TUM THINK TANK

Digital Sovereignty Talks

Food4Thought: Seven Principles for a Successful Deutschland-Stack

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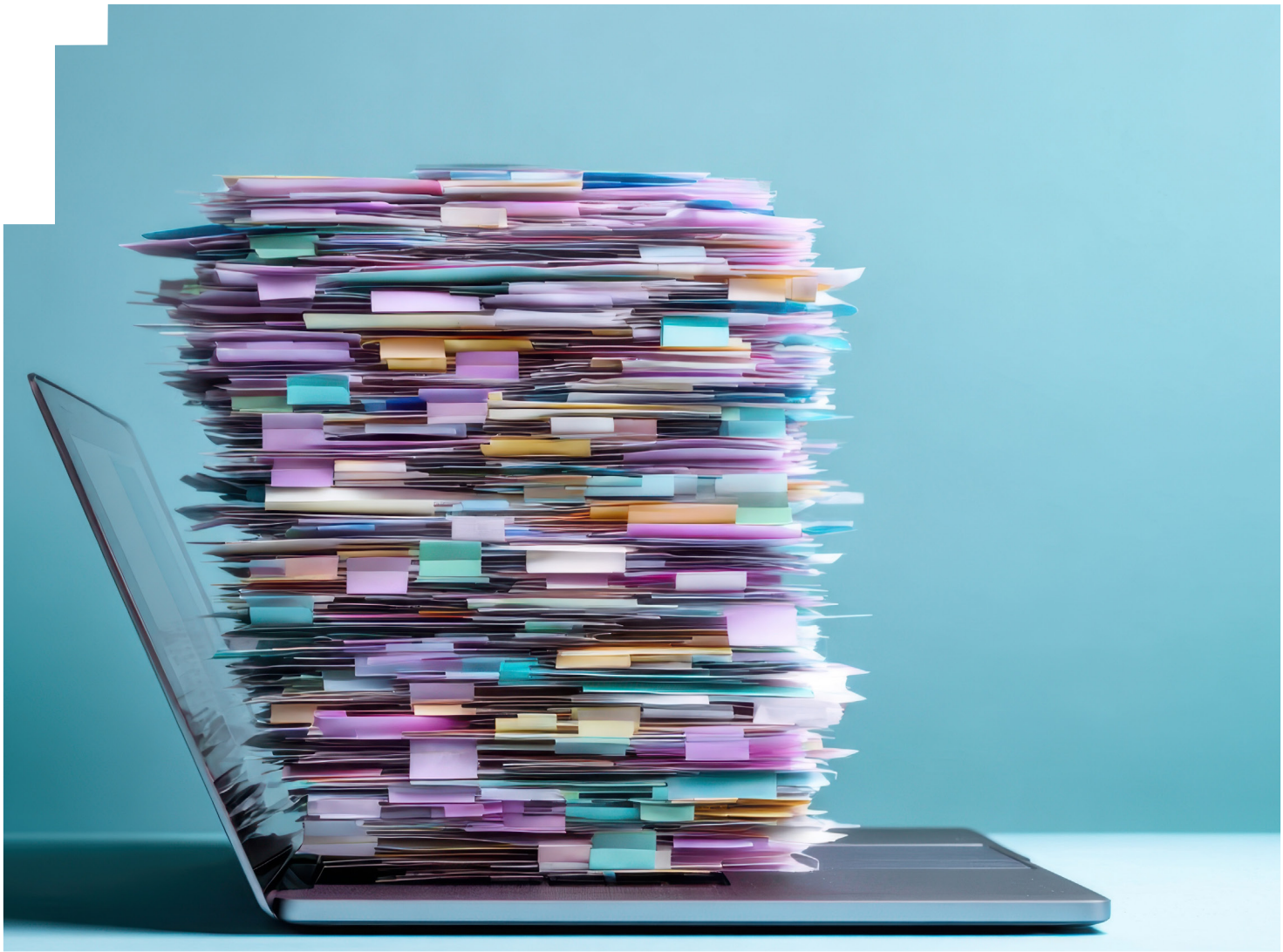

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SEVEN PRINCIPLES FOR A SUCCESSFUL DEUTSCHLAND-STACK

The "Deutschland-Stack" is an attempt to create a shared digital foundation for public administration, industry, and society that is open, secure, and compatible with European frameworks. As part of the Digital Sovereignty Talks organized by the TUM Think Tank, recently held at Sopra Steria in Hamburg, representatives from public administration, industry, academia, and the open-source community discussed what is needed to make this approach successful. The results can be distilled into seven principles, intended as a proposal to the federal government and the Federal Ministry for Digitalization and State Modernization (BMDS) to shape the stack as a learning, cooperative, and European project.

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EXECUTIVE SUMMARY

Germany needs a digital stack that is open, secure, and integrated at the European level. The stack must not become a rigid large-scale IT project; instead, it must evolve as a learning ecosystem. Security must be built in from the outset, while open interfaces and APIs form the technical foundation and ensure that the stack remains compatible with European standards.

A sovereign stack can only succeed if public administration, industry, academia, and communities jointly build, standardize, operate, and continuously develop it. The state must act as an active customer and coordinator, not as the sole developer. Talent, teams, and leaders require cross-sector development programs covering architecture, operations, and governance.

The seven principles provide a concrete roadmap. They define how a Deutschland-Stack can emerge: step by step, securely, interoperably, compatible with Europe, economically viable in a market-based system, and responsibly centered on people.

1. A Learning Architecture, Not a Fixed Blueprint

The stack should not be defined as a final project, but as a growing and learning system. Development proceeds through piloting, evaluation, and scaling. Iteration takes precedence over perfection. A clearly defined core with basic services provides orientation and ensures interoperability. The architecture must be able to integrate technologies such as AI in a modular way.

Recommendation: Establish a Deutschland-Stack platform with a documented core, pilot modules, iterative development cycles, and mandatory reuse. Public and private actors contribute existing solutions.

2. Integrate Security from the Start

Security is not an add-on. Digital sovereignty requires secure core services, verified software modules, and clear security standards. From the outset, the stack needs integrated security mechanisms such as identity management, zero trust, encryption, logging, auditability, and compliance by design. Security tools are core elements, not supplementary products.

Recommendation: Establish a Security and Trust Layer with certified modules. Introduce a Sovereign Security Label that makes technical and operational security standards binding and ensures their continued evolution.

3. Ensure Open Interfaces and European Compatibility

Open, documented interfaces and APIs are essential for freedom of choice, interoperability, competition, and innovation. They prevent lock-in effects and enable integration with European initiatives such as eIDAS, Gaia-X, and EUCS. European compatibility requires standardized interfaces and service levels, certifications, auditability, and shared protocols.

Recommendation: Mandate the adoption of open API standards, EU-compatible interface profiles, and auditable implementations. Build a connector that links core services of the Deutschland-Stack with European cloud, data, and identity services.

4. Share Knowledge and Learn from One Another

Digital sovereignty emerges through collective learning. Expertise already exists but is distributed across sectors. Knowledge must become structured, accessible, continuously updated, and jointly usable. Learning infrastructures must connect technical, legal, and organizational expertise.

Recommendation: Create a Deutschland-Stack Knowledge Base with best practices, modular training programs, open-source competence centers, and co-creation formats. Contributions are curated, further developed, and embedded in governance structures.

5. Actively Involve the Economy

The stack will not be built by the public sector alone. Public administration and industry must jointly develop, operate, and scale it. Open-source providers and sovereign proprietary vendors are equal partners if they meet requirements for open interfaces, transparency, and maintenance commitments. Market-ready solutions should be deliberately adopted and further developed. The state provides impetus through demand, clear criteria, open standards, long-term contracts, and reliable framework conditions.

Recommendation: Introduce a procurement priority for sovereign European solutions. Establish long-term development and operations contracts with binding maintenance and further development obligations. Promote market-ready solutions, not just pilot projects.

6. Connect Talent and Leadership

Digital sovereignty requires people who work across sectors and take responsibility. Architecture, operations, security, law, and governance must be linked through interdisciplinary leadership programs.

Recommendation: Introduce an Erasmus for Tech Leadership program: joint education, exchange, and project work between public administration, industry, academia, and civil society, with a focus on operator skills, architecture, governance, and a culture of error tolerance.

7. Governance as an Enabler, Not an Administrator

The stack requires coordination, not paralysis. Governance should make modules visible, encourage reuse, ensure maintenance, and prevent fragmentation. It coordinates without centralizing. Binding commitments arise from clear rules for use, maintenance, and further development.

Recommendation: Introduce a binding participation mechanism: anyone who uses or contributes modules commits to documentation, maintenance, and sharing. Establish the governance framework as a living rule set.

CONCLUSION

The Deutschland-Stack is not a product, but a shared infrastructure that must grow, learn, and continuously evolve. It can only succeed if it is understood as a joint learning project—open to contributions, reliable in implementation, and firmly anchored in the European idea. With clear standards, shared responsibility, and a strong security foundation, a stack emerges that is resilient, sovereign, and future-proof for Europe. It is not a blueprint, but a process: a growing, shared operating system for a digital, sovereign society.