Assessing Innovation: Is it working for everyone?

CSPO Conversations: Technology Policy and Regional Innovation Engines
FROM REGIONAL INNOVATION ENGINES TO TECH HUBS

NSF TIPS Superstructure for Regional Innovation Engines Programming

Convergence Accelerators promote national capacity building through applied research, L-T-M, tech transfer, commercialization, experiential learning, STEM curricula*

Key Societal, National, and Geostategic Challenges

United States national security
United States manufacturing and industrial productivity
United States workforce development and skills gaps
Climate change and environmental sustainability
Inequitable access to education, opportunity, or other services

Artificial intelligence
Quantum information science and technology
Biotechnology, medical technology, genomics, and synthetic biology
Natural and anthropogenic disaster prevention or mitigation
Advanced energy and industrial efficiency technology

Data storage, data management, distributed, ledger technologies, and cybersecurity.
Robotics, automation, and advanced manufacturing
Advanced communications technology and immersive technology
High performance computing (HPC)
Advanced materials science

* See Dempwolf model on innovation cycle for university-led activities and outputs of Convergence Accelerators
FROM REGIONAL INNOVATION ENGINES TO TECH HUBS

EDA Superstructure for Regional Tech Hubs Programming

Key Tech Hubs Regional Economy Objectives
- Industries that support national security
- High tech and advanced manufacturing and industrial productivity
- Inclusive workforce development and skills gaps
- Address climate change and environmental sustainability
- Equitable access to education, opportunity, or other services

Tech Hubs incent public-private-nonprofit-academic collaborations to design and expand regional high-tech initiatives that create resilient, inclusive, globally competitive economies. NSF KTFs provide industry focus.

Key Technology Focus Areas
- Artificial intelligence
- Quantum information science and technology
- Biotechnology, medical technology, genomics, and synthetic biology
- Natural and anthropogenic disaster prevention or mitigation
- Advanced energy and industrial efficiency technology
- Advanced materials science
- Data storage, data management, distributed, ledger technologies, and cybersecurity
- Robotics, automation, and advanced manufacturing
- Advanced communications technology and immersive technology
- High performance computing (HPC)
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Each activity has inputs, outputs, & associated documents

Begin transition to Tech Hubs

Each activity involves people and organizations producing intermediate outcomes

Contributing to this intended innovation outcome
Both NSF and EDA place a strong emphasis on inclusive opportunity – it’s a national priority in the CHIPS and Science Act.

Key question: How do we assure that the individuals in left behind communities, who gave rise to the need for investment, benefit?

Traditional indicators, e.g., employment, wages and income, infrastructure, housing stock, etc. are useful for determining where investment should be made.
Inclusive innovation needs to account for a more complete system of supports to increase success rates in marginalized and disinvested communities – implying the need for more individualized measurement of outcomes.

Current measures do not account for displacement, economic leakage, and individual development in target communities.

Inclusive innovation is not just about knowledge transfers and access to labs, patient capital, etc. – individuals in target communities often have other barriers that risk their ability to learn and work in higher-tech industries.
Engaging in communities (“embeddedness”), recording residents’ stories, and analyzing barriers and solutions to barriers may enable inclusion innovation investments to yield stronger results.

The timeline for measuring outcomes needs to be more continuous and extended for several years.

Building trust with individuals in these communities will be critical for more accurate feedback.

Traditional measures can still be used, but they will be supported with better context for analysis, policy, and outcome measurement.