quid NEWS

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Quidgest

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Quidgest's teams have one main goal in mind: help our clients achieve excellent efficiency and business results by implementing truly impactful technology. Our clients are empowered by our pioneering artificial intelligence-driven software which enables them to pursue a Composable Enterprise approach and develop more with less resources.

If you are capable and enthusiastic about bridging the digital divide while also looking forward to expanding your knowledge and developing your career, we are looking for YOU!

Quidgest

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Innovation from within

Today's organizations have to create and deliver innovation alongside their other responsibilities. All companies and public entities need innovation, like oxygen in a race, to respond more quickly to the pace of business change and ever-accelerating market dynamics. And they also need innovation to cope with unexpected contextual changes, such as pandemics, the disruption of face-to-face work, or the threat to global peace.

There are many ways to innovate and many profiles that can do it, as Tom Kelley reminds us in his "The Ten Faces of Innovation": the anthropologist, the experimenter, the cross-pollinator, the barrier jumper, the cooperator, the director, the architect of experiences, the set designer, the storyteller, the caregiver. These profiles are found within an organization and can be mobilized for innovation. Identifying them is the first step to successful continuous innovation experiences.

Note that the impact of innovation from within is much more significant than outside innovation. The difference is visible in the time to results (quick wins) since it is unnecessary to explain the context, where the value of the innovation lies, or what customers and the market require most from internal innovators.

The difference is visible in the value added by the innovation, which internal innovators much more easily recognize and know how to promote. The difference is visible in the continuity of the innovation journey, which, not requiring budget availability or extraordinary contractual negotiations, lasts and shows sustainability. In a hundred-meter race, sprinters cannot replenish their oxygen. Speed races are anaerobic. The one-off acquisition of innovation is also anaerobic. Continued innovation from within is, by contrast, long-lasting and sustainable.

Besides the corporate culture, the most significant barrier to innovation from within is the low digital literacy of most employees in organizations. Indeed, in this age of digital technology revolution, all innovative proposals require or benefit from digital processes, automation, artificial intelligence. However, the overwhelming majority of professionals in large organizations assume themselves to be mere users of information technology and don't even feel capable of starting to build a digital solution. This reduced literacy is also, on a global scale, the biggest challenge to the success of the digital transformation.

In this area, Quidgest gives a decisive help that has become a competitive advantage for all our client organizations: the modeling and artificial intelligence of Genio. Genio dramatically impacts three variables: it expands the number of business technologists (professionals who come from the business, not from IT, who build solutions), multiplies the digital transformation initiatives, and reduces the time between the design and entry into the operation of applications. Genio is the technological arm of innovation, entrepreneurship, and sustained digital transformation from within.

CRISTINA MARINHAS
| *CEO at Quidgest*

WORK DEVELOPED IN MOZAMBIQUE DISTINGUISHED BY SOFID

SOFID, an organization for development financing whose mission is to contribute to the economic growth of emerging and developing countries, distinguished Quidgest with the honorable mention SME of the Pedro Cudell Award.

Awarded on November 11 during the conference "Financing in Africa - The Role of Development Finance Institutions", held at the Calouste Gulbenkian Foundation, the honorable mention was given due to work developed by Quidgest Software Plant in Maputo, Mozambique's capital.

Cristina Marinhas, Quidgest's CEO, says that "it was with great pleasure that Quidgest received an honorable mention in the Pedro Cudell Internationalization Prize. We have been operating for over a decade in the African continent through Quidgest Mozambique, which has already developed projects that greatly impact local communities. Honorable mentions like the one from SOFID, ensure us, once again, that our teams in Lisbon and Maputo are contributing to the Sustainable Development Goals and the development of African communities".

Among the various projects that Quidgest has developed in Mozambique, we highlight the system for real-time monitoring of the Rapariga Biz program, which promotes the sexual and reproductive health and rights of girls in Mozambique. ■

QUIDGEST CONTRACTS CHATBOT AND GAMIFICATION PROJECTS

In 2021, Quidgest awarded two relevant projects to national companies that will improve the website users' experience and the teams' performance: a new chatbot from the Portuguese startup Visor.ai and a gamification project from FractalMind.

The chatbot will improve the user experience of Quidgest's website, which will have an assistant available 24/7 to provide more information about the multinational technology company's products, events, and services.

In addition, the artificial assistant will be available in several languages, including Portuguese, English, and Spanish.

The project awarded to FractalMind intends to improve the performance of several teams through small games with a visual interface where Quidgest's employees will advance by reaching milestones. In the long term, it is expected that the gamification of work will contribute to the self-development and engagement of Quidgest's employees and, consequently, to its performance in the market. ■

QUIDGEST EXPANDS TO BENELUX AND NORDIC COUNTRIES THROUGH PARTNERSHIP WITH η!TRANSFORMERS

η!Transformers, a newly formed Dutch business technology venture, established a partnership with Quidgest, a multinational company with 33 years of experience in the Information Technologies industry and the owner of the extreme low-code platform GENIO.

The partnership aims to explore the Nordic and Benelux markets and revolutionize various domains, such as Banking, Retail, Healthcare, and Public Sector, delivering customized future-ready software – composable enterprise solutions that are obsolescence-proof and able to change swiftly depending on the market's needs.

Through GENIO, the η!Transformers team will develop or adapt software way faster than using traditional software development tooling, applicable for both bespoke or off the shelf software, to add new functionalities to meet their client's needs or staying up to date on new regulations. Also, η!Transformers will build market specific SaaS solutions with GENIO. As GENIO is a data driven lowcode platform, the creation of backend applications is much faster compared to other process driven lowcode platforms, which is even scientifically proven. Aernoudt Bottemanne, cofounder of η!Transformers, "We are very pleased to be the official Quidgest representation in the Benelux and Nordics. The value we can create together for our clients is huge as the time and money saved to build tailormade (and large systems) that function exactly to what the customer needs is enormous. Not just to build new software, also to help migrate (partially or complete) away from SAP, with their customers having to migrate to Hana the coming years, replacing RPG or enterprise applications!"

Carlos Costa, Quidgest's Partnership and Marketing Manager, indicates that "this region of Europe is a desirable target for the development of our business. This is an excellent Era, and η!Transformers have all the skills, experience, and motivation to transform this market successfully jointly.". ■

2021
Q-DAY
CONFERENCE

SDG2030
SUSTAINABLE DEVELOPMENT GOALS

After canceling the 2020 edition due to the pandemic, Q-Day returned to Culturgest on 14 September. The 12th edition of the event organized by the multinational technology company Quidgest focused on the Sustainable Development Goals and how technology can help overcome the challenges that prevent humanity from achieving the goals set by the United Nations by 2030.

The day was divided into the five P's that make up the UN agenda: Prosperity, Planet, People, Peace, and Partnerships - each one with its panel of experts.

The day began with a brief welcome address by João Paulo Carvalho, co-founder and senior partner of Quidgest. Then, before the first panel, André de Aragão Azevedo, Secretary of State for the Digital Transition, took the stage and pointed out the digital empowerment of the national population - of all age groups - and digital tools as essential vehicles for the promotion of knowledge and inclusion.

PANEL 1. PROSPERITY

What can we do to ensure that all human beings enjoy a prosperous and fulfilling life and that technological, social, and economic progress is in harmony with Nature?
These were the main topics of the first panel, which focused on how technology can support the achievement of the SDGs directly related to Prosperity.

The first panel - "Prosperity" - counted with the participation of Maria João Carioca, executive board member of Caixa Geral de Depósitos, Ricardo Castanheira, digital advisor in the European Union, as well as João Paulo Carvalho. The unavoidable central theme was artificial intelligence and its benefits and harms for sustainable development and prosperity. Maria João Carioca pointed out the fundamental contribution of artificial intelligence to 79% of the sustainable development goals but also left the note that this technology negatively affects another 25% - an issue that was followed by Ricardo Castanheira, who painted a dark picture about the impact of artificial intelligence on human prosperity, making clear the importance of regulating high-risk applications.
On the other hand, João Paulo Carvalho pointed out that our tremendously high expectations regarding artificial intelligence may lead to disinvestment in research and development and disinterest of the population. Therefore, raising caution about the importance of working the "Explainable AI": artificial intelligence gives us the results and explains the path taken to get to a particular answer.

> *Artificial Intelligence contributes to 79% of the Sustainable Development Goals.*
>
> **Maria João Carioca** | Executive Board Member at CGD

> *Although Artificial Intelligence is an enabler and catalyst for 134 goals, has a negative effect on 59.*
>
> **Ricardo Castanheira** | Digital Counselor for the EU

> *At Quidgest we want to create a team that is eager to achieve the SDG.*
>
> **João Paulo Carvalho** | Senior Partner at Quidgest

PANEL 2. PLANET

What can we do to protect the Planet from the increasing degradation of recent decades? It is imperative that we make sustainable consumption and production and the sustainable management of natural resources common practices and act quickly on climate change. These were the ideas that dominated the second panel.

In the subsequent panel, Francisco Ferreira, president of ZERO Association, João Wengorovius Meneses, secretary-general of BCSD Portugal, Luís Neves, president of GeSI, and Natan Jacquemin, founder of NÃM Mushrooms, debated the path that humanity must follow to ensure development without jeopardizing the proper functioning of the Planet.

Francisco Ferreira pointed out two potential paths: the distribution of wealth and the promotion of the circular economy, the central subject of Natan Jacquemin's presentation, who used the business he created to demonstrate how all resources can be reused - even used coffee beans.

Finally, João Wengorovius Meneses and Luís Neves pointed to technology as an essential means of achieving a more sustainable future, sharing several examples of how this could happen.

> *Today, in an African savanna, it is possible to hear a podcast from a Harvard professor [...] knowledge has become universal and inclusive.*
>
> **João Wengorovius Meneses** | Secretary General at BCSD Portugal

> *The solution is to move from where we are standing, an extraction-driven economy, to a circular logic.*
>
> **Francisco Ferreira** | President at ZERO Association

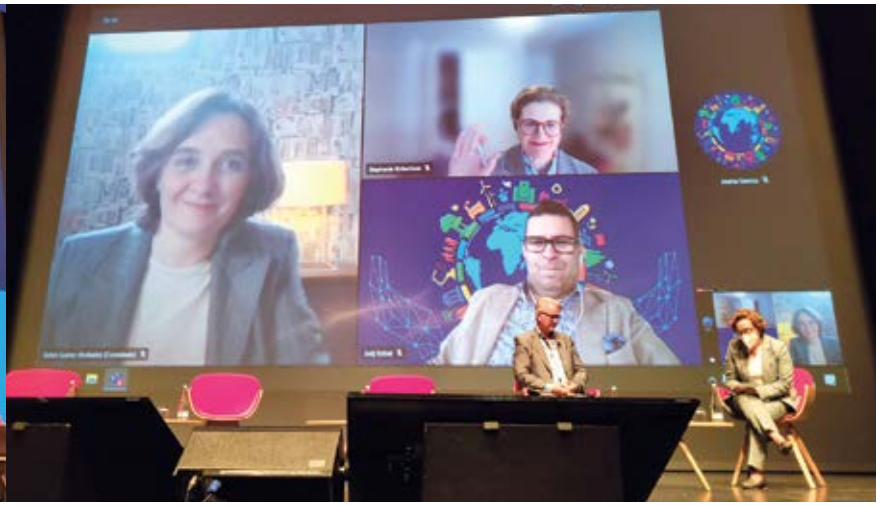
> *One of the biggest challenges we have today is to reconcile economy and ecology.*
>
> **Natan Jacquemin** | Founder of NÃM

> *We must be serious. Companies must start action seriously about climate [...] from a political standpoint we must act faster*
>
> **Luís Neves** | President of GeSI

INNOVATION FOR THE SDG

Innovation is a transversal theme to all panels at this event, so Q-Day had a particular discussion centered on this topic - "Innovation and SDG for prosperity". This panel featured Aernoudt Bottemanne, co-founder of η!Transformers, Belen Suárez, Director of the International Association of Innovation Professionals for Europe, Stephanie Robertson, CEO of SiMPACT Strategy Group, and Jurij Kobal, Director of Oikos Sustainable Development.

The innovation experts discussed how technology and its advances could become a high-speed vehicle to finally reach a level of sustainable development, where advances contribute to economic prosperity and quality of life while striving to conserve the environment.



> ***All congestions in the Netherlands impacts businesses in one to two billion euros, which is not good for prosperity.***
>
> **Aernoudt Bottemanne** | Co-founder of η!Transformers

> ***We must develop technology that contribute to both digital transformation and the Sustainable Development Goals***
>
> **Jurij Kobal** | OIKOS' Director

> ***We must address the Planet crisis but we cannot address that problem successfully unless we deal with the inequality that results from many of our actions.***
>
> **Stephanie Robertson** | Social Value Canada

> ***There is a clear link between technology and sustainability. [...] For example, we could use IoT technologies to measure the quality of air, traffic, etc.***
>
> **Belen Suárez** | IAOIP's European Director

PANEL 3. PEOPLE

By 2030 we want to reach a level where no one is below the poverty line or goes hungry. But, at the same time, we want to ensure that everyone has access to quality education and is rewarded equally, regardless of gender, religion, or ethnicity.
Technology is part of the answer. The development of digital skills creates opportunities for qualified employees and improves the services provided to citizens.

Carla Tavares, president of CITE, Lia Vasconcelos, a researcher at ODSlocal, Paula Panarra, general manager at Microsoft Portugal, and Sara Inácio, manager of the research and development team at Quidgest, took the stage at Culturgest's Large Auditorium to discuss "People".
The president of CITE - the Portuguese commission for labor and job equality - presented numbers that reveal the discrepancy between women and men in the workplace - "even though women are better educated, men still occupy the highest positions".
Researcher Lia Vasconcelos, in turn, raised the need for local awareness to meet the sustainable development goals, giving as a possible solution the ODSlocal, the project she is developing along with other entities and which consists in involving municipalities in the fight for the agenda 2030. Although in different ways, the general manager of Microsoft Portugal and Sara Inácio pointed to the digital empowerment of the population as a means to prosperity.

> *Companies must support a shift of paradigm in parental leave and promote the parental leave and quality of life of their employees.*
>
> **Carla Tavares** | President of CITE

> *Digital skills are not for the techies but for everyone. Technology will be an enabler of any role*
>
> **Paula Panarra** | General Manager at Microsoft Portugal

> *OECD estimates that 65% of the 169 targets underlying the 17 SDGs will not be accomplished without proper engagement and coordination with local and regional governments.*
>
> **Lia Vasconcelos** | Teacher at FCT- UNL and researcher of MARE

PANEL 4.
PEACE AND PARTNERSHIPHS

What can we do to foster Peace and create just and inclusive societies where fear and violence have no place? Without Peace, it is impossible to work on the Prosperity, Planet, and People fronts. By 2030 we want to promote peaceful and supportive societies, provide access to justice for all and build effective and inclusive institutions.

In the last panel of the day, the manager specialized in humanitarian actions Bruno Neto, Helena Valente, administrator of CESO Development Consultants, Mário Parra da Silva, president of the Global Compact Network Portugal, and Marta Mariz, president of SOFID, discussed the role of Partnerships and how we can achieve Peace. This panel was especially marked by the different descriptions of the current world between the Neto and Parra da Silva.

While Bruno Neto preferred to point out the totalitarianisms and the lack of focus by Human Rights on communities, Mário Parra da Silva painted a more positive scenario: even though there is a lot of work to do, there has never been so much freedom, prosperity and quality of life. Closing the conference, Carlos Costa, marketing director at Quidgest, pointed out that it was "another edition of Q-day, always thinking about the future, innovation, value creation, with a striking and very current theme.". ■

> ***We are constantly focusing on the individual instead of the common good.***
>
> **Bruno Neto** | Emergency Project Manager at INTERSOS

> ***Technology enables interconnectivity and growth, and is essential for Peace.***
>
> **Marta Mariz** | Executive Comission President at Sofid

> ***Countries with a good score in Rule of Law have a superior GDP per capita.***
>
> **Helena Valente** | Member of the board at CESO Development Consultants

> ***We must convert negativity into creative energy.***
>
> **Mário Parra da Silva** | Global Compact Network Portugal President

CO-INNOVATION AWARDS

UNIVERSIDADE NOVA DE LISBOA

» Continuous Co-Innovation Award

"Thank you for the award – it is special for NOVA. NOVA has 22,000 students and around 2,500 workers and is spread over four municipalities. This complexity requires a large circulation of documents. Therefore, it was natural that in 2020 we acquired a document management system from Quidgest, which has been implemented with great success."

| José Branco

SIBS

» New Most Valuable Product Award

"SIBS has innovation in its DNA, including its internal processes. Therefore, we organized here an ideal partner, not only for the flexibility of its tool but also for the team that had a fantastic attitude, professional pride, and a huge desire to create value."

| Rui Almeida

CITE

» Co-Innovation Award for Equality

"This platform aims to help companies and organizations to develop their plans for equality. Furthermore, it aims to help companies interactively find measures and solutions for what they will implement to achieve one of the Sustainable Development Goals – Gender Equality."

| Carla Tavares

ASSEMBLEIA DA REPÚBLICA

» Customers with History Award

"We often ask Parliament to set an example, and while the services face this challenge, we have to count on some partners. Organizations/institutions depend on people, and technology makes them develop and achieve specific goals."

| Susana Martins

UNILABS

» Co-Innovation Award for Health

PARQUES DE SINTRA – MONTE DA LUA

» Agile Co-Innovation Award

"The worker evaluation system was a significant project for Parques de Sintra. It was a strategic option by the Board of Directors that needed rigorous and rapid implementation during a pandemic. We highlight here two factors: the adaptability of the product and the monitoring and attentive presence in its implementation. This allowed us to have great results in its execution and be a winning project."

| João Sousa Rêgo

CAIXA ECONÓMICA DA MISERICÓRDIA DE ANGRA DO HEROÍSMO (CEMAH)

» Co-Innovation in Banking Award

"Quidgest is a long-time partner which has been collaborating with us on various projects for over ten years. So on behalf of CEMAH I thank you for this distinction."

| Carlos Estrela

EDP SÃVIDA

» Co-Innovation Award for Quality of Life

"This prize has a particular value for the Sãvida team. Innovation is essential to Sãvida due to efficiency and sustainability, which are our focuses. We believe that innovation through dematerialization, digitization, and automation brings excellent savings over time. Quidgest has been an essential partner in this journey."

| Dr. Francisco Pedro

UNIVERSIDADE DO MINHO

» Science and Academia Award

"The University of Minho is very grateful for this recognition, which is mutual. A thank you to Álvaro Damas, who in recent years has excited and encouraged our students' interest in a different technology for application development – the Genio technology."

| Dr. João Varajão

ALTICE PORTUGAL

» National Partner Award

"Quidgest is an essential strategic partner for Altice Portugal. We do with Quidgest this 2019 to modernize the country and present solutions together because we have the idea that being a leader is just that, making good partnerships."

| André Figueiredo

η!TRANSFORMERS

» International Partner Award

"Quidgest is an essential strategic partner for Altice Portugal. We do with Quidgest this 2019 to modernize the country and present solutions together because we have the idea that being a leader is just that, making good partnerships."

| Gerwin Woelders

SPORT LISBOA E BENFICA

» Co-Innovation Award for the Global Community

"We had 40,000 members of Casas do Benfica who were not on any platform managed by the SLB, which was problematic. There was a tremendous effort by the Quidgest team to develop all the necessary details. Now we can interact two platforms - members of Benfica and Casas do Benfica - in one. We want to continue to create more projects (with Quidgest)."

| Dr. João Almeida

JOEL SOARES (OceanXbox)

» Genio Community Award

"We had 40,000 members of Casas do Benfica who were not on any platform managed by the SLB, which was problematic. There was a tremendous effort by the Quidgest team to develop all the necessary details. Now we can interact two platforms - members of Benfica and Casas do Benfica - in one. We want to continue to create more projects (with Quidgest)."

| Eng. Joel Soares

INNOVATION FROM WITHIN

How often do we use “innovation” or derivatives to represent something new? An innovative product; a disruptive company; a process never before thought of; an unparalleled startup; or a unique idea!
The concept, arguably overused and often applied in vain, represents the pinnacle of human ingenuity - the key to a new world, the discovery that will forever revolutionize a community.

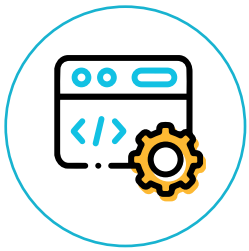
If the rate of external change exceeds the rate of internal change, the end is near.

In the business world, innovation is the process by which a service or product is renewed or upgraded by applying new approaches, introducing new techniques, or establishing ideas that create new value.
It is part of the DNA of the most competitive organizations to constantly search for and act on the next innovation in their work area.
The search for the ingredient that makes the business grow - a pinch of innovation to create a product, service, or business model never before thought of can be enough to outpace the competition.
So much so that in highly competitive industries, where customers have a myriad of other suppliers, the mantra is "Innovate or die" - anyone who chooses to resist change will eventually become obsolete and unlikely to maintain or grow their market share.

THE SOURCE OF INNOVATION

"If the rate of external change exceeds the rate of internal change, the end is near."
The memorable quote by Jack Welch, author and former CEO of General Electric, who passed away in 2020, applies brilliantly to innovation.
For organizations to ensure that they remain competitive in the marketplace or, ideally, to outpace the competition, the rate of internal innovation has to be higher than the rate of external innovation.

The ability to make discoveries is often associated with two fronts of an organization:



1. MANAGEMENT

The most experienced people / in higher positions who follow the trends in their field find opportunities through a new business model, a product with new features, or a differentiating service.

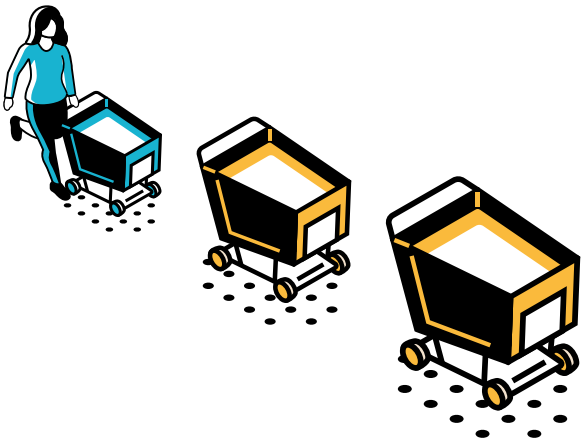
2. RESEARCH AND DEVELOPMENT

the department whose primary purpose is to keep an organization competitive by giving insights into the market and developing new services and products or improving existing ones.

The future of the business is often dependent on this second department. If the team cannot bring innovations to the operation, the company risks stagnation and, in the worst case, bankruptcy.
However, not all organizations have the ability to have a research and development front office or the budget to inject capital into resources to make the work of these teams pay off.
So let's go deeper into how an organization can innovate. Adapting the ideas that James Utterback, professor of Technological Innovation, Entrepreneurship, and Strategic Management at the Massachusetts Institute of Technology (MIT), shares in a study[1] in the 1970s, we can summarize the innovation process into three important steps:

1. **Generation of an idea**
2. **Solving a problem**
3. **Implementation and diffusion**

Although the first two points may change order - we may find a solution because we encountered a problem, rather than having found a solution and then finding a problem to solve - the process is simple to understand.
We might even venture to say that the process is so simple that anyone can apply it with some ingenuity and curiosity. Let's take a hypothetical mundane example:



You find yourself in the late 1990s. One day after work, you pay a visit to your local supermarket to buy dinner. Knowing your way around, it takes you only two minutes to find all the needed products.
Unfortunately, only three lines are available for checkout, and five people in each with carts full of groceries. It will be a long wait - "there should be a faster way for people with fewer items."
Fortunately, you have the company of your Discman. You start looking at the cash register and the movement made by the clerk. He is registering the products at the same speed as the fifth Kraftwerk album "Computer Love" track - how odd. When he has finished registering the products, the clerk makes a movement that gives the final amount of the purchase. The person does not find his wallet; another two minutes pass.
Inefficiency brings the thought, "What if there was a self-service cash register?"
During the time it took two more people to go through their purchases and pay, you already had a prototype in mind: the same registration technology that the clerk had at the checkout, a display the size of a Macintosh Classic you had in the office, which would also serve as a central platform for the rest of the technology, payments had to be made only with debit or credit cards, and finally, a scale that would ensure that the customer only took the products he had registered.
What seemed like a million-dollar idea was immediately ruined by a problem: Until then, the only experience you had had with technology was as a user, never as a creator. Then, finally, it was his turn to put the products on the conveyor belt. You turned off the music, paid, and returned home with his purchases, but without the hope of developing the idea.
This idea would be implemented years later by an ingenious British inventor. Interestingly, according to Global Market Insights, Inc (2) estimates, by 2024, the market for self-checkout will be worth four billion dollars.

So, even though the most critical skill of any person is the ability to think differently and ultimately solve a problem more effectively, the inability to develop the solution or invest in resources that will do so brings down any entrepreneurial idea.

THE TOOLS OF INNOVATION

AInnovation can come in many shapes and forms. It can be a small change in a business model, a new feature in a product, or a slight twist on a service. But, regardless of where innovation is applied, today, it is mainly done in the digital universe.

However, while there are many people with the ability to think and structure an idea with the potential to enter the market, there are still few who can develop them - we will focus on how to bridge the "yet" later on.

The demand for professionals capable of creating software has gradually increased in recent years, and the backlog of technology projects in organizations' portfolios has grown at the same rate. The difficult-to-find programmers will become even more scarce in a time when the world is talking about economic recovery through digital - also the theme of the 31st edition of QuidNews. Developing new solutions and implementing technology will be imperative to this recovery. "I anticipate that the concentrated and urgent search for talent in a short time will immediately overcome the crisis of programmers felt in the software industry in the '90s of the last century to cope with the bug of the year 2000," writes Carlos César, business relationship manager at Quidgest, in his article on pages 24 and 25.

In this sense, one would expect that the most important question to ask would be, "how do we train more specialists in technology development?"

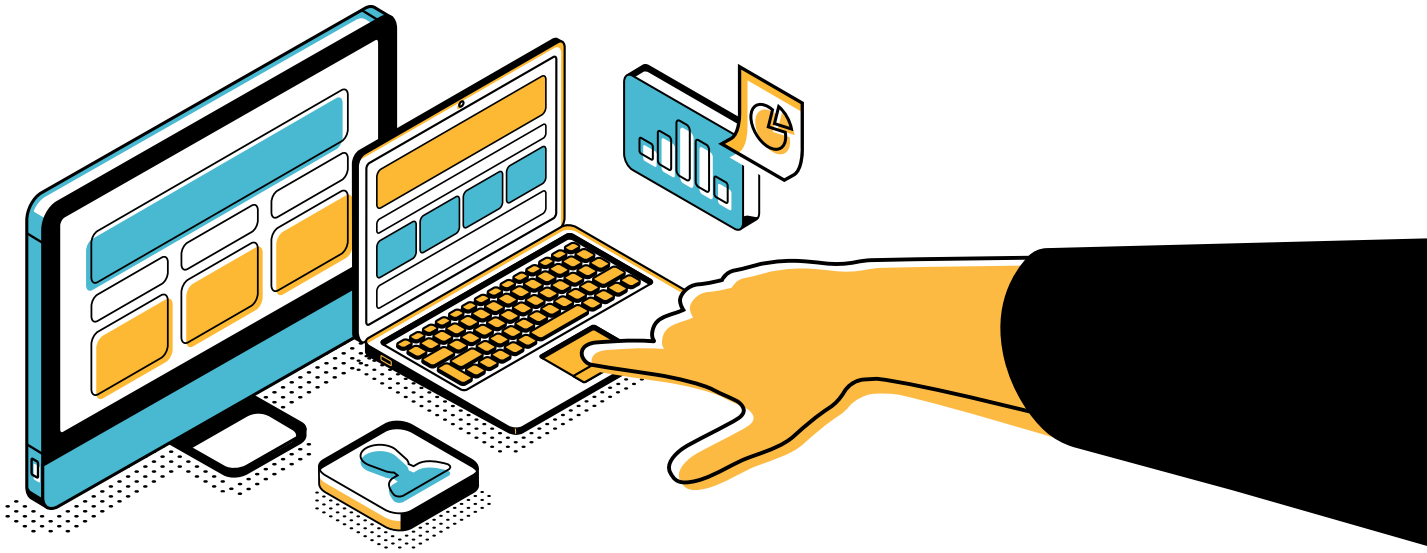
The market and public organizations have already answered this question. It involves the proliferation of code schools, which have gained popularity in recent years, and the strengthening of university courses to create more engineers and technicians in information technology.

However, the most competitive and forward-thinking organizations will ask themselves, "how can I make my programmers more productive and give the possibility of development to those who have no background in information technology?"

First point - the era of developing digital solutions via manual code is outdated.

Programmers, who it is important to note will never cease to be relevant, already have tools driven by artificial intelligence that raise the productivity levels of software development from scratch and improve the ability to implement innovations in the solutions created. Quidgest's Genio, for example, significantly increases the productivity of a manual programmer and a hyper-agile approach to changeability.

Quidgest's Genio multiplies the productivity of a manual programmer 100 times and takes a hyper-agile approach to change capability.



The second point - nowadays, an increasing percentage of students who, when they finish their school courses, already know how to create their digital products - regardless of whether or not they have had a course directly related to software development, such as Computer Engineering.

We are talking about students from Humanities or Arts areas, for example, who have learned to develop digital solutions in no-code, low-code, or Python tools to complement their academic projects.

It is important to note that the empirical knowledge acquired by the constant interaction with technology by the new generation facilitates the creation of the requirements for a system within their area of expertise.

However, we know that the reality of the job market is not only made of newly graduated professionals born in the consumer technology boom (and therefore have an unprecedented ability to adapt to this new reality). Perhaps more important is the opportunity to grant people who are specialists in a field outside information technology the ability to develop digital solutions. For example, hardly anyone will be able to create an accounting system as good as the one that an accountant can develop with 20 years of experience or by a recent accounting graduate who wants to change the paradigm of his field.

For organizations, the real opportunity of this decade is to use their most experienced resources and equip them with technology development expertise.

And thus, are created the so-called Digital Champions or Business Technologists - people with business knowledge who start using technology to develop internal-use tools or better serve the market. This is one of the most effective ways to boost an organization's intrapreneurship and decrease the backlog of projects passed on to the teams (which were previously the only ones) with development skills.

Even though the basic concept may be interesting, given the constant evolution of the technological universe, two main problems arise - the continuous and mandatory knowledge update and the duration of the courses. A quick search through some coding schools leads us to conclude that a simple web development course takes about 500 hours. As the years go by and given that the activity of these intrapreneurs is not about developing technology on a daily basis, knowledge updates are required - new languages and development methods.

To counteract these challenges, organizations have to pass on technology development knowledge at a higher level of abstraction to their intrapreneurs. Instead of learning programming languages, they learn to use software with artificial intelligence that generates code autonomously.

The languages in which this code is generated are, in turn, updated as technology needs to change.

Quidgest's Genio is an example of this: although it is necessary, from time to time, to keep up with the tool's updates, the knowledge is long-lasting since it uses a common language that lasts. Moreover, the initial bases of the system, which for most trainees are enough to build systems of medium complexity, can be acquired in just one week of the course (~40 hours).
On the other hand, the universal nature of modeling via Genio makes it easier to build bridges between technical and non-technical teams. It fosters what consultancies recognize as Fusion Teams.

Fusion Teams are teams of experts in one business area and technology specialists that come together for faster development of digital transformation

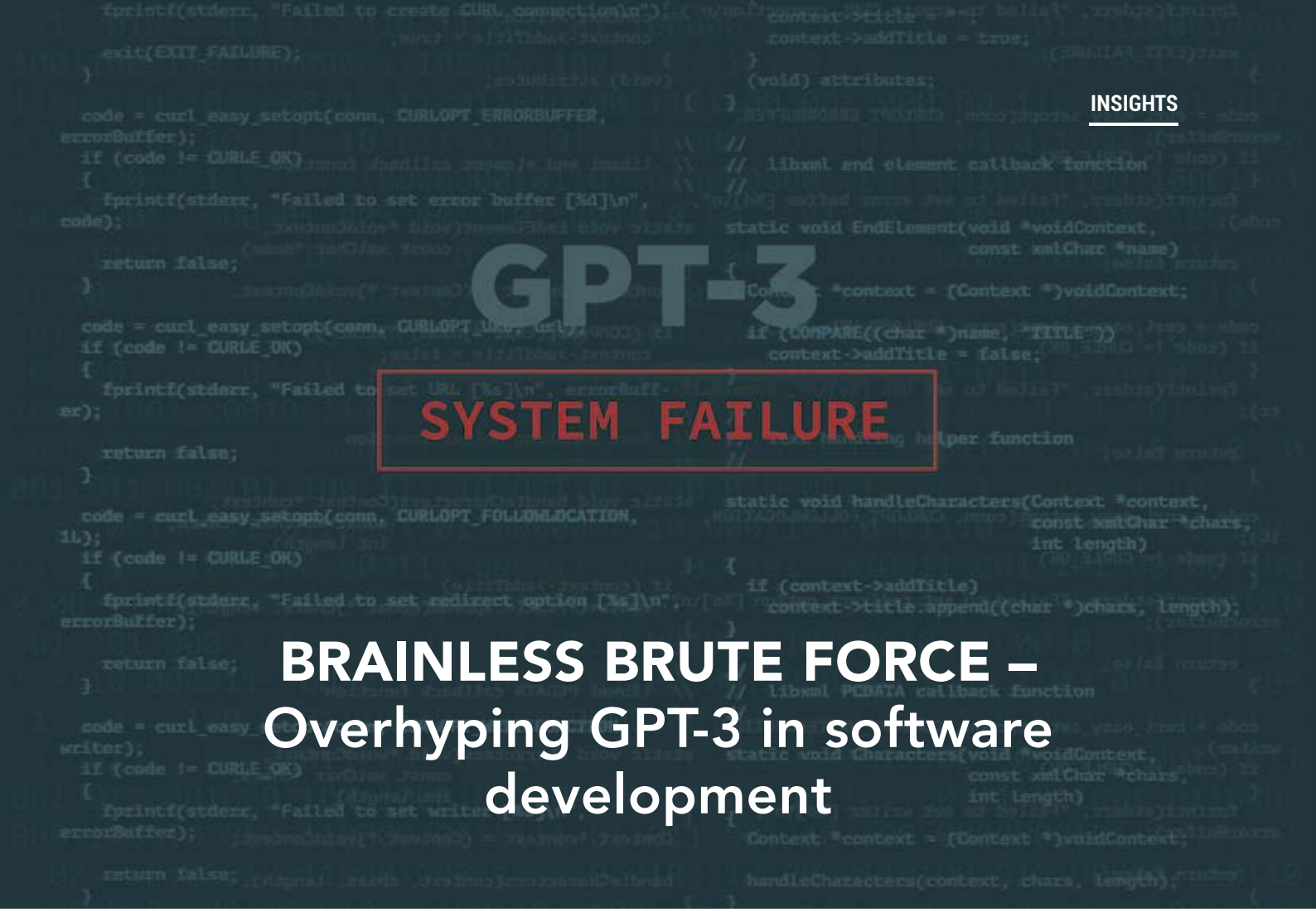
In this reality, technology creation is done in tandem. As a result, the product is developed with inputs that come from the cooperation between technical and non-technical professionals and guarantee its security, scalability, performance, integration possibility, and future support.
The fact that non-IT professionals know exactly what Genio can do negates the repeated game of broken phone and ensures the company's competitive advantage with substantially shorter development cycles - the faster the development, the greater the value created.

In essence, effective innovation from within with a tool like Genio supports organizations to achieve better results from new revenue streams, have less cost due to increased employee productivity, and less risk due to the disposal of potentially dangerous tools that can facilitate data loss or leakage, open the door to hackers and regulatory non-compliance.

Innovation in an organization does not live without intrapreneurship. The latter, in turn, does not live without employee empowerment. In the competitive market we live in, we must give the right tools to digital champions to use their ingenuity to solve (internal and external) problems and thereby expand the organization into new markets, beat the competition by knowing our customers' problems better, and ensure that we retain and contribute to the career development of our teams. ■

(1) The Process of Innovation: A Study of the Origination and Development of Ideas for New Scientific Instruments, James M. Utterback, 1971

(2) Press Release: Self-Checkout System Market to hit $4bn by 2024: Global Market Insights, Inc. (https://www.globenewswire.com/news-release/2018/03/13/1421027/0/en/Self-Checkout-System-Market-to-hit-4bn-by-2024-Global-Market-Insights-Inc.html)



BRAINLESS BRUTE FORCE – Overhyping GPT-3 in software development

The Generative Pre-Trained Transformer 3, also known as GPT-3, is the recent state-of-the-art Natural Language Processing technology developed by OpenAI. It made headlines across the globe after "writing" an opinion piece on The Guardian – that was the result of a short but detailed briefing and the compilation of eight different outputs (essays). The base for GPT-3 consists of giving it a cluster of words or a structured sentence, and it will generate text that is consistent with the input, which is enabled by the 175 billion parameters..

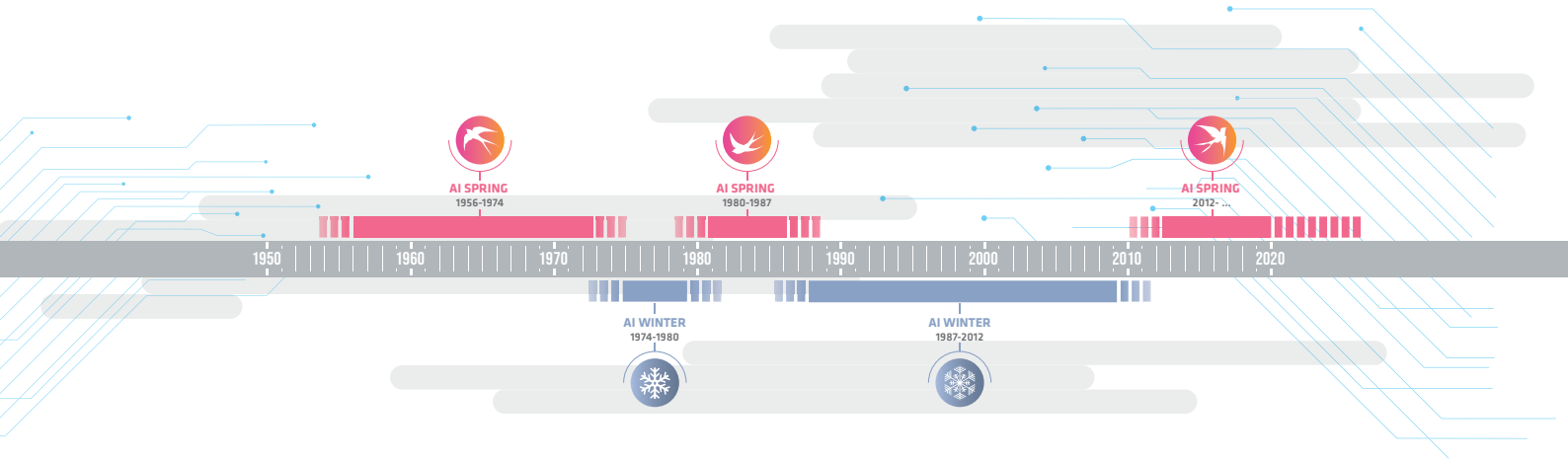
Such advanced feature warned us, once again, artificial intelligence might be pursuing jobs. In this case, white-collar workers such as journalists, lawyers, accountants, and even software developers.

OVERHYPING ARTIFICIAL INTELLIGENCE – WHAT COULD GO WRONG?

Before going any further, it is essential to note that the craze around GPT-3 is another artificial intelligence overhype. It makes great media headlines, feeds contemporary Luddites' speech, and skyrockets everyone's expectations. High hopes (often driven by companies developing solutions in the area) and low results were the main triggers for the former so-called Artificial Intelligence Winters – periods of reduced funding and interest in artificial intelligence research.

Since the begging of the last decade, we have been living in Spring. Global corporate investments were 67.85 billion USD (nearly 5.5 times more than in 2015), research and development is stronger than ever, and venture capitalists are looking for disruptive startups focused on artificial intelligence.

Here is where we – companies developing and/or researching about artificial intelligence – must be careful: overhyping what artificial intelligence



can do will eventually lead to another Winter, which only benefits the Luddites that want to discredit the technology.

Be honest about what the technology can do, especially in marketing campaigns. Knowledgeable people will eventually find out on their own when they "look under the hood". If there is no match between what you are promoting and what your technology can do, your marketing campaigns will fuel a generalized disbelief in artificial intelligence.

GPT-3 IN SOFTWARE DEVELOPMENT

Since its launch, GPT-3 use cases have been beyond article writing. Several articles enumerate tools created using OpenAI's software. They go from creating product descriptions and sales emails to A/B testing and document extraction.

Among the paraphernalia, there is one skill GPT-3 seems to have acquired during training: software development. One can simply write a briefing on an application's appearance, and GPT-3 generates the source code.

This is how products such as GitHub Copilot are being pursued. And it fits the narrative of democratizing software development: people outside IT can finally develop their own applications without hiring an expensive professional (type what you want and – like magic – the solution will be presented to you in the form of code).

However, GPT-3 is not the answer for technology development democratization. On the contrary, it is far from expectations and deviates from the path we should chase.

PREDICTING IS NOT GOOD ENOUGH

OpenAI's technology is good at PREDICTING text. It uses a probabilistic approach to forecast whatever makes more sense coming next given a particular context. The output results from what is publicly available from the Internet – in GitHub Copilot's case, it uses whatever code is available on GitHub.

A probabilistic approach is not the way of moving towards the future of software development. Whatever is probabilistic has a chance of failing.

Although GPT-3 might use an enormous basis of knowledge, such as GitHub, it does not mean the code is correct. There is no selection process in GPT-3 regarding what is entirely right or wrong. And if every chunk of the source code retrieved from the Internet is prone to mistakes, it means the larger and more complex the tool generated, the more likely it is to fail.

> *In software, what is not 100% correct, is 100% wrong*

CYBERUNSECURITY

There are also cybersecurity concerns. New York University's Tandon School of Engineering academics has put GitHub's Copilot to the test on the cybersecurity front. In their paper released in August, they found that roughly 40% of the time, "code generated by the programming assistant is, at best, buggy, and at worst, potentially

vulnerable to attack". In addition, the potential coding assistant tends to generate incorrect code, an inclination for exposing secrets, and problems judging software licenses.

LOOKUP-TABLE DISGUISED AS ARTIFICIAL INTELLIGENCE

Moreover, GPT-3 is simply a massive lookup-table that does not even perform backpropagation due to the massive number of parameters it is equipped with – an important machine learning feature to feedforward (i.e., to replace positive of negative feedback with future-oriented solutions).

In short, GPT-3 is similar to the developer who has some familiarity with the syntax of a programming language, without knowing any type of abstraction behind it, and who is constantly referring to a massive dictionary of coding snippets.

CENTRALIZED BRUTE FORCE

GPT-3 is a centralized brute force instead of a decentralized smart unit. In fact, according to MIT Technology Review, "its enormous power consumption is bad news for the climate: researchers at the University of Copenhagen in Denmark estimate that training GPT-3 would have had roughly the same carbon footprint as driving a car the distance to the moon and back, if it had been trained in a data center fully powered by fossil fuels".

In software development, we must be able to solve vagueness and contradictions. If an app-development machine was going to do so, it would need an extensive unbiased data set, which is not the case with the Internet.

PROGRAMMING AT A HUMAN SPEED

Copilot's methodology does not pursue any new way of working. Artificial intelligence has a tremendous potential to enhance software development productivity, but this novel product works the way around: they have put artificial intelligence working at the speed of a programmer instead of a programmer working at the rate of artificial intelligence.

We must rethink the process of developing technology through artificial intelligence. We should not use it to code like a regular programmer. We must rethink the process to reach new heights.

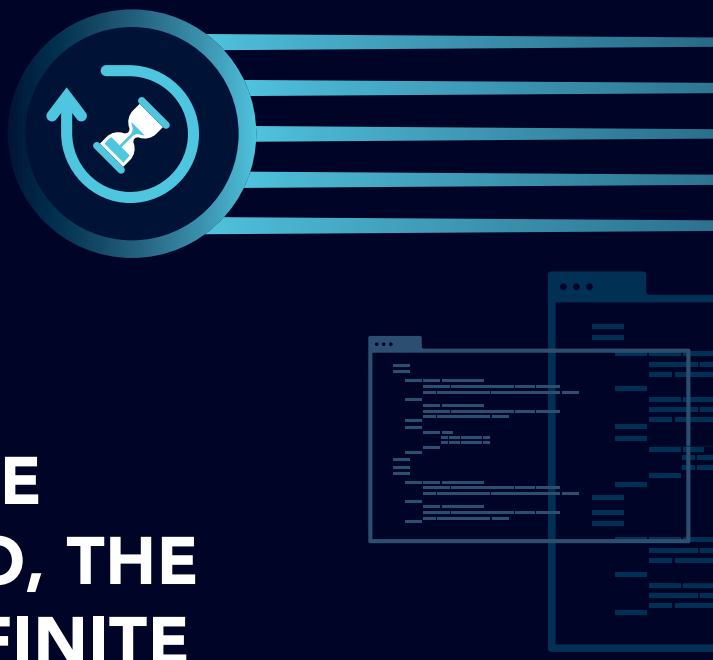
BUILDING A SANDCASTLE

Creating a solution through GPT-3, especially to those who never developed software before, might sound like building a castle – unfortunately, in this case, it is a sandcastle. Even the next Generative Pre-Trained Transformer generation, with 500 times more parameters than the GPT-3, will be prone to the same mistakes. The problem is not strength. It is a lack of brains. We need more models and less experimentation and probabilities, and more rules instead of randomness.

With everything that was pointed out above, you still may ask: "what if we build an application with GPT-3 and get a quality assurance squad to work on the code?".

That is still not the way forward. Developers and IT professionals must not waste their time skimming through machine-generated code to find bugs and vulnerabilities.

If we want to pursue a world where we use artificial intelligence to help us build applications, the "machine" should be able to produce error-free software in the first place. The future of software development is a little to no-code approach that is highly unlikely to produce errors and easy to change. ■



WHEN THE RESPONSE TIME TENDS TO ZERO, THE VALUE TENDS TO INFINITE

"'Uh, can you please come as soon as possible?' He agreed to be as fast as he could. Much to my surprise, the locksmith pulled up in a van just three minutes later [...] In less than ten seconds, he had the door open, allowing me to retrieve my keys from the trunk and get on with my life".

"'How much do I owe you?' I asked. 'That will be $50, please.'"

Chris Guillebeau proceeds to emphasize how he "secretly wanted him to take longer in getting to me, even though that would have delayed me further. I wanted him to struggle with unlocking my car as part of a major effort, even though that made no sense whatsoever. The locksmith met my need and provided a quick, comprehensive solution to my problem. I was unhappy about our exchange for no good reason."

The author felt cheated. He would be more satisfied if the solution took longer. The locksmith had accumulated experience over the years, which made him an effective and reliable source for solving problems in his field of work.

The main question revolves around time: should he earn less because his visible work took five minutes, or should he earn more because it only took him five minutes?

People and companies in several fields of work should not be awarded or compensated for the hours they put in a project but for the results they deliver.

Chris Guillebeau depicts this paradigm in the widely-popular "The $100 Startup" book. He left the car keys inside the trunk of his rental car and needed a fast solution. Otherwise, he would be late for his commitment. The locksmith proceeded to solve his problem in under five minutes, assuring the situation would not set him back on his schedule.

If an individual or a company can hand a quality product in less time, the deliverer should be awarded for it. If you want something urgent to be fixed, you must pay for the prompt resolution – when the response time tends to zero, the value tends to infinite.

Time is generally the most important currency of all, but in software development we seem to be using it wrong. We must not value something solely based on the period it took for completion. We must also (and more importantly) appreciate it

by the added value it brought to both sides, which in turn is highly dependent on the circumstantial variables.

Software development businesses are still vastly working under an hour/rate logic rather than a result approach: this software took us 100 hours to develop, hence its cost. The same applies to minor tweaks, such as business rules updates, that can take dozens of hours.

Once again, the pricing focus is not on the result nor the quick response but the time it took to complete the request. Why does this paradigm remain in a time when we know better?

As most incumbent have this working procedure, it jeopardizes the new or most innovative companies with a result-based approach to software development. The vast majority of well-known companies and consultancy firm's business models revolve around developer-hour rates.

Moreover, organizations looking for a solution often follow the market's buzzwords to create requirements. In turn, these buzzwords undermine organizations approaching the objectives differently. This is predominantly seen in public tenders, where the requirements limit the companies that can run for the project since its process and technology-restricted.

CAs a consequence, in the long-term, it affects the companies that want to innovate and the ones that are buying the technology since they are limiting the tender to only the ones that address their requirements directly.

With this said, should software development keep stuck to hourly rates? Or should the market shift to a result-based pricing, i.e. the faster the results are delivered, higher the value?

We have a better way of approaching software development.
A new way boosted by the low-code and no-code realities and assisted by artificial intelligence.
A new way that enables you to develop 10 times faster with 1/10 of the resources.
That new way is called Genio. ■

GENERATIVE AI

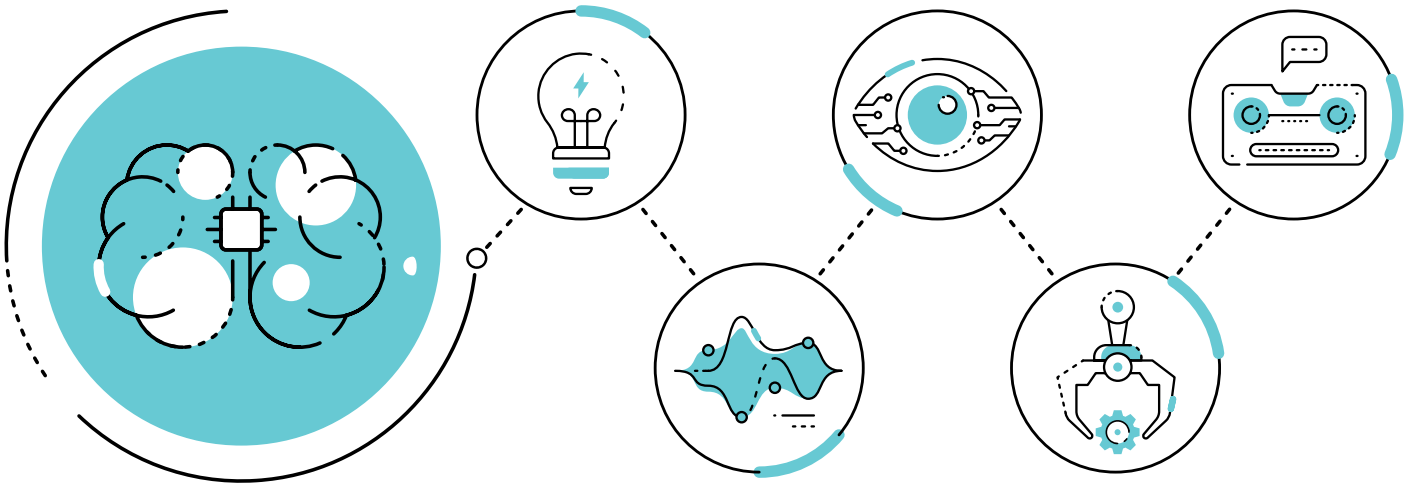
A NEW GENERATION OF ARTIFICIAL INTELLIGENCE

The term “artificial intelligence” has been around since 1956. That was the year John McCarthy made up the avant-garde term for a conference that united three of the five founding fathers of the technology that inspired science fiction books, films and made Humanity dream of a world where robots automated the most dangerous and tedious tasks.

However, only recently, artificial intelligence started to take some of the burdens of some daily tasks off our shoulders. Despite having complex neural networks, most artificial intelligence models mainly provided classifications, predictions, and optimizations. That is, relatively simple outputs, often in the form of symbols – numeric outputs, such as a “weeks until maintenance notification”, chatbots, and computer vision classifications are a few examples of the simple things AI vastly does today.

The models started understanding a pattern in the data fed to them and generated a new output. Until now, artificial intelligence models were based on the discriminative model of doing things, i.e., they can predict what is next on conditional probabilities.

Although we are still far from non-technical people’s sci-fi visions and Luddites who saw the next great threat to end jobs in artificial intelligence – in fact, it will create more jobs than destroy –, Generative Artificial Intelligence expands the output of what the technology can do.



WHAT IS GENERATIVE AI?

Generative AI is a disruptive technology that can generate artifacts that previously relied on humans, delivering innovative results without the biases of human experiences and thought processes.

The new generation of artificial intelligence detects the underlying pattern related to the input to generate new, realistic artifacts that reflect the characteristics of the training data. The MIT Technology Review described Generative AI as one of the most promising advances in the world of AI in the past decade.

Generative AI ensures higher quality outputs by self-learning from every set of data. It also lowers the risks associated with a project and trains machine learning algorithms to be less biased. Moreover, it allows robots to comprehend more abstract concepts – both in the real world and in simulations.

Generative AI will be extensively useful in several ways. Enterprises, for instance, can use the technology in two approaches:

1. Augmenting existing creative workflows collaboratively with humans.

Creating artifacts to support higher-order creative tasks by humans. For example, generating a dungeon for a game world. Game designers change AI's creation behavior through reinforcing what they like or dislike about the work generated – "more like this" and "less like this".

2. Acting as a factory producing artifacts.

Generative AI can have artifacts in bulk with little involvement from humans (beyond shaping the parameters of what they want to create). That is the case with software development tools where humans do not have to code manually. One only has to set the context – focusing on the result instead of being concerned about the process.

GENERATIVE AI EXAMPLES

MOVIE RESTORATION: Enhancing images from old movies, upscaling them to 4k and beyond, generating more frames per second (e.g. 60 fps instead of 23) and adding color to black and white movies. These are some of the features AI is capable of achieving for the movie industry.

IMAGE IMPROVEMENT: The same can be applied to still images. A low-resolution and bad quality picture can be turned into a decent resolution thanks to some Generative AI tools.

Google recently published a blog post letting the world know they developed two models to turn low-resolution images into high-quality pictures. Examples include the upscale of a woman's photography from a 64 by 64-pixel input to a 1024 by 1024-pixel output.

HEALTHCARE: Generative AI enables early identification of potential disease to create effective treatments while the disease is still in an initial stage. For instance, AI computes different angles of an x-ray image to visualize the possible expansion of a tumor.

DESIGN: People are also using Generative AI to enhance the design industry. That is the case with Jacobs, an engineering company that used software to develop a generative engineering capability for NASA to help create a life-support backpack for its next-generation space suits.

DESENVOLVIMENTO DE SOFTWARE: Generative AI can also disrupt the software development industry by automating manual coding work. Instead of coding the entirety of software, people (including professionals outside IT) can develop a solution by giving the AI the context of what they need.

This is the case with GENIO, a model-driven tool capable of enhancing a professional's productivity by a factor of 100 when compared to a regular manual coder – helping non-technical people develop their own solutions and become entrepreneurs as well as empowering internal resources of companies that do not intend to keep growing their IT team. ■

Digitize without forfeiting our future*

CARLOS CÉSAR | Business Relationship Manager at Quidgest

The pandemic brought us a new perspective on how organizations can operate in a 100% digital reality.

The pandemic brought us a new perspective on how organizations can operate in a 100% digital reality. On the business side, the reality was clear: those who had the tools to take their operation digital stood out from the competition, but those who were unprepared either had to acquire solutions in a hurry, needed to spend more resources, or ended up lagging.

In the case of public organizations, which have been going digital in recent years, the challenge was different. Employees were forced to work remotely, something unheard of, and citizens, on the other hand, were prevented from accessing services in-person - contact via digital platforms was the rule.

Digital has thus become a fundamental pillar for citizen services. And it is also one of the strong bets of the Recovery and Resilience Plan. Of the 16.6 billion Euros foreseen in the Portuguese plan, whose goal is to resume "sustained economic growth," the State intends to invest a total of 2.5 billion Euros to support the Digital Transition, where the motto is "digital at the service of people. Given that the investment is primarily targeted at the technological capacity building of services, here is a new challenge: "sustained economic growth" and "technology" are like water and oil. The operation support technology solutions we commonly find do not support sustained growth. We see this in many legacy technologies, which at the time of purchase solved the problems of the time, but which in the meantime have become barriers to evolution: they need very skilled labor in ancient programming languages, require a lot of human effort, and are often subject to errors (they seem to be the "elephant in the room", no one dares touch the subject of replacing or upgrading them).

For this reason, and based on the sustainability of operations, decision-makers must look at three key aspects of technology: total cost of ownership, speed of development and automation, and change management and vendor independence. It should be noted that these also apply to companies looking to acquire new information systems for new realities.

How much will this system cost me?

As a rule, the question one asks when considering whether to start with a particular software vendor is, "how much will it cost me to buy this system?" Of course, this question makes sense. However, if the intention is to maintain an information system over the long term, an organization must consider the costs of maintenance, subsequent upgrades, and new features. In that case, the more important question is: "how much will it cost me to maintain this system?"

For this reason, it is imperative that decision-makers thoroughly scrutinize what the actual total cost of ownership is, that is, the cumulative cost of acquiring and maintaining a system. Otherwise, they may be forfeiting the future of an entire organization.

How long does it take you to deliver a customized solution? And to change it?

In the past, when we talked about packaged technological solutions that came on disks or other physical media and were locally installed, some buyers ventured to ask if it was possible to make any changes/adaptations. Today, the prevailing question is more how long changes take. Speed of change is vital if we want to adapt quickly.

We live in times of true disruption. And I don't just mean the pandemic, but also so many other circumstances that have changed the way we live even before the new coronavirus has spread around the world: Brexit, trade wars, the General Data Protection Regulation, frequent legislative changes, among others.

In addition, recovery and resiliency plans around the world are expected to result in high demand for professionals capable of developing digital products and services customized to the needs of organizations. I anticipate that the concentrated demand in a short period will surpass the crisis of programmers in the software industry in the '90s to cope with the "bug" of the year 2000.

Delays in delivering solutions can be expected to be frequent. However, just like many industries have already evolved to automation and substantially increased productivity levels, a portion of software vendors are already able to automate a large part of the generation of an application without relying so much on human resources and maintaining the ability to customize.

Technology needs to be flexible to cope with the increasingly uncertain future.

Do the changes become vendor dependent?

It is also essential to ensure that organizations are not locked into the software vendor. Ideally, the buyer will retain ownership of the solution, i.e., the source code of the purchased software, to reduce future dependencies on that vendor and ensure that future development can be done internally or by other companies.

Otherwise, the organization is faced with two options: either pay the vendor's asking price for upgrades or change software, losing access to all the development investment made so far.

Suppose the answer to either question is not the right one. In that case, it is guaranteed that we are not talking about sustained economic growth, and the inevitable future endangerment of the entity will arise. Therefore, the concern with purchasing technology has to go far beyond the price and solve current problems. Let's think about the future, in the medium term, and calculate well the costs and the total value involved.

*The article was originally published on Dinheiro Vivo (dinheirovivo.pt)

THERE IS A BETTER WAY TO MANAGE A MUNICIPALITY

An information system that serves a municipality with more than 10.000 inhabitants will never satisfy the needs of a local government in charge of 500.000 people. In other words, the turnkey solutions that the market offers will hardly assure the governance needs. But, on the other hand, the ones made from scratch and exactly tailored have two significant problems: the extremely high costs and the long development time. There is a better way.

Local governments are crucial to improving their municipalities' economic, social, and environmental conditions. These local government bodies serve a dual purpose:

1. Ensure that citizens have access to the services and goods necessary to exercise full citizenship;
2. To represent and involve citizens in determining specific local needs and how these can be met.

While this sounds like a simple mission, local governments have to provide the quality of life that keeps and attracts citizens to live in their communities, create attractive conditions for establishing and hosting businesses, and at the same time ensure that all social operators function correctly. Even if municipalities have several teams, making sure that all fronts are secured and that all parties meet the stipulated goals are challenges that are hardly surmountable without digital tools.

To ensure that all the elements that make up a municipality (from libraries and schools to green spaces to business incubators and social housing) are adequate and available, local leaders must rely on intelligent, integrated governance. This is a trend among smart cities and territories that are trying to rise to this new level.

By smart governance, we mean using digital tools and the Internet to ensure a sustainable environment and foster collaboration, transparency, participation, and communication with citizens and other operators. In addition, decision-making, such as increasing the number of employees required, construction work, extending schedules, and budgets, is made more accessible by the information made available by these essential tools.

At their base, these solutions have the potential to support digitalization and reduce the bureaucratic barriers of services and consequently improve democratic processes, and transform the way public services meet the needs of the citizens they serve.

However, all municipalities are unique ecosystems with different territorial, economic, social, and demographic models. As a result, infrastructure, social support networks, business fabric, and even the number of citizens hardly resemble each other across municipalities. In other words, a solution that serves a city with more than ten thousand inhabitants will never meet the needs of a local government that is in charge of a territory with 500.000 people.

In other words, the turnkey solutions that the market offers will hardly assure the governance needs. But, on the other hand, the ones made from scratch and exactly tailored have two significant problems: the extremely high costs and the long development time.

THERE IS, THEREFORE, A BETTER WAY

Due to its composable essence, where each module can be quickly connected, disconnected, and adapted, Quidgest's ERP ensures rapid implementation and adaptation to the specific natures of each client. The initial and ongoing development of the system resembles the construction of a Lego, where pieces can be added and removed - according to the identified needs raised by local leaders - without the structure falling apart.

The system includes all aspects of municipal and inter-municipal management and combines modules that incorporate the specifics of each organic unit or each area of activity. Each module integrates different functionalities. For example, in the case of the last one listed - Smart Governance, municipalities now have a digital counter to serve citizens, a platform to assess the sustainability of the region, and various management systems such as citizen relationship management, surveys and polls, data protection, and shared mobility.

This holistic approach counters the paradigm for digital solutions in municipalities: one central solution, which is used to manage internal resources, and dozens of satellite solutions, which often do not communicate with each other, posing added challenges to decision making.

So that each economic, demographic, social, and territorial model has its needs fully covered and that decisions are taken with as much information as possible, without the teams having to spend resources, rely on a management system made with cutting edge technology that automates code generation.

Quidgest ERP Municipality 360º - during the three seconds it took to read the name of the best product for municipalities, Quidgest's technology wrote more than 5,000 lines of code autonomously. ■

ERP 360 MUNICIPALITY web

From a Smart Governance standpoint, Quidgest's ERP includes municipal and inter-municipal management aspects, eases all the interactions with citizens, economic and social operators, and other counties.

Software Development in Disruptive Times

Prof. Dr. João Varajão, PhD

This is an excerpt of the article published by Professor and Researcher João Varajão on Communications of the ACM about the development of VirVi, Quidgest's software to help authorities with pandemics.

The recent pandemic has brought challenges rarely seen before. It has made evident a world that is strongly globalized, capable, and characterized by a high interdependence of resources and means, but that is also fragile and has a high potential for contamination—not only in the physical sense but also concerning information, ideas, processes, and other aspects..

Given the novelty of the situation, one may be tempted to think this is a unique situation that will soon be overcome, returning eventually to the (apparent) stability that existed previously. However, the reality indicates this view is, at best, illusory and that we live in an age in which societal fragilities and instabilities will be increasingly evident (optimistically, awareness of them will also become more acute). In other words, crises have always been part of human evolution, and they must be seen as inevitable and recurring realities that need quick and effective responses. The key is to be prepared for them and act accordingly.

As history has so often demonstrated, difficult times enhance society's ability to adapt, and lead to the search for better solutions. Information technologies, which in recent decades have revolutionized the lives of people and businesses—sometimes more or less quietly, sometimes with a bang—are inevitable since they provide cost-effective solutions to the increasingly complex problems of an interconnected and interdependent world. This is easy to understand from a simple example: if, in this pandemic, there had been a global shutdown of the technological infrastruc-

ture that supports the Internet, the world would indeed be experiencing a much more complicated and chaotic reality than we are living—and it is already quite difficult for everyone.

It is in this context that the software-development project described in this article is worth reporting on since it involves several disruptive aspects that are fundamental in a world that requires solutions "thought today" to be "made available yesterday." From the point of market-opportunity awareness to the availability of a fully functional software product, this project took three weeks to complete and involved several state-of-the-art practices and tools: fast decision making; agile project management; and extreme low-code software-development technology.

In this project, the challenge was to "deploy software faster than the coronavirus spread." In a project with such peculiar characteristics, several factors can influence success, but some clearly stand out: top management support, agility (in decision and management), understanding and commitment of the project team, and the technology used. Conventional development approaches and technologies would simply not be able to meet the requirements promptly.

The project described here reflects the demands currently placed on companies in terms of decision and action capacity. It combines market vision and rapid decision-making capacity with action. The company identified an opportunity, defined a project, and decided to move forward, structuring and organizing a team by adopting a different approach to project management—a streamlined agile approach—and adopting a proactive marketing posture. Without technology that supported the rapid development and deployment of software, however, the project could not have been achieved in such a short time—in a context of high instability and rapid evolution of requirements..

A study published by IBM in 2009, "The Enterprise of the Future – Implications for the CIO," stated, "The enterprise of the future is hungry for change, innovative beyond customer imagination, globally integrated, disruptive by nature, genuine, not just generous." These are, more than ever, fundamental characteristics for today's organizations, to which could be explicitly added, "supported by stable as well as disruptive information technology." Low-code, extreme low-code, and no-code software development, supported by innovative technologies such as artificial intelligence, certainly have influence in this scenario and are expected to accelerate rapidly toward worldwide adoption as major enablers of digital transformation. ■

Full references:

Varajão, J., "Software Development in Disruptive Times: Creating a software solution with fast decision capability, agile project management, and extreme low-code technology"

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Read the article

Read the magazine

Digital Paperwork

CARLOS COSTA | Marketing & Partnership Business Development Manager at Quidgest

Simplifying and dematerializing processes through digital transformation is a great idea. In fact, it's an elemental way to serve customers and citizens better and improve the efficiency and effectiveness of operations.

Here's the problem: When we went from paper to digital, a considerable portion of companies and public organizations thought only of exchanging fiber for bytes. The physical paper previously used went digital with the same functions. A keyboard took the place of a pen. Instead of filling out paper forms, we fill out digital forms.

The bureaucracy and consequent paperwork continue. In the pen-and-paper era, activities such as filling out repeated information or physically moving to complete a transaction were understandable. However, this is still often necessary in the digital age.

Below, I share some mundane cases from anyone's day-to-day life that illustrate well the digital and paper bureaucracy - both in public administration and the business sector.
Let's start with the case of elections. One would expect that with the advancement of information technology when voting, I would pick up my cell phone and click, and at the end of the day, we would have the results immediately as soon as I finished voting. But it's still not like that. Instead, I have to go to a location, stand in a line, identify myself, take a piece of paper and a pen, make a cross, fold it up, and put it in a box. And after that, several people will have to unfold, count, sort, and manually type into a computer terminal the result of that count. And wait several hours for the results. And then file all the paperwork away somewhere, for some time, in case a complaint arises.
Another example is the death process. When we have the misfortune that a relative of ours passes away, we have to go to various services to inform them of what happened - finances, social security, registry offices, banks, etc. Deleting a person's data is a bureaucratic process that seems complicated, but it is only 1 bit of information in any system: Alive or dead. Why so much dislocation? Aren't the computers networked? Why do I have to connect to seven different portals to register the same information? Basically, in this case, what the so-called digital transition has changed so far is the possibility of accessing portals and physically moving only to a single location instead of to several different places. In some cases in the Public Administration, the model has become hybrid. That is, we can fill out part of the information online, but we still need to go to the counter to deliver or sign some documents.

Despite entering and leaving public agencies in digital mode, much information still circulates internally on paper and with slow, time-consuming, and very expensive handling and approval circuits.

When it comes to the corporate sector, banks or insurance companies are some of the best examples of the potential of serving digitally and eliminating most bureaucracy. Unfortunately, in the banking universe, we have a significant disparity between those who know how to operate and attract new customers and those who fall short in using technology to their advantage. The core computer systems of some banks are decades old. They are only painfully responding to new customer demands thanks to a series of costly and rigid technological patches that have been made over the years.
A practical case is that even though the incumbent banks let me perform some of the online transactions via home banking platforms, I still need to be physically at a service counter to open an account. By contrast, if I want to open an account at one of the natively digital banks, in some cases, I merely open my phone, download an app, fill out a form, take a selfie and a picture of my citizen card, and a few days later I have an ATM card in the mail.
Indeed, executives, strategists, and thinkers in the public and business sectors are aware of the changes that can be taken to improve the quality of service to citizens and customers.
So what changes?

There is a substantial difference between those who serve well digitally and those who have only managed to move parts of their services to digital without promoting agility, reduced effort (from employees and customers/citizens), and quality of service. The difference is technology

There is the will in most of these places, but the tools are not there. There is no lack of talent either. What is missing is the adoption of technology capable of keeping up with the disruptive times we live in.

*The article was originally published on Dinheiro Vivo (dinheirovivo.pt)

EuroBic

COMPLIANCE, PRODUCTIVITY, AND COST REDUCTION

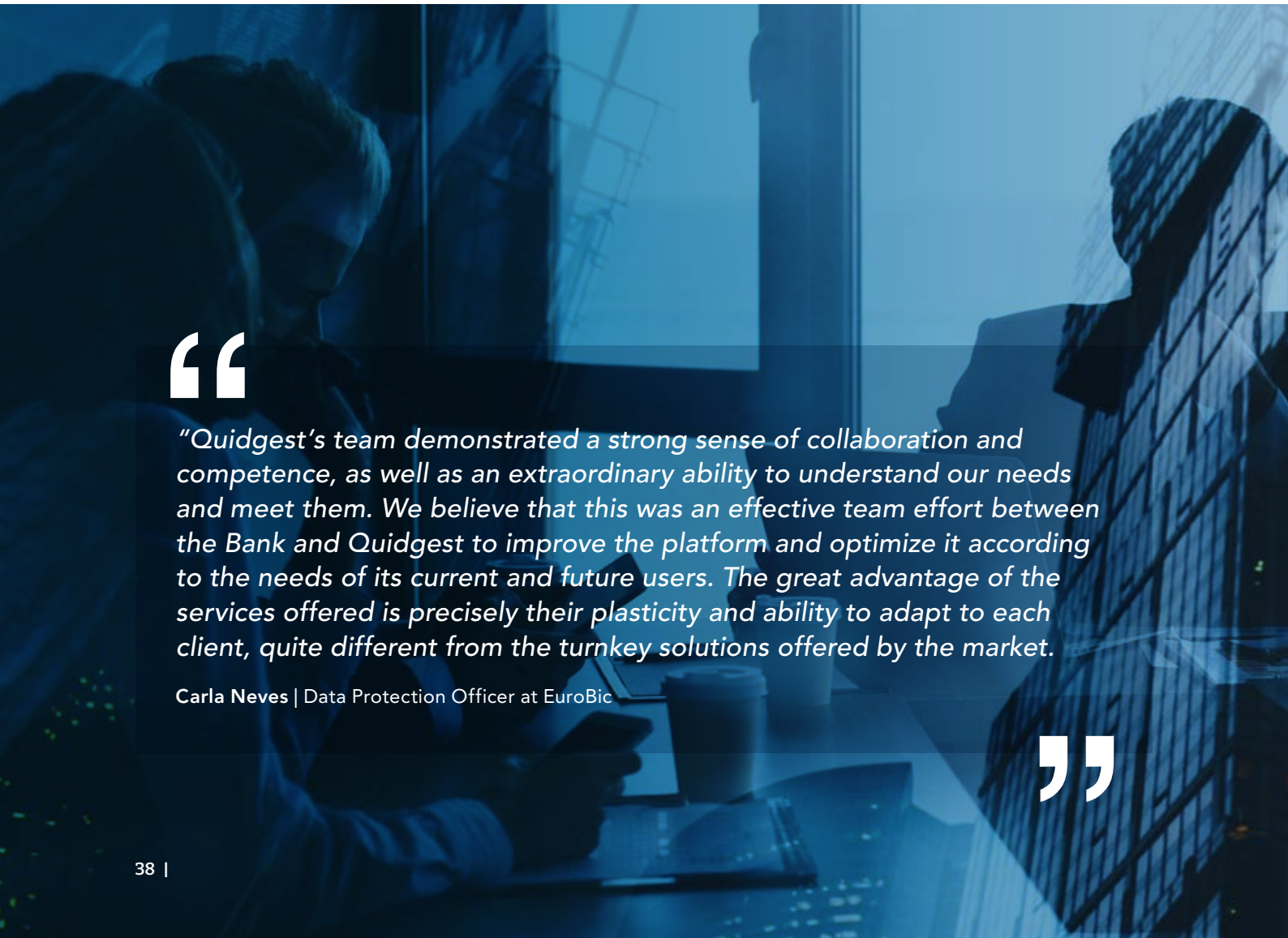
EuroBic, a Portuguese bank founded in 2008 that counts 182 commercial structures and about 1.500 employees, opted for Quidgest's Data Protection Management system to support its compliance with the General Data Protection Regulation (GDPR) and boost its teams' productivity.

CHALLENGE

The challenges caused by the introduction of the GDPR, which came into force in 2018, and other national and international legislation and regulations in data protection led EuroBic to seek a solution that would support compliance with the rules in force.

According to Carla Neves, Data Protection Officer at EuroBic, other challenges that the banking institution sought to resolve included managing all data protection-related issues for the different internal areas involved and the activity of the DPO's organic structure.

Therefore, EuroBic was looking for an agile tool to support the management of the different processes related to data protection, such as the Register of Processing Activities and Data Protection Impact Assessment (DPIA), and equip the structure with mechanisms for reporting on its internal activity.

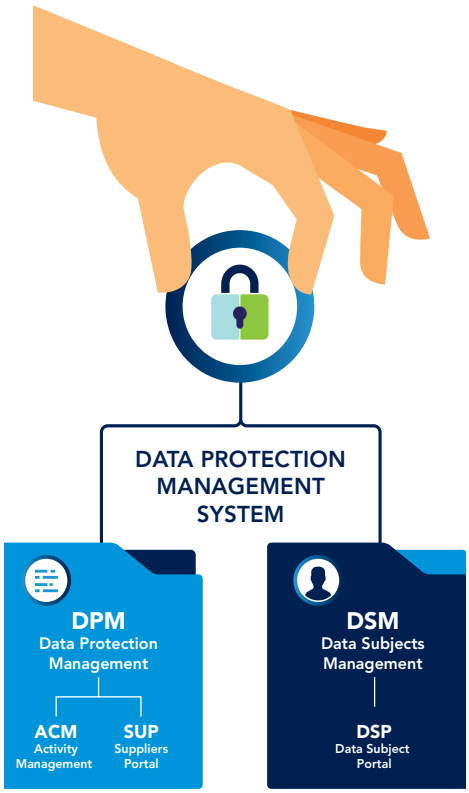


"Quidgest's team demonstrated a strong sense of collaboration and competence, as well as an extraordinary ability to understand our needs and meet them. We believe that this was an effective team effort between the Bank and Quidgest to improve the platform and optimize it according to the needs of its current and future users. The great advantage of the services offered is precisely their plasticity and ability to adapt to each client, quite different from the turnkey solutions offered by the market.

Carla Neves | Data Protection Officer at EuroBic

SOLUTION

The solution implemented by a CIPP/E certified team is composed of all the Quidgest Data Protection Management System modules (Data Protection Management, Data Holder Management, Data Holder Portal, Supplier Portal, and Task Management).
Together, the modules allow monitoring all the compliance procedures with the RGPD, notifying, advising, and articulating each responsible person for each task. This way, all those involved at EuroBic enjoy a substantial increase in productivity.



OUTCOMES

Almost two years after the system's implementation, EuroBic's Data Protection Officer points out that one of the main advantages the team has felt is the "centralization of key processes required by GDPR, with the possibility of creating workflows for the interaction of all the intervening areas".
Concerning information management, Carla Neves adds that the tool has fostered information sharing and communication between services - due to a single database - and has facilitated data control and monitoring by various users.
On the other hand, as mentioned above, individual and collective productivity has improved substantially - something that is due in particular to five factors provided by the solution:

1) **Simplification of information processing**

2) **Greater speed in executing operations**

1) **Reduction of errors through validation and automatic filling mechanisms**

1) **Standardization of processes within the organization**

1) **Process automation**

In total, after the implementation of the system, the organization estimates that operating costs have decreased by between **10** and **20%**.

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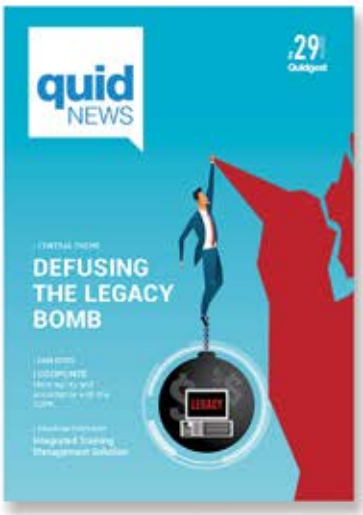
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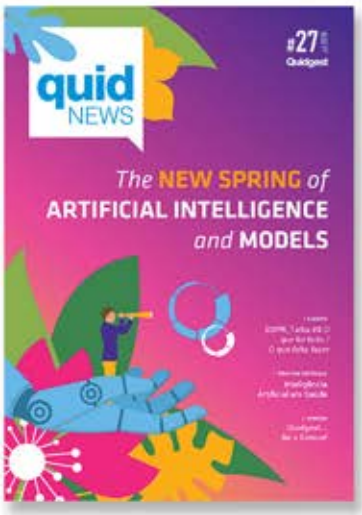
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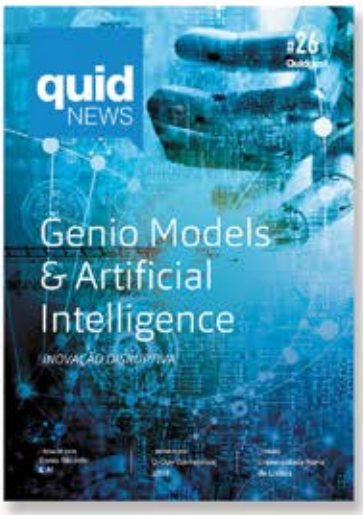
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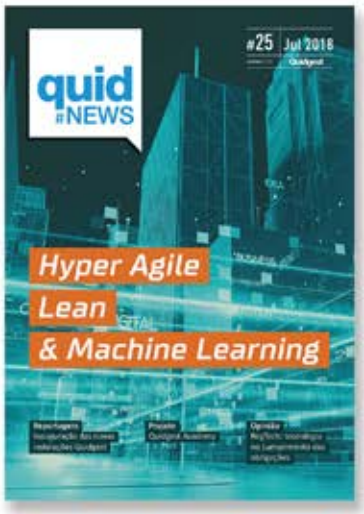
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