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Beyond singularity: Artificial Intelligence between myth, data, and strategies – some recommendations for Poland inspired by Italy's success and the experiences of Ottante (Beta 80 Group)

Abstract. This paper discusses the educational and professional challenges arising from the emergence of Artificial Intelligence (AI) in contemporary society, with a specific focus on Poland. As a member of the Board of Directors of Ottante (Beta 80 Group SpA), the author reflects on the global rush towards AI development, likening it to exploring new continents, where opportunities and risks coexist in a delicate balance. According to renowned experts such as Demis Hassabis and Sam Altman, Artificial General Intelligence (AGI), endowed with human-like cognitive capabilities, is imminent and will have significant impacts over the next decade. Its development may lead to Singularity, where machines surpass human intelligence, triggering an uncontrollable technological evolution. The education system will play a pivotal role in ensuring these technologies' conscious and balanced development. This paper highlights the importance of collaboration between public and private sectors and the need for Polish businesses to overcome barriers, such as resistance to the unknown, and leverage the vast potential of Poland's human capital to boost competitiveness. Building on the *Ekspertyza ws aktualizacji Polityki AI w Polsce* document and the Polish Government's priorities, the paper presents concrete solutions in the healthcare and energy sectors based on Ottante and Beta 80 Group experiences. The „Digital Health" project aims to integrate AI tools for early diagnosis, ambulance management, and caller communication in emergency response centers (112 and 118). The energy management solutions enable optimal placement selection, provide accurate energy production

forecasts tailored to specific needs, and create optimal trading strategies for navigating the energy market.

Keywords: AI in healthcare, AI in the energy market, workforce and AI strategies, AI ethics frameworks, SME AI integration

Ponad *singularity*: sztuczna inteligencja między mitem, danymi a strategiami – rekomendacje dla Polski inspirowane sukcesem Włoch i doświadczeniami Ottante (Beta 80 Group)

Streszczenie. Niniejszy artykuł analizuje wyzwania edukacyjne i zawodowe wynikające z dynamicznego rozwoju sztucznej inteligencji (AI) we współczesnym społeczeństwie, ze szczególnym uwzględnieniem polskiego kontekstu. Jako członek Zarządu Ottante (Beta 80 Group SpA), autor odnosi się do globalnego wyścigu w rozwoju AI, porównując go do eksploracji nowych kontynentów, gdzie szanse i ryzyko współistnieją w delikatnej równowadze. Według uznanych ekspertów, takich jak Demis Hassabis i Sam Altman, nadchodzi era ogólnej sztucznej inteligencji (AGI) o zdolnościach poznawczych zbliżonych do ludzkich, co w ciągu najbliższej dekady wywrze znaczący wpływ na społeczeństwo. Jej rozwój może doprowadzić do Singularności – momentu, w którym maszyny przewyższą ludzką inteligencję, inicjując niekontrolowany postęp technologiczny. System edukacji odegra kluczową rolę w zapewnieniu świadomego i zrównoważonego rozwoju tych technologii. W artykule podkreślono znaczenie współpracy sektora publicznego i prywatnego oraz konieczność przełamania barier, takich jak opór przed nieznanym, by w pełni wykorzystać potencjał polskiego kapitału ludzkiego i zwiększyć konkurencyjność gospodarki. Na podstawie dokumentu *Ekspertyza w sprawie aktualizacji Polityki AI w Polsce* oraz priorytetów rządowych zaprezentowano konkretne rozwiązania w sektorze ochrony zdrowia i energetyki, wypracowane przez Ottante i Beta 80 Group. Projekt „Digital Health" zakłada integrację narzędzi AI w celu wczesnej diagnostyki, optymalizacji zarządzania karetkami pogotowia oraz wsparcia komunikacji w centrach powiadamiania ratunkowego (112 i 118). Z kolei rozwiązania z zakresu zarządzania energią umożliwiają dobór optymalnej lokalizacji inwestycji, precyzyjne prognozowanie produkcji energii dostosowane do indywidualnych potrzeb oraz tworzenie strategii handlowych na rynku energii.

Słowa kluczowe: AI w opiece zdrowotnej, AI na rynku energetycznym, strategie siły roboczej i AI, ramy etyki AI, integracja AI MŚP

Introduction

Let us consider the explorers of the Renaissance period embarking upon voyages towards uncharted continents. On the one hand, explorers compete vigorously to assert dominance over the unexplored realms of Artificial Intelligence to claim the potential advantages that may be afforded. Conversely, there is an intrinsic

fear that, beyond a certain threshold, vessels may descend over the precipice of a world that was once perceived to be flat. All ships – both large and small – navigate the delicate balance between opportunity and apprehension, between the pursuit of discovery and the trepidation associated with the unknown. What if the world is not flat?

Nobel Prize-winning chemist Demis Hassabis, CEO of Google DeepMind, speculated in 2023 that machines with cognitive abilities comparable to humans could arrive within a decade. The CEO of OpenAI, Sam Altman, stated: "By 2025, we might see the first AI agents join the workforce and materially change companies' productivity". Meta founder Mark Zuckerberg promised to make AGI (Artificial General Intelligence) freely accessible to developers and the public. In an interview, Altman stated: "Thankfully, I think it's still many years away before such an aspiration [AGI] can be achieved in any meaningful way, so we have time to put the regulation systems in place. But it is a matter of public safety that we progress this work with some urgency".

What is AGI? Sam Altman defines it as a highly autonomous system that surpasses humans in most economically valuable work. Those who expect AGI to replicate human cognitive abilities, imagine something somewhat different: usage of natural language, ability to learn from multiple sources – including interaction with the environment – creativity in tackling unforeseen and complex situations, as well as learning transfer and adaptation across domains. Artificial General Intelligence is a theoretical research field attempting to create software endowed with human-like intelligence without fully understanding what that entails. Human intelligence is the uniqueness of emotions, sensory experiences, context, empathy, and states of mind that unpredictably influence thoughts and logical reasoning. Artificial Intelligence is a product of our intellect, emulated and mimicked by supercomputers capable of executing an incredible number of calculations and simulations – it is confined to the training data. How can it match or surpass human intelligence if we, as humans, cannot translate our uniqueness into code? And then – which uniqueness to choose from over 8 billion people, each different from the others?

AGI is considered the final stage before the advent of the *Singularity*. In mathematics, *Singularity* is a point where a function or mathematical object becomes undefined or behaves in an unexpected way. In the context of AI, *Singularity* is the moment machines surpass human intelligence, triggering an uncontrollable, irreversible, and self-perpetuating cycle of technological evolution. Vernor Vinge (Vinge, 1993), a professor of mathematics at San Diego State University,

argued that within the next thirty years, we would have the technological means to create superhuman intelligence. Shortly after, the human era would end. In the *Post-Human Era*, superintelligent machines will most likely choose to keep humanity alive – since eliminating us could destabilize the balance of a complex, interconnected ecosystem. After all, humans possess unique and hard-to-replicate values like creativity, intuition, and the ability to grasp complexity. To protect our future, we should develop ethical guidelines in advance, to ensure we build machines capable of beneficial actions. Then, we should collaborate with superior intelligence rather than oppose them and educate society about *Singularity*'s potential risks and benefits to avoid panic.

Vinge argues that the *Singularity* would represent the most desirable non-catastrophic outcome. The alternative is a future he calls *The Era of Failed Dreams*, where hardware improvements fail to keep pace with software development, a phenomenon already observable today. Without adequate hardware and energy resources, strong AI could not advance, and the mounting environmental stress (which AI might have remedied), nations would revert to nuclear confrontation and mutual destruction policies. One terrible day, humanity might self-destruct, regress to the Stone Age, and gradually go extinct. To avoid extinction, humankind should chase the magic ingredient: *education*. By leveraging the plasticity of the human psyche – bolstered by hope, information, and communication – humanity could reach a *Golden Age*, marked by a peaceful ascent based on tolerance, wisdom, and lasting prosperity.

The Rise of Multi-Agent Systems and the Role of Human Oversight

While many experts contend that technological Singularity remains an unlikely prospect, the year 2025 witnessed a significant advancement in Multi-Agent Systems (MAS) – where multiple specialized AI agents collaborate, deliberate, resolve conflicts, make autonomous decisions, and take goal-directed actions rather than merely executing predefined instructions (Belcic and Stryker, 2025). MAS exhibit emergent behaviours that can be both highly adaptive and unpredictable, enabling cross-domain problem-solving. However, such systems require centralized governance to ensure coherence, necessitating a hierarchical structure in which a high-level AI Orchestrator – a large-scale model – supervises and coordinates smaller, task-constrained models. This architecture bears some resemblance to Artificial General Intelligence (AGI), yet with a critical

distinction: human oversight must remain integral to the decision-making process. AI agents should function as tools that augment, rather than replace, human labour. Users should learn how to effectively deploy specialized agents for specific tasks and, in some cases, design their own orchestrating agents. While certain job functions – such as meeting transcription and summarization – can be delegated to AI, others inherently require human judgment. For instance, an AI agent might assist in preparatory negotiations, but the core decision-making and interpersonal dynamics of high-stakes business discussions will remain a human domain.

Finding steady ground in the middle of the waves

If *Singularity* ever arrives, it will not be tomorrow. Meanwhile, the navigators of the oceans of Artificial Intelligence race ahead with Force 12 winds at their backs, sparking fierce battles to secure top talent. Governments and private companies are allocating ever-increasing funding to develop AI-based systems that dominate markets. The epicentre of progress isn't found in university lecture halls but innovation hubs. Collaborations between research centres and private firms accelerate knowledge exchange and enable staggeringly rapid development, driving tangible change. *Ottante,* in its own small way, is an example of this trend. The collaborators are both entrepreneurs with decades of experience in business, and scientists with cross-disciplinary academic backgrounds, ranging from mathematics, data science, and computer science to psychology, philosophy, neuroscience, and physics).

In 2024, 78% of businesses worldwide were using AI tools (Hostinger, 2025) and around 89% of small businesses use AI tools for everyday tasks. Only 1% of companies describe their AI rollouts as "mature". Even if the US is the one that invests the most, as far as adoption is concerned, India led the market at 59%, followed by China at 58% and Singapore at 53%. Among European countries, Italy ranked second, with 36% of businesses reporting AI adoption, just behind the UK at 37%. The Italian business landscape comprises 95% small businesses with fewer than 10 employees. While mid-sized and large enterprises primarily implement large, complex projects, small businesses still have room. AI tools increased business users' throughput by 66% (Nielsen, 2023). These productivity gains come from the previous versions of generative AI, and we can expect future AI systems to improve even more. The productivity gains accrue only while

workers are performing those tasks that receive AI support. In some professions, like UX design, many tasks may be unsuitable for AI support.

Polski Instytut Ekonomiczny (2024) offers a snapshot of the Polish market, revealing that only 6.6% of businesses implement AI-based solutions, nearly all of them generative. Private reports paint a different picture: EY estimates 25% of Polish firms use AI (Nowakowska et al., 2025), while KPMG puts the figure at 27% (KPMG, 2025). The surveys suggest financial barriers aren't the only – or even the primary – obstacle. The real bottleneck is the inability to envision how AI could add value to a business. Nevertheless, awareness of the strategic utility of AI is increasing. Until recently, AI implementations were primarily focused on areas offering a rapid return on investment, such as customer service, marketing, and sales. Today, companies are seeking tailored solutions that align with their specific business needs, including operational process optimization, data analytics, cybersecurity, and the development of new products and services.

Poland's appetite for change is evident: many conferences such as the one at Kazimierz Wielki University (UKW) in Bydgoszcz, the work of around 500 experts in the GRAI group (Grupa Robocza ds. Sztucznej Inteligencji [GRAI], 2024), Polish LLMs such as Bielik and PLLuM, and the buzz of industry associations all signal momentum. Yet, without widespread knowledge, Poland risks being overrun by pirate ships.

"Ignorance is strength"

In November 2024, I attended the TRAI conference organized by the UKW Faculty of Computer Science. Having lived in Italy for 35 years, I can discuss AI in both Italian and English – but not in Polish. So, before attending, I enrolled in a webinar to pick up some technical terminology. The topic was intriguing: *How to leverage AI tools in your business.* But the speaker was steering a pirate ship. Here is what he said:

> I'm about to show you how to write a book in several minutes. Imagine how jealous your competitors will be. AI invents the topics, drafts the outline, develops the content, and even suggests a catchy title. AI builds your expert reputation and career. Are you an aesthetician? You can keep wasting your potential by going to work every day – or record your knowledge and let AI and the internet work for you.

You studied complex subjects at university. How much money made it for you? If you mastered useless things, I promise you'll learn more from me – and it'll actually help you.

Now, let me show you how AI replaces more than one of your employees. Calculate what you pay them today, and you'll know how much you'll save by firing them.

AI can even act as your lawyer. Try this prompt: "Assume the role of a debt-recovery attorney with 10 years of experience and draft a demand letter under Polish law".

"Ignorance is strength" as the slogan etched on the Ministry of Truth's facade in George Orwell's *Nineteen Eighty-Four* (Orwell, 1984) declares. Many tools this webinar host aggregated on his platform – sold at premium prices – are available as open-source or freeware. I have listed a few examples in the bibliography, but the catalogue is vast and ever-growing. Some are task-specific; testing multiple is wise. My favourite is *Chatbot Arena*, an open-source tool launched in April 2023 through collaboration between four U.S. universities (UC Berkeley, Stanford, UCSD, CMU) and the UAE's MBZUAI. Arena is a benchmarking chatbot for large language models (LLMs). Users submit a query, and two randomized, anonymous chatbots compete in real-time. After voting for the best response, the models' identities are revealed. Beyond its scientific value, the platform exposes how LLMs work, their errors, and omissions – I strongly urge ethical voting as the project deserves it. No AI platform is perfect, and none will deliver what the webinar host promised without "our intelligence and effort". Once ten aestheticians quit their jobs to publish AI-generated and very generic books based on knowledge they do not possess (but scraped online), the market will saturate. AI excels as a research aid but will not turn anyone into a sage. It does not understand its output, often lacks updates, and invents answers when stumped. A notorious case is New York lawyer Steven Schwartz, fined $5,000 in 2023 for citing six fake court decisions from ChatGPT. His defence? "ChatGPT assured me the cases were real". Concerning job losses: no employer benefits from firing a thinker who leverages AI to add value, let alone replacing them with a dilettante's tool. Our professional success requires continuous learning, both within AI and beyond its boundaries.

To win, even small boats must sail

AI demands both structural and sociocultural adaptation. It is a formidable vessel, but without a skilled crew, it stalls or runs wild. Promoting AI literacy requires case studies, experimentation, and accessible risk-aware resources. There are many free materials out there, but rarely in the Polish language. Early experiments in SMEs are often low-cost and small-scale, but they open minds and build skills gradually. Strong partnerships are key: Polska Agencja Rozwoju Przedsiębiorczości, chambers of commerce, industry groups, private players, banks, investors, and hubs should fund projects and share know-how.

Italy's EU leadership in AI adoption stems from widespread awareness. Tutorials, free courses, and media coverage abound. Six years ago, Pasquale Viscardi and Giacinto Fiore – from Italy's Southern and poorest region – launched *IA Spiegata Semplice* (AI Made Simple), a podcast series. In 2020, they organized the first *AI Week* (conferences, workshops, demos) and later *AI Play*, a platform with courses and success stories. This year's *AI Week* drew 17,000 attendees, 500 speakers, and 100 use cases. Other events – *AI4Business Summit* (Milan), *SMARTec & AI Expo* (Turin), *AI Expo Europe* (Rome) – dot Italy's calendar. A lot of Italian universities host free seminars and hackathons.

Also private companies like ours join the momentum. Ottante's Chief Scientific Officer trained Beta 80's team on computer vision. A co-founder has upskilled many CEO's, CFO's, and top executives in the food, automotive, and fashion industries highlighting how to optimize their business and what risks they face if they do not act in time. Demand for his workshops keeps growing. Some of Beta 80's leaders hosted an *AI Aperitivo* for colleagues, collaboratively building a RAG (Retrieval-Augmented Generation) model for document analysis. These examples, targeting very different audiences – coders, managers, and employees – demonstrate the powerful drive to learn in the working world.

Artificial Intelligence has even become dinner party conversation, thanks to its constant presence on TV, radio, social media, and in newspapers. Take Giorgio, an 83-year-old friend who owns thousands of books, some ancient family heirlooms. He had begun cataloguing them but soon realized this only solved part of the problem. While he could locate every volume, he did not know their content. We discussed how generative AI could solve his problem. After that, Giorgio took a book on prompt engineering and created a structured library where each book has a concise summary, while scientific works include logical

pathways highlighting their interdisciplinary connections. The only real barrier to AI adoption – in both professional and personal life – is not age or expertise but a lack of clear purpose and imagination. Effective communication and easy access to training are effective tools to bridge the gap.

Poland cannot be a pirate ship

The United Arab Emirates, once significantly behind in Artificial Intelligence development, established the world's first university entirely dedicated to AI (MBZUAI) in 2019. The UAE government decided to train top managers, who have the power to steer the economy and finance, enabling them to lead change within their organizations, so MBZUAI not only educates young students but also offers courses for senior executives in public and private sectors on topics such as AI for Business, AI Strategy and Management, Innovation with AI, etc.

Microsoft Corporation's 2025 study *The AI in Education* (Microsoft Education, 2025), surveyed 1,851 respondents from higher education institutions across the United States, the United Kingdom, Australia, Brazil, Japan, and Saudi Arabia to assess AI adoption and perceptions in academia. Based on this experience Mark Sparvell, Director of Microsoft Marketing Education, claims:

> I see great examples where AI is used, not just in a One-to-One situation – one kid in front of a computer – but a group or a whole class using it as a catalyst for conversation. This is the age of conversation. It's fuelled by AI, but it's about the power of conversation and dialoguing, and that's a very human experience.

The study reveals a strong consensus among higher education leaders that developing AI literacy is paramount. Student use of AI has increased by 37 points, reflecting a growing recognition of AI's importance for future professional success. Students primarily use AI to initiate projects, brainstorm ideas, and efficiently gather and summarize information. Conversely, academic leaders leverage AI to improve accessibility, optimize communication, enhance administrative efficiency, and pinpoint areas for institutional improvement. Nearly all respondents expressed confidence in their ability to use AI effectively and responsibly. Notably, most leaders report their institutions have established clear policies regarding AI education; however, more than half of educators, alongside over 40% of students, report insufficient guidance on curriculum content related to AI literacy.

An intriguing finding is the higher integration of AI tools into curricula outside the US – specifically in the United Kingdom, Australia, Brazil, Japan, and Saudi Arabia – where educators also demonstrate greater confidence in their ability to teach AI literacy. This international cohort views AI education as an essential component of foundational education. A recent Australian study cited in the Microsoft report found that university students using AI-powered chatbots improved their exam scores by approximately 10% compared to peers who did not use such tools. Generally, AI users perform better on assignments but tend to fare worse on autonomous tests, highlighting challenges in assessment design and academic integrity. Moreover, AI benefits are unequally distributed, students at higher-ranking universities with greater AI familiarity experience more positive effects, underscoring concerns about digital inequity. Three important recommendations emerge from the Microsoft survey for the implementation of study plans:

1. Engage with educators and students to find out what is working well and where there are additional opportunities.
2. Embrace experimentation with new ways of enhancing learning by using AI to complement traditional learning methods – not to replace them.
3. Invite students to the table to provide input on institutional AI plans.

Compared to these states, European countries have a long way to go to close this gap. Fortunately, Poland has a good foundation. 80% of Polish youth complete secondary education and 38% complete university studies (Główny Urząd Statystyczny [GUS], 2024). According to estimates from Polska Agencja Inwestycji i Handlu, the ICT sector employs over 430,000 specialists across 50,000 software development companies, contributing 8% of GDP. Poland has great potential and ranks fifth among EEMENA countries in the „The Global Talent Competitiveness Index" (Polska Agencja Inwestycji i Handlu, 2022). What is missing is the ability to channel ambitions in the right direction.

Follow the North Star

In December 2024, the GRAI group published *Ekspertyza ws. aktualizacji Polityki AI w Polsce* (GRAI, 2024). This comprehensive work provides the Polish government with guidelines for balanced and effective AI development. One identified priority is *Bezpieczne AI* – security of AI-based solutions. Nearly all countries address AI-associated risks – such as bias, hallucinations, privacy violations – through laws and ethical guidelines. Poland recently adopted the AI

Act, regulating AI development and use at the European level with specific safety measures. While necessary, the legislative approach proves insufficient as it is reactive: it identifies what has already occurred without addressing root causes. Moreover, even ethically aligned models can generate paradoxes or lose effectiveness when over-constrained. Some chatbots, for example, refused to answer legitimate questions or struggled balancing multiple objectives, as seen in conflicts between privacy and accuracy in facial recognition systems.

There are dilemmas which cannot be resolved in laboratories or through negotiations. They must be tested in real environments with continuous feedback and iterative interventions throughout the entire development cycle: from data collection and algorithm design to model validation and operational results analysis. ML/DL models are stochastic, adaptive systems operating through millions of parameters optimized on empirical data. They are not deterministic, and their behaviour remains difficult to predict. No mathematical method can guarantee absence of harmful outputs, and statistical accuracy alone does not imply robustness. Building reliable AI requires control theory based on these principles:

- model ai as nonlinear dynamic systems to analyse stability, convergence and response to perturbations (e.g. adversarial attacks);
- use formal logic and techniques like model checking, fact checking or theorem proving to verify a model's compliance with specific properties;
- apply robust optimization after defining uncertainty sets, obtaining stable solutions even with noisy or incomplete data.

A further problem neither ethics nor regulation can solve is interpretability. While techniques like SHAP (SHapley Additive exPlanations) or LIME (Local Interpretable Model-agnostic Explanations) exist, they are not universally applicable. Some companies develop verifiable frameworks for edge computing, IoT or critical systems, but the optimal solution remains to integrate interpretability during model design. Working with AI requires a paradigm shift:

- from the "move fast and break things" culture that dominated tech, to a culture of precaution and robustness,
- from ethics as checklist to mathematical principles integrated into code,
- from empirical validation to formal model certification.

Unfurl the sails

The following examples come from the experience of Ottante (Beta 80 Group) and have been chosen with respect to the priorities of the Polish Government. They allow us to better understand the real benefits of Artificial Intelligence in our daily life.

Energy Sector

Today's energy companies face mounting pressure from stringent environmental regulations, geopolitical instability, and the stochastic nature of renewable energy production. The transition toward decarbonization and the integration of renewables demand significant capital investments and operational adaptation. If approached strategically, these challenges can be transformed into substantial business opportunities. Here are some examples:

Figure 1
Energy production forecast 1
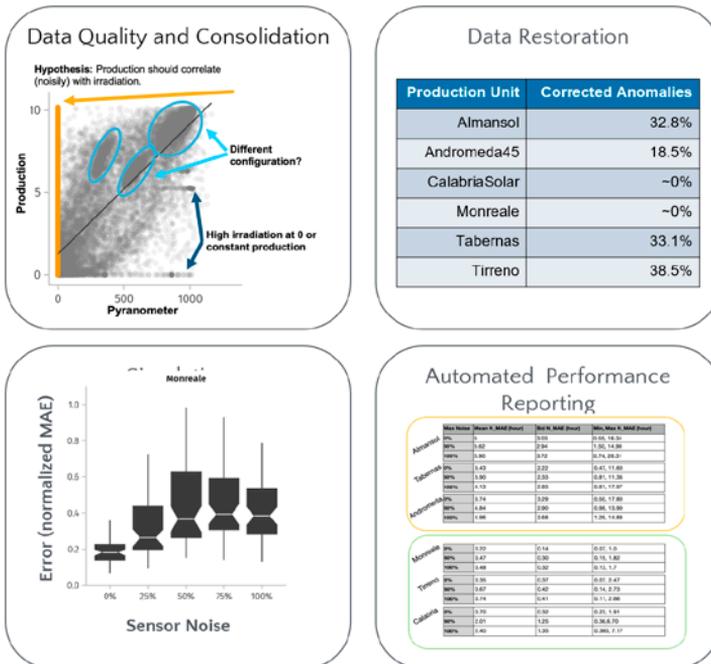
Source: own research.

The SunMap application employs advanced analytics to identify and prioritize optimal locations for renewable energy installations based on key performance metrics. For solar farm deployment, it evaluates sites with maximal solar irradiance, while for wind energy generation, it assesses areas exhibiting consistent high-velocity winds, minimal topographic obstruction, terrain suitability, and Day-Ahead Market production forecasts of a network of six solar farms (total ~250 MW). The result? A proven 30%+ increase in production compared to conventional solar and wind farms.

Figure 2
Efficiency of trading algorithms 1
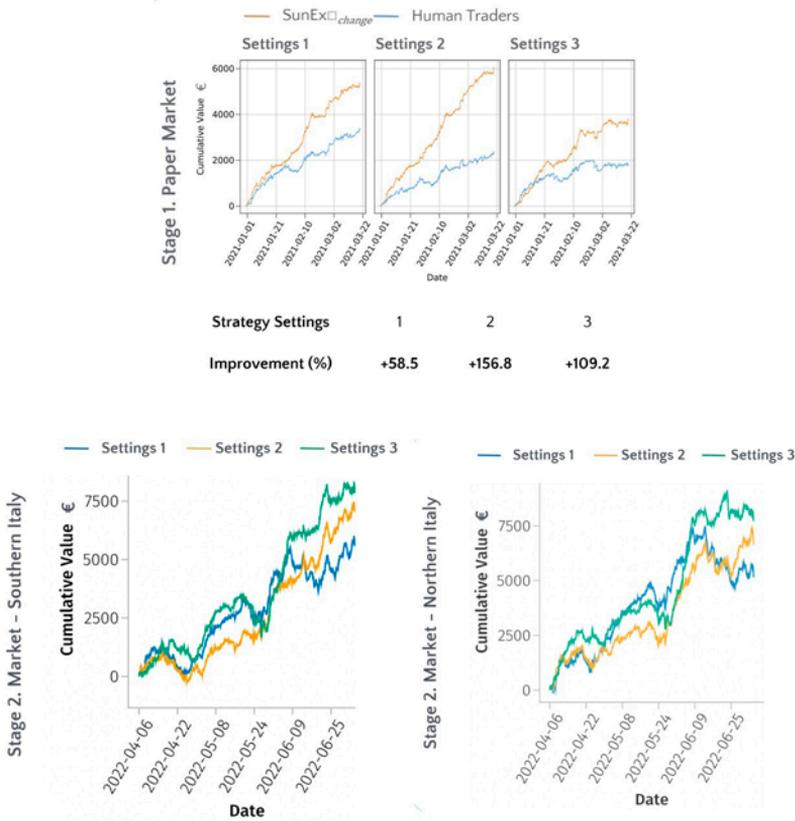
Source: own research.

The SunMachine solution empowers energy market operators with network-level intelligence, providing a holistic view of grid dynamics, demand patterns, and real-time opportunities. It also optimizes self-consumption. Unlike static models, these continuously evolving algorithms learn and adapt,

ensuring strategic decisions are always informed by the latest market shifts. It is being applied to both renewable and traditional energy sources. SunMachine has been adopted by a market leader in electrical energy production in Europe. With predictive analytics and live monitoring, the operators gain continuous insight into energy flows, anticipate imbalances before they occur and reduce costs by an average of €3/MWh while optimizing dispatch efficiency. For smart home-integrated consumers, the benefits are even greater. The SunMachine platform drives self-consumption rates from 30% to 85%, minimizing grid dependence and maximizing ROI for both end users and energy providers.

SunExchange is a trading assistant for energy markets which grows alongside the operators' trading strategy and adjusts parameters via "Human-in-the-Loop" oversight. By harnessing machine learning, it analyses vast datasets to uncover hidden patterns and define optimal strategies for day-ahead/intra-day trading. SunExchange has been adopted by an Italian energy-trading office with a 15-year successful history. The result is an average of +100% profit against the client's strategies. Other early adopters have achieved up to 150% increased trading gains, turning market fluctuations into consistent revenue growth.

Healthcare Sector

Artificial Intelligence is rapidly transforming the healthcare sector by enhancing diagnosis, treatment, and overall patient care. With Life 1st Suite, Beta 80 Group serves 90% of the emergency response centres in Italy. Life 1st tools revolutionized the emergency/urgency sector managing medical response and supporting the reorganization of non-urgent care (European Emergency Number 116117) – essential given the severe shortage of medical personnel.

The Suite includes *DinamiCall*, *Punto*, and *Smart Hub* applications. *DinamiCall* is a web application connecting 999 or 112 call centre operators with up to 8 callers, doctors, policemen, and others. By accessing the caller's mobile, the operator can view incident scenes, send photos/videos, and translate conversations in real-time across 30+ languages. *Punto* is a vehicle fleet optimization system that plans routes by calculating optimal paths with minimal ambulances while respecting multiple constraints: patients to transport, equipment, schedules, secondary transports, etc. The routes are updated in real-time, suggesting the most suitable vehicle. The *Smart Hub* mobile application is installed in ambulances to manage patient retrieval, access patient's medical record, and track transports to healthcare facilities.

The chart illustrates solutions developed by Beta 80 Group, some of which are cross-cutting or complementary to platforms for Public Safety (Civil Protection, Fire Department, Police).

Figure 3

Suite Life 1st system for managing emergency numbers 997, 998, 999, 112 and 116116 with 6 specific software supports and 3 mobile applications
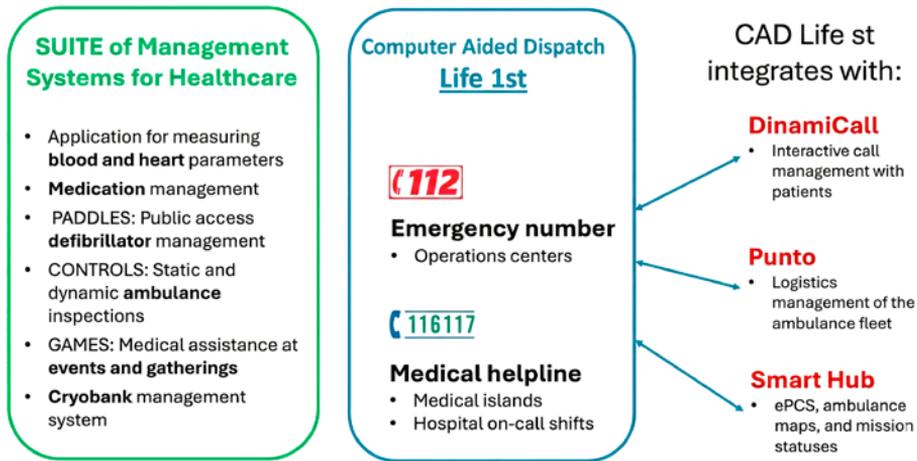
Source: own research.

Life 1st also connects to a family of tools like the *Predictive drug supply management system* monitoring inventory and low-stock medications, *Cryobank* management system, *G.A.M.E.S.* (event medical support platform) and *P.A.D.D.L.E.S.* (public defibrillator distribution systems). These tools, enhanced by AI's predictive capabilities, become crucial in mass emergency management. Processing signals from emergency call centres and other sources allows tracking risk evolution, anticipating crisis situations, and timely public alerts.

In the Calabria Region, *Nanotechnology-engineered slides* made from blood drops were integrated with an Artificial Intelligence algorithm trained on biobank data. The algorithm analyses blood samples to identify individuals at risk of developing cancer. The solution is low cost and enables preventive screening in high-risk areas. The *Preventive Medicine* mobile app helps users assess the severity of their health condition and performs triage through guided interviews and vital signs. Installed on smartphones, it addresses the critical challenge of overcrowding in healthcare facilities. Overcrowding is an important social problem since it erodes the quality of service, fuels patient frustration, undermines emergency rooms, and increases violence against medical staff.

Conclusion

Artificial Intelligence has no home port, nor a charted course: it sails uncharted waters, where the stars of human ingenuity guide its compass. Its immense potential makes it hard to imagine any social or economic sphere remaining untouched and it is radically transforming how we work, study, research, and relate. However, we cannot allow AI to make strategic decisions in place of human wisdom that's kept our species afloat through centuries. Education systems must highlight humanity's unique, irreplaceable values, nurturing curiosity and all the skills to steer this change. Ethical principles must be embedded in algorithms and language models – regulations alone will not suffice. Widespread knowledge, supported by practical examples, will best prevent deviations and mishaps.

Artificial Intelligence serves as a transformative force in shaping a sustainable future, driving progress across scientific research, healthcare, energy, hardware, finance, and beyond. While AI holds immense potential to address systemic challenges – from conflict resolution to poverty alleviation – it remains incapable of instilling intrinsic human values such as integrity, accountability, solidarity, and equitable compensation. These principles must be defined and upheld by humanity itself. At Ottante, our scientific team develops algorithms anchored in advanced mathematical frameworks, prioritizing reliability, robustness, and rigorous empirical validation. Meanwhile, Beta 80 Group operates under a strict ethical mandate, reinvesting 100% of profits into innovation and development. This commitment to responsible growth has been instrumental in the company's sustained expansion. As Project Manager (officially designated as Service Manager), my role is not to command but to empower – acting not as the ship's captain, but as the wind in its sails, accelerating teams toward their shared objectives.

Let me conclude with the story of Deborah Berebichez, quantum physics professor at Stanford University, born in a poor Mexican village. As a child, she loved mathematics – her parents bade her stow this passion below deck, lest it scare off potential suitors. Forced into "feminine" philosophy studies, after four years she won one of Stanford's two physics scholarships for international students. Then she realized she couldn't graduate – only the first two years were covered. She talked to Rupesh, the assistant to the physics department Chair. The department Chair challenged Deborah: if she could master an advanced

math textbook and pass the exam within two months, he would waive her first two years, letting her start directly from the third. Rupesh supported her daily studies, urging: "99% of success in life is perseverance and work – I believe in you". Deborah passed the exam and tried to repay Rupesh, but he shared that he came from a poor Himalayan village in Darjeeling with no schools. Every Sunday, an elder would take him, his parents, and siblings up a mountain to teach them English, math, and the Indian tabla. When Rupesh's parents offered payment, the old man said: "The only way to repay me is to do the same for someone else in the world".

Our invitation to all of you is: "99% of success is perseverance and work – let's make it happen together".

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