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Regional EdTech Ecosystems in the United States and How Their Innovation Conditions Are Organized

Executive Summary

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The Executive Summary presents the objectives, methodology, results, and conclusions of two reports by the Institute for Innovation and Technology (iit) at VDI/VDE Innovation + Technik GmbH: Report 1 on EdTech ecosystems in the United States and Report 2 on EdTech governance in the United States. The reports are based on a fact-finding mission conducted in the first half of 2026. Dominik Theis, Dr. Alexander Raev, and Claudia Loroff were responsible for the collection and analysis of data and the writing of the reports.

1 Subject Matter and Objective

The fact-finding mission sought to identify the key mechanisms and functions that characterize EdTech innovation ecosystems and to determine which of these elements can be applied to Germany. For the fact-finding mission, EdTech primarily refers to digital teaching and learning offerings, including learning platforms, digital curricula and content, AI-supported applications, and specialized individual solutions.

In the United States, companies and private capital interact with a highly decentralized education system that is subject to minimal regulation at the federal level. At the same time, key foundational technologies for digital education—such as cloud infrastructures, platforms, interfaces, and foundation models[1]—are developed to a significant extent in the United States. For this reason, three contrasting, regionally bounded EdTech ecosystems—each exhibiting different configurations, development trajectories, and levels of maturity—were examined: the San Francisco Bay Area, including Stanford and Silicon Valley; the Boston region, including Cambridge; and the Front Range of the Rocky Mountains, stretching from Colorado Springs (Colorado) to Cheyenne (Wyoming). The selection of these ecosystems is based on the assumption that EdTech innovation is spatially concentrated and that regional configurations can be systematically distinguished. A key finding of the study is that no uniform national EdTech system exists in the United States.

Both reports draw on the same empirical basis but focus on different analytical aspects:

- Report 1 examines the structural, institutional, and relational conditions of regional EdTech ecosystems. The material is analyzed using an adaptation of Michael E. Porter's[2] Diamond Model. The model has been expanded to cover the digital education sector. The analysis takes into account factor and demand conditions, related industries, business dynamics, government action, and external shocks, as well as technology transfer, funding mechanisms, trust relationships, and ecosystem maturity.
- Report 2 focuses on the governance of these ecosystems and examines the constellations of actors, forms of coordination, infrastructures, and funding logics that organize, stabilize, or limit their development. The interviews were analyzed along the innovation cycle—from ideation and prototyping through piloting and funding to scaling and implementation. The central thesis is that, in the U.S. typical cluster management services are provided in a decentralized manner, without being bundled within a central cluster organization.

1 Foundation models are AI models pre-trained on large, heterogeneous datasets that can be adapted to many downstream tasks, including educational applications.

2 Porter, Michael E. (1990): The Competitive Advantage of Nations. New York: Free Press. The Diamond Model explains locational advantages through the interplay of factor conditions, demand conditions, related and supporting industries, as well as corporate strategy, structure, and rivalry; government and chance also play a role.

2 Results

The following findings summarize both reports.

2.1 Layering and regional differentation

EdTech products do not emerge in isolation. They rely on end-user devices and servers, cloud and data architectures, and learning management systems, and are increasingly built on foundation models. This layering explains why U.S. infrastructure and platform actors establish standards and dependencies far beyond their domestic market. Consequently, dependencies in digital education arise not only within individual applications, but in underlying technological and industrial layers. The case studies represent different configurations and degrees of maturity.

The **Bay Area** appears as a mature, network-based, capital- and scaling-oriented ecosystem. The influence of Stanford University, its alumni relations, in-house university licensing, and university-owned accelerators[3], as well as venture capital and large, world-leading technology companies are closely linked. There, EdTech is often part of a broader technology and AI economy. The strength of the Bay Area lies in enabling rapid transitions between research, startup formation, and financing. The challenge is that pedagogical impact, implementation, and quality assurance can take a back seat to speed and platform logic.

The **Boston area** appears as a mature, relationally dense, evidence- and impact-oriented ecosystem. A multitude of research-intensive universities, an educational media and publishing landscape that has evolved over a long time, as well as intermediary actors from higher education and the nonprofit sector combine expertise, reputation, and practical relevance. In the interviews, financing relationships are characterized as long-term and only loosely tied to rapid exit strategies. While the ecosystem's core strengths reside in its legitimacy, domain knowledge, and curricular alignment, a friction point emerges along the innovation cycle: intellectual capital does not automatically translate into well-established routines for launching and scaling EdTech startups.

The **Front Range** is emerging as a publicly and privately funded, skilled-workforce-oriented ecosystem. It is built upon regional deep-tech needs, such as quantum computing, semiconductor manufacturing, and data centers. In response, the region offers interconnected educational pathways across high schools, community colleges, and the local economy, encompassing vocational training as well as the recognition and crediting of academic achievements in higher education and vocational education and training. Within this framework, EdTech is less of an independent product market and more of an enabler and foundational infrastructure for these qualification pathways. Large school districts can consolidate requirements and communicate them back to providers. While the system's strength lies in its clear demand orientation and proximity to practice, its limitations reside in its localized focus, meaning that solutions do not scale automatically.

In short: the Bay Area accelerates transitions, Boston validates offerings through evidence and trust, and the Front Range implements in line with regional needs.

2.2 Demand, Adoption, and Testing Environments as a Governance Arena

In the K-12 sector, procurement decisions are predominantly made at the school district or individual school level. While this decentralization facilitates early-stage testing by avoiding a uniform national approval process that could block market entry, the very same structure hinders product scaling. Providers must engage with and convince a multitude of local decision-making entities, each with distinct budgets, IT capacities, and priorities. Consequently, a successful pilot does not automatically translate into widespread product demand.

Quality assurance is organized locally and varies in its degree of formalization. For instance, following the pandemic-induced surge in EdTech procurement, a large school district in the Front Range established a cross-departmental review and purchasing process. In California, state-level material lists and guidelines provide orientation, though final decision-making authority remains local. Alongside scientific evidence, experiential knowledge, reputation, personal recommendations, and relationships of trust play a significant role. Alignment with local procurement routines is equally crucial, as subject coordinators, IT, leadership, and finance departments must all be involved. In the absence of structured testing environments, evaluations remain ad hoc and difficult to transfer.

2.3 Transfer, Intermediaries, and Distributed Coordination

Research prototypes do not automatically transform into marketable, privacy-compliant products with ongoing support. This gap is bridged by intermediaries of various forms and types: Offices of Technology Licensing handle intellectual property and licensing matters related to the use of scientific findings and research results; university labs and accelerators support team building, market validation, and investor readiness; mentors, conferences, and professional networks open up access to school districts, particularly for startups.

3 Accelerators are innovation-related intermediaries: they support founding teams with validation, team building, access to capital, and visibility for a limited time.

Intermediaries thus provide services typically attributed to cluster management in Germany—such as networking, translation, visibility, and occasionally early-stage funding—without a central cluster organization steering the entire trajectory. At the same time, these actors act selectively, helping determine which projects are considered suitable for further development. The study refers to this as distributed cluster management. In this context, coordination relies significantly on repeated collaboration, reputation, and interpersonal trust. These relationships frequently substitute for hierarchical or state-coordinated governance.

2.4 Capital as Phase-Based Governance

Capital providers do not merely structure financing; they also shape project milestones, interoperability, and scaling. Along the innovation cycle, specialized investors operate in an interconnected manner, with varying investments and selection criteria. Early-stage investments frequently combine capital with mentoring and follow-on financing, while later-stage funds support growth. As projects progress, the selection of projects becomes increasingly selective. At the same time, failure is viewed as a learning opportunity and a potential catalyst for new ventures.

At the same time, a traditional hypergrowth logic[4] faces structural limitations in the education sector: fragmented buyers, long sales cycles, complex implementation, and evidence of impact that are costly, slow, and often not decisive for procurement decision-makers. Philanthropy can finance projects that appear too slow or insufficiently profitable for venture capital, but in doing so, it sets its own thematic and evidence priorities. Large technology companies act as infrastructure partners and as competitors. Capital is therefore a steering resource with a selective effect.

2.5 Asynchrony and Limited Quality Assurance Capacities

Technological development, investment cycles, implementation in schools, data privacy reviews, pedagogical evaluation, and regulation proceed at different paces. Generative AI in particular highlights how use in schools and accelerated product development—further driven by AI-powered development tools—can outpace local and state regulation. Conflicting practices can even emerge within the same school or between neighboring school districts. These fragmented patterns of adoption subsequently complicate any systematic assessment of impact.

The US EdTech sector is characterized by decentralized regulation and a prominent role for intermediary actors in financing, transfer, and scaling. Comprehensive product and evidence standards as well as independent evaluation services remain weakly developed. While venture capital, accelerators, and university programs support selected ventures—often over extended periods—they are no substitute for public quality assurance. Public infrastructure and pandemic-driven procurement have established critical market conditions, whereas value creation and standard-setting occur predominantly in the private sector. In this context, institutional reputation can generate trust and market access without providing evidence of effectiveness.

3 Conclusions

Effective performance arises from synergy. What matters is not a single locational advantage, but the regional interplay of universities and talent, capital, demand, related industries, knowledge transfer, and trust.

Dynamism emerges at interfaces. Research, funding, demand, transfer, and implementation do not automatically interconnect. Specialized actors, recurring handovers, and regional routines serve to connect these functions.

Funding dynamics are selective. Funding is primarily provided for projects that are viable for investment, scalable, and marketable in fragmented adoption markets. Limiting factors include differing speeds, inconsistent quality assurance, platform and capital power, and unequal access to networks.

For German innovation and education policy, the key question is how core functions of the U.S. ecosystems studied—such as demand coordination, knowledge transfer, and quality assurance—can be transferred to the German context. In this process, requirements regarding evidence, pedagogical quality, a focus on the public good, and digital sovereignty are just as relevant as open approaches, such as Open Source and Open Educational Resources. Based on these considerations, the study identifies five action areas:

1. Funding and support throughout the entire innovation cycle, including phase-specific milestones and termination criteria.

2. Establishment of quality-assured testing environments that combine access to practical settings with pedagogical evaluation, interoperability, accessibility, and links to procurement.

3. Coordination of public demand across states, school authorities, media centers, and procurement agencies, including systematic feedback from schools.

4 "Hypergrowth" refers to an expectation—common primarily in the venture capital environment—of very rapid, often exponential company growth. The interviews describe EdTech as a market in which such growth trajectories are usually rare.

4. A clear and coordinated mandate for existing and new intermediaries regarding transfer, pilot access, and implementation, subject to transparent quality standards.

5. Linking innovation funding to platform, data, and sovereignty requirements, given that interoperability is determined at deeper infrastructure layers.

4 Methodology

The study was designed as a qualitative, exploratory inquiry, combining interview data with publicly available sources and scientific literature. The empirical foundation is subject to the standard limitations of qualitative expert interviews. The objective was to reconstruct recurring patterns, challenges, as well as forms of cooperation and coordination. The methodology combined a literature review, internal validation workshops, and 30 semi-structured interviews conducted both on-site and remotely. Interview analysis was based on an analytical ecosystem framework. The interview sample encompasses universities and technology transfer offices, accelerators, university-affiliated labs, mentoring networks, specialized funding actors, and selected public-sector stakeholders.

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