2025

Digital Sovereignty in chemical and pharmaceutical industries:

Europe’s strategic chance for resilience and competitiveness

Table of Contents

Introduction

The digital transformation of the industry is growing rapidly. At the same time, Europe's technological dependency on non-European providers appears to be more and more at geopolitical and economical risk. The establishment of sovereign digital systems has become a fundamental strategic issue, especially for critical infrastructures such as the chemical and pharmaceutical industries. Cloud infrastructures, AI systems and data platforms form the foundation of industrial innovation, productivity and sustainability - and must therefore be trustworthy, legally compliant and in European hands in the long term. According to an analysis by Synergy Research (2023), the market share of European cloud providers is currently less than 5% - while US hyperscalers such as Amazon Web Services, Microsoft Azure and Google Cloud together dominate over 70% of the global cloud market. These figures illustrate Europe's structural dependence in one of the key strategic technology fields.

This dominance entails not only economic but also political risks. The US Cloud Act allows US authorities to access data that is processed by US companies - even outside the US. This creates considerable legal uncertainties for European companies, particularly in regulated sectors. In addition, there is growing concern about political influence due to the close integration of business, politics and security interests in the USA. Examples of this include government influence on social media platforms, the control of access to critical infrastructure data (e.g. weather or energy infrastructure) or economic agreements with a security policy context - for example in the context of NATO or the Ukraine commodities deal.

This white paper highlights the urgency and strategic relevance of digital sovereignty for the chemical-pharmaceutical industry, highlights current developments in legislation and technology and presents tried-and-tested solutions that pave the way to a self-determined digital future.

Europe's digital dependency: facts, figures and risks

Europe is currently heavily dependent on non-European providers in key digital sectors. According to the "Digital Dependence Index" (Konrad-Adenauer-Stiftung, 2023), Germany's score is 0.82 on a scale from 0 (no dependence) to 1 (maximum 0.78. This dependency is evident in areas such as cloud computing, AI infrastructure, software platforms and the control of digital standards.

This situation is not only problematic from a data protection perspective, but also harbors geopolitical risks: extraterritorial laws such as the US CLOUD Act can make European data accessible without European law applying. At the same time, trade conflicts or

cyberattacks can lead to outages that jeopardize system-critical processes in the industry.

The European Commission is responding to this with the Gaia-X project, the Digital Compass 2030 and initiatives such as IPCEI-CIS. The aim is to create a European cloud and data infrastructure that promotes technological independence and accelerates innovation. According to the Commission, 75% of companies should be using the cloud by 2030, 10,000 edge nodes should be created and 100% of critical public services should be digitized.

Critical infrastructures under digital pressure: focus on chemicals and pharmaceuticals

Hardly any other sector is as dependent on security, availability and regulatory compliance as the chemical-pharmaceutical industry. At the same time, it belongs to the KRITIS category and is therefore under special protection - and special observation. The digitalization of product development, approval, production and the supply chain is progressing rapidly here.

According to the German Federal Office for Information Security (BSI), the number of security-related incidents in the KRITIS environment is rising continuously. More than 20,000 reports were counted in 2022. The attack surface continues to increase due to networked systems, IoT devices and globally distributed data streams.

At the same time, regulatory requirements are increasing: The AI Act, the NIS2 Directive, the Corporate Sustainability Reporting Directive (CSRD), the EU Taxonomy, the European Sustainable Products Regulation (ESPR) and the Data Act not only demand transparency, but also sovereignty over data, systems and AI applications.

In order to meet these requirements, chemical and pharmaceutical companies must:

- process sensitive data in secure, legally compliant data rooms,
- operate AI models in a traceable and auditable manner,
- combine industry-specific workflows with regulatory documentation,
- and all of this in an IT infrastructure that is subject to European jurisdiction and control.

Technological responses to regulatory and strategic challenges

The good news is that there are already tried and tested European solutions that enable digital sovereignty for KRITIS sectors. Two practical examples:

- **SAIFTY:** A platform that uses AI to open up unstructured data sources such as safety data sheets, regulatory texts or technical documentation and generate structured, analyzable information. The platform offers ready-made reporting formats for CSRD and ESPR and can be integrated directly into existing company processes. SAIFTY is operated on European cloud infrastructure, e.g. the IONOS Cloud, which ensures data sovereignty in accordance with GDPR and European law. This enables companies not only to comply with regulatory requirements, but also to develop intelligent, industry-specific AI applications in a sovereign data space.

  "With SAIFTY, we are demonstrating how regulatory compliance, sustainability and technological innovation can work together. The platform is our contribution to the intelligent digitalization of critical processes in the industry." - *Martin Prinz, CEO of coac*

- **SEP (Smart Equipment Passport):** A digitally hosted solution for managing industrial assets. SEP combines technical documentation, material tracking, digital twins and maintenance management in one central platform. The hosting architecture is based on European cloud infrastructure, which ensures compliance with the European Sustainable Products Regulation (ESPR). SEP supports companies in realizing sustainable supply chains, simplifying complex approval processes and managing technical data with the highest quality and security.

  "SEP enables a new quality of transparency and sustainability for Industry 4.0 - on a sovereign, European infrastructure. This makes digital product responsibility tangible and feasible." – *Martin Prinz, CEO of coac*

Both solutions demonstrate this: When European cloud infrastructure - as provided by IONOS - is combined with industry-specific technology and regulatory expertise, the result is a platform for resilience, sustainability and efficiency. Cooperation with European hosting partners ensures that companies can realize digital sovereignty not just as an ideal, but as a concrete competitive advantage.

"For us, digital sovereignty is not a buzzword, but a prerequisite for sustainable industrial development in Europe. It starts with data sovereignty - and with the right technology, it becomes a driver of transformation." – *Martin Prinz, CEO of coac*

Conclusion: Digital sovereignty is not a luxury, but the basis of European competitiveness

The coming years will determine whether Europe remains a digital creator or becomes a digital consumer. Particularly in critical industries such as chemicals and pharmaceuticals, digital sovereignty is not just a question of IT - but also of location, supply and innovation security.

It is time to invest boldly in European cloud technologies, AI solutions and data rooms in order to not only comply with regulation, but to actively shape it. Digital autonomy means control over our own future - technologically, economically and politically.

Contact Us

- Email: info@coac.de
- Website: www.coac.de
- LinkedIn: https://www.linkedin.com/company/coac-gmbh/