Polish Digital Resilience Agenda 2040 – a model of strategic preparedness for the antinomies of digitalisation

Overview of scenarios concerning the impact of automation and digitalisation on strategic areas:

- social and health policy,
- education and science,
- energy,
- the economy and business competitiveness,
- the Internet and IT

Social and health policy Scenario: Hyper-caring system

Advancing digitalisation and the ultra-efficiency of IT systems will lead to the emergence of a decentralised yet all-encompassing mechanism of social control, in which algorithms and people create a new form of power resembling a quasi-religious system, where the very decision-making process acquires the qualities of the sacred. Society will accept a "new rationality" in exchange for relative convenience, surrendering its agency and individualism to a technocratic system which, through gamification, AI surveillance and a "data for service" model, will produce deep divisions. The pauperisation of the middle class and the privatisation of public systems will create mass dependence on corporate digital infrastructure, the maintenance of which will become a priority outweighing even the basic energy needs of households. This transformation, unfolding between 2025 and 2040 through a series of seemingly rational decisions taken in response to crises, is characterised by a "ratchet" mechanism—each crisis legitimises new control measures that are never rolled back, creating a system that is stable yet fragile in the face of shocks.

Social and health policy Scenario: Hybrid reality

The failed integration of digital public systems, resulting from attempts to combine old solutions instead of building new ones, leads to the emergence of a dysfunctional "mock-up of the digital ideal", where the gap between the system’s declarations and reality forces citizens to develop a semi-legal second-circuit economy reminiscent of the realities of communist-era Poland. The transformation of the welfare state by 2040 has three phases: the energy crisis as a catalyst for benefit integration (2025–2030), the AI revolution in healthcare (2030–2035), and the middle-class crisis leading to the emergence of cooperative local platforms and micro-production as a response to automation (2035–2040).

The system consolidates around a "digital citizen wallet" integrating energy limits, social benefits, access to an AI doctor, mental health status and the level of social trust, creating a three-tier stratification.

Social and health policy Scenario: Digital judo

A proactive strategy of adaptation to the inevitable processes of automation and digitalisation, based on the classical martial-arts principle of using the opponent's force. The transformation unfolds through five strategic phases, in which each crisis becomes a catalyst for positive change:

- the energy crisis drives the construction of digital infrastructure through the controversial "IT First" doctrine,
- demographic pressure leads to a "Healthcare 2.0" revolution with AI as the first-contact physician (70–80% of cases),
- automation finances the revolutionary "Development Dividend", replacing unproductive jobs with active participation in personal development,
- the epidemic of digital addictions triggers "Algorithm Prohibition", restoring control over technology,
- geopolitical fragmentation opens unique specialisation niches such as Polish "rapid-response medicine".

Key innovations include the Development Dividend, which requires social activity instead of passive welfare, and radical regulations banning manipulative algorithms and guaranteeing the right to a "boring interface".

Social and health policy Scenario: Crisis convergence

An unnoticed transfer of power from democratic institutions to technology corporations leads to the emergence of a "neo-feudal illusory democracy": a system with formal democratic institutions but real power vested in algorithms and corporations operating beyond democratic control, with dystopia hidden behind a veil of convenience, the promise of efficiency and apparent necessity. The transformation begins in 2025–2030 with the convergence of three systemic crises: an energy failure introduces the "IT First" doctrine; the pauperisation of healthcare follows, as rising IT costs absorb the budget intended for real care; and the ideology of the "lean state" replaces social workers with AI chatbots, while the savings are swallowed up by the costs of IT systems. In the 2030–2035 phase, corporations cease to be service providers and become arbiters of access to services, taking control of data and creating a three-tier model, while the Social Bonus System evolves from positive motivation into a punitive-segregation mechanism, and "Soma 2.0"—mass pharmacological pacification—reduces protests and individualises structural problems. By 2040, a transformation takes place from civic agency to digital subjecthood, with new planes of inequality.

Education, schooling and science Scenario: Her Majesty Emergence

Poland's transformation by 2040 into an innovative knowledge society through the creation of an emergent ecosystem based on seven complementary pillars:

- the individualisation of education using AI,
- comprehensive talent management,
- deregulated entrepreneurial universities,
- the commercialisation of research,
- an innovation economy in strategic sectors, and
- hyperconnectivity as a mechanism for democratising knowledge.

The scenario is characterised by the imperative of systemic awareness—no reform can be implemented in isolation, but must take account of repercussions across the entire ecosystem. The transformation is driven by the convergence of three key macroeconomic trends: the automation of cognitive processes (AI, machine learning), the digitalisation of social infrastructure (hyperconnectivity), and the globalisation of talent markets.

Education, schooling and science Scenario: Stratified worlds

Digital transformation, instead of democratising opportunities, becomes a machine of lasting social polarisation. The catalyst of the breakdown is the destruction of public education through the commercialisation of content, the exodus of teaching staff and regulatory asymmetry, which turns the public school into a social-care institution offering only basic literacy.

The result is the crystallisation of a three-class society with dramatically limited mobility. The scenario overturns three myths of the contemporary economy (automation as a creator of jobs, access to education as a guarantee of equal opportunity, and market self-regulation leading to development). It warns that without conscious corrective action, Poland will become an example of a "default future", where meritocracy turns into an aristocracy of talent, and the stabilisation of inequality through social transfers such as Universal Basic Income prevents social explosions but entrenches fundamental structural divisions.

Education, schooling and science Scenario: Phoenix from the ashes

A dynamic innovation economy rises from the ruins of a completely degraded public education system and uncompetitive universities through an "extra-institutional innovation ecosystem" driven by corporations, startups and individual creators. The engine of the breakdown is a complex crisis.

The system does not collapse completely, but undergoes a pragmatic transformation. The mission of the public school is redefined from educational to care-and-socialisation oriented. The priority becomes ensuring a safe environment for children during their parents' working hours, which constitutes key infrastructure for the labour market. The curriculum is reduced to "minimum literacy".

Paradoxically, a dynamic knowledge-based economy grows on the ruins of the public system. Innovations arise not thanks to the state, but despite its inefficiency, on the basis of three autonomous ecosystems.

Education, schooling and science
Scenario: Factory of obedience

By 2040, Poland falls into a low-level equilibrium trap through the introduction of educational Taylorism, transforming education into the mass production of obedient executors. This process is accompanied by social stratification based on the "escape" of elites into commercial and individualised forms of education.

How is the development of an innovation economy possible under conditions of a systemic crisis in education and science? The answer lies in understanding that innovations can arise outside traditional institutions, based on narrow elites, global flows of knowledge and the privatisation of the research function.

The process begins with the introduction of the "Great Standardisation"—based on Taylorist principles of scientific management, in which the educational process is reduced to repeatable procedures. The final battle of the old system.

Energy Scenario: Window of resources and potential

Reducing the share of coal requires massive investments of PLN 800–1,200 billion. It is essential to harness domestic geothermal potential capable of covering 70% of household heat demand, as well as intelligent orchestration of the energy mix by AI systems, and deregulation of the energy market with the implementation of blockchain platforms. Delivering this scenario requires coordinated action in three time phases and leads to the creation of 120,000 new jobs in green energy while simultaneously reducing total system costs.

The Polish energy sector has a chance not only to survive the coming storm of transformation, but to emerge from it strengthened—as a modern, resilient and sovereign sector driving the country's economic development in the 21st century.

Energy Scenario: Digital foundation of development

By 2040, digital infrastructure becomes the foundational layer for physical energy assets, enabling the real-time balancing of millions of variables, from prosumers and wind farms to smart grids equipped with AI and digital twins. Poland has a chance to become a regional EnergyTech competence hub by developing endogenous grid-control algorithms, P2P trading platforms and cybersecurity solutions, translating into technological sovereignty and export potential worth hundreds of millions of euros. The state retreats from micro-management in favour of regulatory minimalism—it defines goals instead of technology mandates, introduces regulatory sandboxes and neutral auctions. The greatest challenge is a skills gap of 150,000–200,000 specialists, which must be filled through mass reskilling programmes, alongside rigorous investment discipline directing capital exclusively to projects with high rates of return.

Energy Scenario: Short blanket

The Polish energy sector has found itself in a "digital instability trap". The lack of interoperability generates significant losses, and a deficit of 5,000–7,000 OT cybersecurity specialists exposes critical infrastructure to attacks amid growing dependence on variable renewable energy sources. The transformation requires a three-phase roadmap (2025–2040) with a total cost of PLN 400–900 billion. Without the immediate launch of the programme, it will be impossible to raise the share of renewables above 35% without risking blackouts, to deregulate the market effectively, to harness the potential of V2G, or to attract high-tech industry capable of generating 50,000–100,000 jobs. The costs of inaction greatly exceed the required investments, and the window of opportunity to avoid systemic disaster will close within 2–3 years.

Energy Scenario: Systemic instability

The scenario shows a mechanism in which automation and digitalisation processes—instead of acting as stabilisers of the energy transition—turn into catalysts of destabilisation. This phenomenon, defined as "digital fragility", results from the disproportion between the physical expansion of renewable-energy infrastructure and the immaturity of control systems, lack of interoperability, and erosion of digital competences. The scenario identifies seven critical elements forming a spiral of vulnerability which, under stress conditions, may lead to cascading failures on an unprecedented scale.

Modernity is not measured by the number of installed photovoltaic panels, but by the intelligence of the system that manages them. The Polish energy sector faces a choice: either it makes a qualitative leap in data management and system architecture, or it will drown in the chaos of its own complexity, paying the price in the form of low reliability and astronomical costs.

Economy and business competitiveness Scenario: The Polish paradox

Despite technological progress that was supposed to eliminate unnecessary work, by 2040 Poland faces an invasion of regulation-based "pseudo-work". Digitalisation triggers three mechanisms of middle-class erosion that may shrink it from 55–60% to 25–30% of the population: the automation of medium-skilled positions, platform models displacing local intermediaries, and capital concentration in technology corporations, which calls for a response in the form of selective deregulation. The key to success is to use Poland’s geographical position to become a "hyper-intelligent bridge of Eurasia" through infrastructure projects combined with predictive AI intelligence in logistics, capable of reducing transport costs by 15–20% and handling 20–25% of land trade. A critical threat is the arrival of the quantum era, which could break current cryptographic systems by 2035.

Economy and business competitiveness Scenario: Between automation and the social value of work

The metamorphosis of the Polish economy, in which traditional paradigms of the industrial era give way to new forms of organising life and work, rests on three pillars: data as the raw material of the 21st century, network effects causing value to grow exponentially with the number of users, and the ability to connect dispersed resources through digital platforms, where owning physical assets loses importance in favour of controlling nodal points in value-distribution networks. The transformation begins with an economic crisis involving an 8–12% GDP decline and unemployment of 15–18%, which paradoxically becomes the necessary impulse forcing companies into radical automation and breaking institutional inertia.

Polish companies should adopt one of four success archetypes and carry out three strategic imperatives: transforming human capital into the architecture of talent ecosystems, building modular digital infrastructure that ensures technological agility, and fully integrating ESG criteria as the axis of strategy, so that Poland can become a laboratory of the future combining technological efficiency with social sensitivity.

Economy and business competitiveness Scenario: The paradox of the Polish transformation

Poland, as a next-generation hybrid adaptive economy, becomes an integration platform combining traditional products with global digital ecosystems and an "agile" society capable of rapid reconfiguration. Digitalisation is the context here for redefining Poland's role on the basis of three pillars: traditional quality, the digital layer and speed of adaptation, without the need to be first in every technology.

The "Agility 2.0" strategy integrates physical products with the digital layer, where the product becomes an anchor point for building durable customer relationships and a "living laboratory" for new solutions, while local resource inventories reveal non-obvious competitive advantages. The breakthrough is a new social contract redefining the value of work: by 2040, 35–40% of those employed work in non-standard forms, 25–30% have multiple income streams, and only 30–35% remain in traditional employment. There is a shift from a hierarchy of occupations to a pluralism of values, with the revaluation of physical work and the emergence of a system of "prestige through social contribution".

Economy and business competitiveness Scenario: Techno-polarisation

The scenario describes mechanisms of redistributing power from the middle class to technological oligopolies. They lead to the transformation of the Polish economy into a neo-feudal system with the concentration of resources in the hands of a narrow elite, the atomisation of society, and the emergence of local organisation as a defensive reaction. The economy is driven by tension between the economy of scale (automation reducing the costs of standard processes) and the economy of uniqueness (a premium for goods with a strong manual component and local history). The key message is that Poland’s competitiveness will not depend on the degree of automation, but on the effectiveness of building an alternative model based on local immobile resources, craft knowledge impossible to automate, cooperative networks resistant to platform dominance, and redundancy against shocks. Poland can become an "archipelago of uniqueness" in an ocean of global standardisation, with a post-digital strategy balancing global efficiency with local resilience and advanced technology with the recovered value of human work.

Internet and IT Scenario: Towards an integrated digital-biological infrastructure

By 2040, a transformation of digital-biological integration will take place, in which digital identity will become the layer-zero protocol of post-industrial society. Health diagnostomats will take over 85% of initial diagnoses, transforming medicine from reactive to predictive. Cybersecurity will attain a status equal to national defence. The quantum cryptographic revolution will force a global migration of infrastructure, simultaneously creating 50 million new jobs while eliminating 400–800 million positions through automation. The convergence of genomics, synthetic biology and artificial intelligence will create a bioeconomy accounting for 40% of global GDP. Without coordinated international action and mechanisms of democratic control, the world is heading towards digital feudalism, in which the algorithmic technological advantage of elites will lead to an unprecedented concentration of power and the erosion of basic humanist values.

Internet and IT Scenario: Convergence of seven vectors

The ongoing civilisational transformation based on new technologies is leading to a fusion of the digital and physical spheres. A key catalyst of change is the widespread deployment of health diagnostomats. This makes it possible to shift 60–70% of diagnostics into the home, reducing healthcare costs by 25–35%, but it requires a radical transformation of the state's cybersecurity policy.

At the same time, convergence is taking place around self-sovereign identity (SSI) and digital product passports (DPP), leading to the emergence of three supranational regulatory blocs and the risk of Internet fragmentation.

Internet and IT Scenario: CyberTransformation

Strategic investments in cybersecurity and digital competences lead to a fundamental reconfiguration of the relationship between the state, citizens and technology through the progressive integration of digital identity, the automation of administrative decisions, and the convergence of biological systems with digital infrastructure.

The transformation proceeds from sectoral standardisation and the building of competence clusters (2025–2030), through the centralisation of digital identity and an analytical revolution in public services (2030–2035), to the mass adoption of brain-computer interfaces, the dominance of the metaverse, and the redefinition of ownership from a binary model to an access economy based on temporal and contextual sharing (2035–2040). The system achieves unprecedented operational efficiency and predictive capabilities at the cost of total monitoring of citizens' lives, creating a fundamental paradox between the maximisation of public services and the erosion of privacy and individual autonomy under conditions of ubiquitous algorithmic surveillance.

Internet and IT Scenario: Reconfiguration

The progressive erosion of the regulatory capacities of nation-states leads to an unprecedented concentration of power in the hands of technology corporations. They establish their own standards and take control of critical infrastructure. The key turning point is the introduction of the "Privacy 2.0" system (2035–2038)—a redefinition of privacy from a fundamental right into transparency based on blockchain, biometrics and algorithmic social scoring, resulting in the emergence of a digital panopticon penetrating every aspect of existence. The transformation leads to deep social stratification. It is a dark vision of the gradual transformation of democratic society into a corporate digital dystopia, where every step towards technological "modernisation" paradoxically leads to deeper enslavement of human beings by algorithms and megacorporations.

"This battle is already lost, but it is only the second; we will still have time to win the next one."

Gen. Louis Desaix to Napoleon Bonaparte during the Battle of Marengo, 14 June 1800

Polish Digital Society http://cyfryzacja.org

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