POSITION PAPER

REGULATING ARTIFICIAL INTELLIGENCE WITH FORESIGHT

A PROPOSAL FOR SHAPING THE DIGITAL SWITZERLAND OF TOMORROW

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INNOVATE SWITZERLAND

A SWISS APPROACH TO INNOVATION AND STABILITY IN THE ERA OF DATA- AND ALGORITHM-BASED SYSTEMS

NEW STRUCTURES FOR DEALING WITH ARTIFICIAL INTELLIGENCE AS A BASIC TECHNOLOGY

The launch of ChatGPT as the first open-access application based on generative artificial intelligence has developed into a “Sputnik moment” – a technological breakthrough with global implications for business, science and society. For the first time in the history of technology, people have direct access to applications with artificial intelligence (AI) that can automatically create texts, videos, images and software to take over tasks in both personal and professional life.

Thanks to its wide range of uses, generative AI has quickly become established in the public and in companies. Along with its potential come questions about the quality of results, the use of training data and compliance with ethical standards regarding opportunities for deception or discrimination. The high speed of adaptation has rendered the ability to ensure stable, reliable and trustworthy AI systems particularly relevant.

Today, there is an international consensus that regulatory frameworks and global agreements are needed to reconcile the added value of the new basic technology with responsible management, especially when it comes to using Large Language Models (LLMs). In its desire to position itself as a first mover, the EU has adopted the "AI Act", the world’s first comprehensive AI law, which sets out the legal framework and requirements for AI systems in the European market. This law largely adopts a risk-based approach by distinguishing between unacceptable, high, limited and minimal risk AI systems and imposing corresponding obligations and prohibitions on providers, users and third parties. Certain AI-based practices, including social scoring, cognitive behavioural manipulation and biometric real-time remote identification systems for law enforcement purposes in publicly accessible spaces, are altogether prohibited under the "AI Act" in the EU.

The US created a voluntary framework for organisations at the end of 2023 with President Biden’s executive order on the secure development and use of artificial intelligence, which aims to create a political roadmap for an AI bill in Congress. The primary objectives of the executive order are protecting privacy and safeguarding citizens’ rights. The G7 countries also reached an agreement on voluntary codes of conduct for AI, resulting in what is now known as the Hiroshima AI Process. Both the national and the supranational activities show an awareness and broad acceptance of the key dimensions for shaping the responsible use of AI systems: transparency, privacy, data protection, discrimination, manipulation and liability are at the heart of the projects and debates.

A SUFFICIENT LEGAL BASIS IN SWITZERLAND

Switzerland is addressing the topic through its involvement in the Council of Europe and the Federal Council’s mandate to Federal Department of the Environment, Transport, Energy and Communications (DETEC) to draw up an overview of possible regulatory approaches. As a successful economic, financial and research centre, as well as a host country for many international organisations, Switzerland is well positioned to play a global role in this new era. However, legal certainty for companies and organisations and societal trust are needed to increase the country’s competitive advantages and attractiveness as a location.

For Switzerland, this begs the question of how it will position itself in the field of tension between different regulatory approaches in the international environment. This means that AI should not be considered in isolation, but rather in line with data use strategies and the underlying digital infrastructure. As a country, there is also a desire for Switzerland to maintain strategic capacity for action in digital applications, the use of data and AI, which requires a balance between control, innovation and international interconnectivity. This interaction will form the basis for sustainable growth in a digital economy and society.

Based on analyses and reports by experts from public and private organisations, two key points have emerged for Swiss AI regulation:

- The existing laws and proposed amendments provide a largely sufficient basis. The application of AI in Switzerland does not operate in a legal vacuum. Due to the technology-neutral nature of Swiss law, existing legal requirements (such as financial market regulations, data protection laws, copyright laws or fair-trading laws) must also be adhered to when using AI. Switzerland should subject its existing body of laws to a stress test before pursuing horizontal AI regulations – even though these cannot be categorically ruled out. Targeted adjustments and additions, such as in anti-discrimination law and copyright law, are conducive to national regulation.

- Technological neutrality and principle-based regulation remain prerequisites for innovation: The legal framework is designed to be “neutral” concerning technological advancements and business models, meaning that they should neither be actively promoted nor hindered. Within the framework of principle-based regulation, lawmakers refrain from establishing specific rules for individual cases but rather formulate goals or principles. This approach has proven effective in Switzerland, and it ensures flexibility for the next generation of technologies.

With these prerequisites, Switzerland can continue developing its attractiveness as a location for innovation and the development of international standards in the age of data- and algorithm-based systems. Due to the scope of the European “AI Act,” it is expected that companies in Switzerland will also adhere to its requirements. This should be taken into account when adapting Swiss law: Coordination with European regulations is crucial in order to avoid the emergence of double standards, which would be associated with legal uncertainty and increased compliance costs for companies. This applies just as much to markets like the USA, which are equally significant for Switzerland.

DIFFERENTIATION THROUGH TARGETED OPPORTUNITIES, SECTOR SPECIFICITY AND ARCHITECTURAL SYMMMETRY

The existing legal framework and the proposed changes to it provide a scope for specific guidelines and action regarding AI systems on a practical level. This includes obligatory notions of self-declaration, self-commitment and corporate responsibility. Three approaches to these can be discussed.

- Targeted opportunities: In addition to identifying risks, focusing on opportunities can help to focus on positive potential without neglecting risks. Conversely, this requires the definition of clear indicators that quantify these opportunities – for example, by assessing the increased productivity for users, companies, society or government.

- Sector-specific guidelines: Dealing with AI from a practical perspective shows the major challenges entailed by cross-industry comprehensive regulation, as different requirements emerge depending on the field of application, from medicine to communication. Accordingly, industry-specific specifications are a prerequisite for practical and feasible application. These can be developed by industry associations or cross-industry initiatives.

- Architectural symmetry: The future regulatory architecture ideally needs to be able to address the full technological architecture of AI. On this last point a distinction can be made between digital infrastructure, data use, language models and the actual application. Each of these layers works according to its own mechanisms and requires specific responsibilities and obligations – whether they are the providers of the language models, the data managers or the developers of applications. This kind of regulatory architecture not only considers the complexity of AI systems, but also helps industry and government actors to develop a common language and common understanding.

When dealing with the high complexity of comprehensive regulatory attempts, which can lead to high administrative burdens and possible competitive disadvantages especially for SMEs, voluntary corporate responsibility must be strengthened. In particular, an approach that is tailored to each industry helps establish responsibilities and determine rules that ensure safety for all parties involved, while not hindering innovation but rather strengthening it. This strategy is consistent with the international agreements of Hiroshima and the Council of Europe. In general, regulation needs to be strongly grounded in scientific knowledge and international expertise. Switzerland can aspire to play a leading role in digital foreign policy in the international derivation of an AI classification.

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REGULATING ARTIFICIAL INTELLIGENCE WITH FORESIGHT

AI AS BASIC TECHNOLOGY

BROAD SPECTRUM OF AI APPLICATIONS FOR BIG DATA ANALYSIS, FORECASTING AND CONTENT GENERATION

- Automation of repetitive tasks along value chains of almost every industry
- Increased customer benefits due to consistent data utilization
- Evolving digital business landscapes due to AI platforms

ETHICAL QUESTIONS FOR BUSINESS, SOCIETY, AND POLITICS

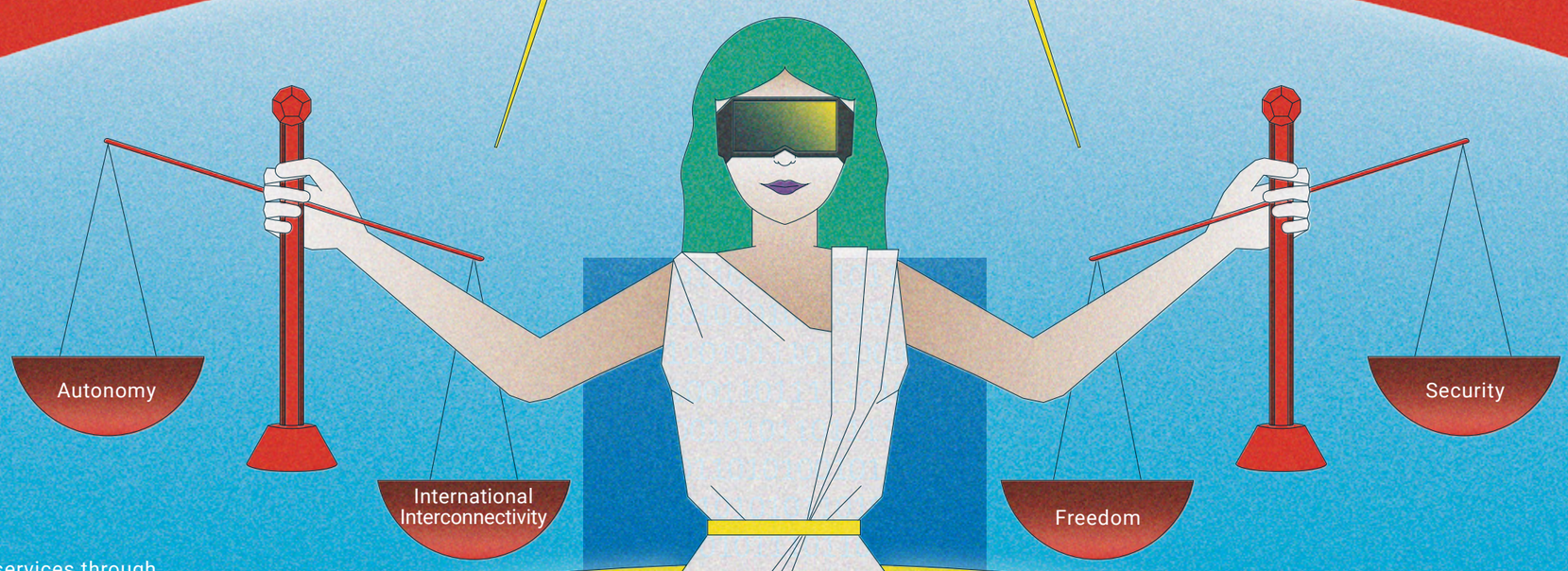
- Ensuring transparency and guaranteeing the protection of intellectual property
- Preventing discrimination and creating fair access to digital solutions and tools
- Promoting decision-making abilities regarding manipulation and deception

INTERNATIONAL COMPETITION BETWEEN ECONOMIC REGIONS DUE TO DIFFERENT REGULATIONS

- Increased complexity for internationally operating organisations in meeting different requirements
- Need to formulate independent regulatory strategies for smaller countries
- Potential increase in bureaucracy due to dense regulations

PRESENT LEGAL FRAMEWORK IN SWITZERLAND

The use of AI does not bring entirely new legal challenges.
Existing Swiss regulations on transparency, privacy, data protection, discrimination, manipulation, and liability provide a largely sufficient basis.
Technological neutrality and principle-based regulation remain prerequisites for innovation.



TARGETED OPPORTUNITIES
Understanding Risks - Seizing Opportunities

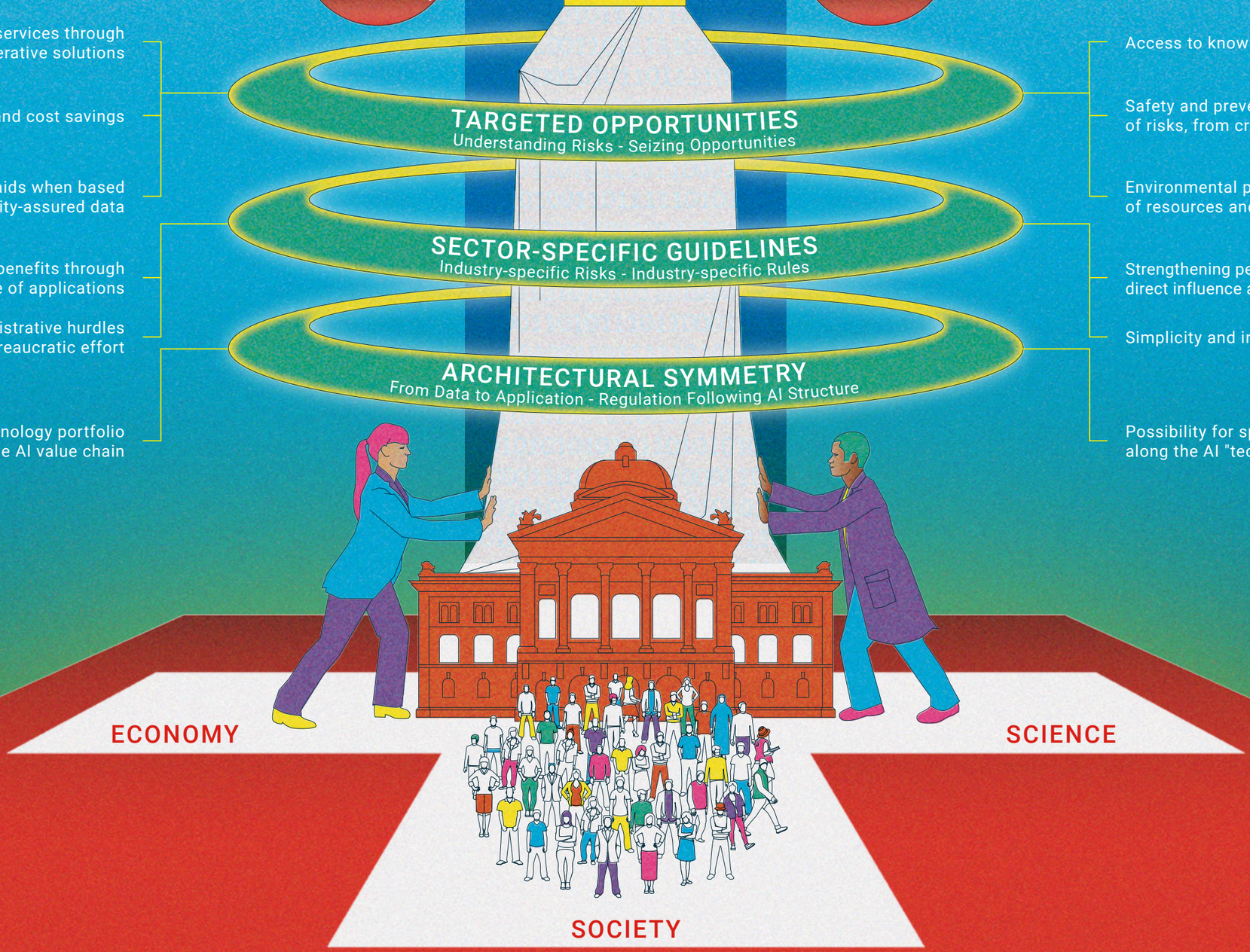
- Innovative products and services through precise analysis and generative solutions
- Efficient processes and cost savings
- Fairness through decision aids when based on quality-assured data
- Access to knowledge for tailored education
- Safety and prevention through early detection of risks, from crime to health
- Environmental protection through intelligent use of resources and precise land management

SECTOR-SPECIFIC GUIDELINES
Industry-specific Risks - Industry-specific Rules

- Maximisation of AI benefits through optimal use of applications
- Reduction of administrative hurdles and bureaucratic effort
- Strengthening personal responsibility through direct influence at industry level
- Simplicity and increased trust for users

ARCHITECTURAL SYMMETRY
From Data to Application - Regulation Following AI Structure

- Mapping the entire technology portfolio of the AI value chain
- Possibility for specific regulatory adjustments along the AI "technology stack"



PRIORITIES FOR A FORWARD-LOOKING REGULATION OF AI

REGULATION
Review and adjustment of existing laws along known risk dimensions, as well as additions to anti-discrimination law and copyright law.

Establishment of internationally coordinated security measures for the use of AI in critical infrastructure such as the financial, energy, and healthcare sectors.

RESPONSIBILITY
Development of international AI standards and certifications by Swiss universities and global standardisation organisations based in Switzerland.

Consideration of ecological and social criteria in the assessment and regulation of AI systems as a possible distinguishing feature of Switzerland.

KNOWLEDGE
Ensuring a solid capability to assess AI for informed decision-making in business, politics, science, and society.

Establishment of real-world test environments for AI systems to facilitate early optimisation of new applications and for continuous evaluation of existing regulations.

TRUST
Establishment of responsible self-declaration by organisations in handling AI to ensure transparency, traceability, and clear accountability.

Positioning Switzerland as a leading marketplace for quality-tested datasets through the establishment of precise standards.

PRIORITIES FOR A FORWARD-LOOKING REGULATION OF AI

I. Adjusting national regulation pragmatically whilst considering international developments.

A systematic review of existing laws as regards the risk dimensions of AI can help to prevent future abuses. This includes, among other things, the partially regulated anti-discrimination law and copyright law. This proactive risk-based approach should be complemented by reactive, claims-based elements to ensure responsible action during the development stages. Applying a risk-based approach to an AI governance framework that differentiates between high- and low-risk scenarios supports innovation and provides protection where it is most needed. This helps to align the requirements of different jurisdictions and areas and promote the interoperability and compatibility of AI systems and services.

II. Creating knowledge and facilitating decisions.

The development of the future regulatory framework and responsible uses of AI systems requires sound judgement regarding technology and its applications in politics, business, science and society. Only with the necessary knowledge can the right framework conditions be created today for the use of artificial intelligence, which will have a substantial impact on the lives of all people. To this end, educational institutions, companies and the public sector have a shared obligation to familiarise decision-makers and the general public with the relevant basics.

III. Protecting critical infrastructure with confidence.

Security measures for the deployment of AI in the context of critical infrastructures such as energy, transport, healthcare and finance need to be defined and implemented to ensure their resilience. This can prevent or mitigate any negative consequences of AI failures or misuse. They are also important for increasing the public's and policy-makers' confidence in AI systems and services, which in turn enables them to be used in a way that adds value. International coordination is advisable in this regard.

IV. Focusing the organisational governance on transparency and responsibility.

The existing possibilities for self-declaration by organisations along the entire technology architecture when using AI – beyond AI labels and watermarks – need to be developed substantially. This will enable requirements for transparency and meaningful traceability to be met for specific sectors and target groups. Responsibilities and accountability in the organisations need to be defined and made binding.

V. Defining standards for evaluation and certification of AI.

Technical and scientific foundations of practical AI governance in organisations are indispensable for establishing and enforcing future framework conditions. These include tools and methods for assessing and certifying AI systems and services. With its world-leading universities and the international role of Geneva with its standardisation organisations, Switzerland is predestined to play a leading role when it comes to international coordination.

VI. Enabling real-world test environments and promoting public-private partnerships.

Companies and the public sector alike should be able to test and validate new AI applications in practice-relevant test environments in an agile manner. They can help to develop new solutions with clear benefits for users and society, as well as to continuously update legislation. The same applies to a new generation of public-private partnerships that guarantee development of Switzerland's young talent, bring the necessary investments to the country, increase the population's assessment skills and promote AI governance centred around people with international ambitions.

VII. Harnessing excellence for trusted data.

High-quality AI systems depend on the nature and origin of the data sets used. By formulating precise data quality requirements, Switzerland has the potential to become a trading centre for quality-checked data sets across all sectors.

VIII. Demanding and promoting ESG-compatible AI.

As beneficiaries of AI, human beings need to be more involved as individuals and communities in the (risk) assessment of AI applications. If AI software assessments also consider environmental and social dimensions, based on existing ESG criteria, Switzerland will be able to hone another unique selling point.

Innovate Switzerland is a cross-industry network of forward-thinkers who proactively shape the future conditions of the data-driven economy. The focus is on the belief that a multi-stakeholder approach incorporating relevant perspectives and needs will lead to sustainable solutions.