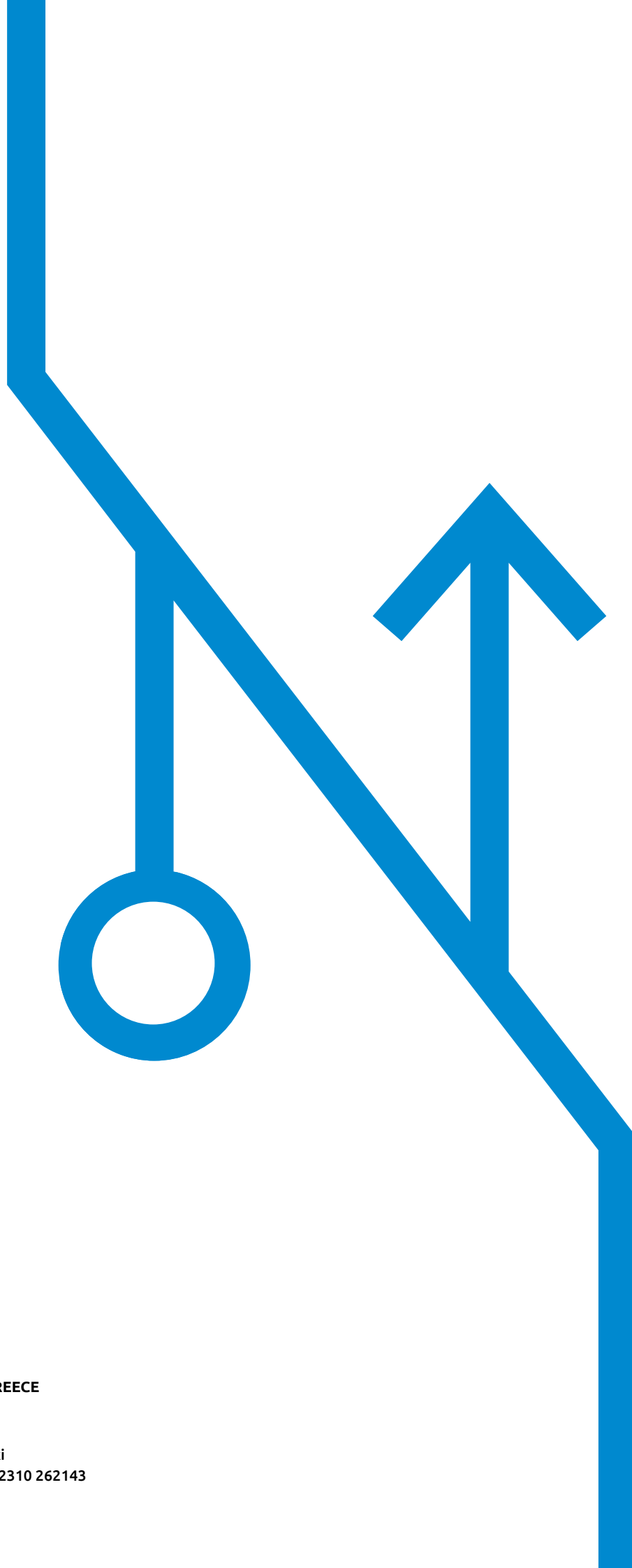
In addition, the strategic collaboration between **NEUROPUBLIC** and Piraeus Bank, and the agreement for the financing of the company's investment plans, points at the new prospects created for Greece's production model, which aims to adopt innovation and new technologies in order to proceed with the transformation of the agri-food sector.

Within this framework, **NEUROPUBLIC** will continue to design and provide services and products that successfully contribute to the economic, environmental and social sustainability of agriculture, and to the sufficiency, safety, quality and traceability of food, by primarily focusing on reducing the environmental impact of the production process, dealing with the challenges of the climate change and promoting the wellbeing of producers and consumers.

Over the next few years, **NEUROPUBLIC** aspires for the smart farming services the company is developing to reach all producers, producer organizations and agricultural cooperatives in Greece, thus making the digital and green transformation of Greek agriculture a reality as a whole, and to continue expanding the use of the gaiasense smart farming system abroad.

Moreover, the company aims to play a vital role in the essential digital transformation of the agri-food chain, and even appeal to citizens-consumers. The sufficiency, safety, quality and traceability of agricultural products and food form the greatest nutritional challenge of the next decade, which **NEUROPUBLIC,** thanks to its extensive experience in the digitization of the chain's basis, is already addressing with great success.