

Cultivating Mastery in Place

Diné entrepreneurs entwine economic renewal with mutual obligation, providing a model of regional economic development that serves the community.

Defining an economic development strategy for a place—blending its past with a vision for a productive future that will serve the needs of its people—is an awesome responsibility. But it is often approached in a generic way: hiring consultants from big multinational firms, following “best practices,” and hoping to become a “Silicon Somewhere” of the next big thing, whether it be biotechnology, artificial intelligence, or some other high-opportunity technology.

But retrofitting the Silicon Valley model of economic development to other places and communities rarely works. I (Feldman) have worked in technology-based economic development for decades, and I’ve come to regret the way it dominates most conversations and plans. The Silicon Valley model is not generalizable. By subsidizing the construction of Amazon warehouses or the relocation of multinational firms, this cookie-cutter approach misses important opportunities to build local ownership that would ensure that prosperity can be shared across generations. A new model of economic development is needed, one that accommodates diverse ideas about what constitutes a good life, meaningful work, a healthy economy, and cultural identity.

Recently the two of us have been collaborating on economic development research in the Navajo Nation in Arizona, a relatively remote area that has long struggled to create jobs. Development programs designed and run

largely by outsiders—federal agencies, universities, foundations, or corporations—have failed to reflect community values and failed in general. As a result, mistrust of outside investors and multinational corporations has led to the emergence of home-grown entrepreneurship as both a pragmatic response and a route toward self-determination in the Navajo Nation. As we studied this grassroots activity, we’ve come to realize that today’s models of economic development are overlooking important aspects of Indigenous entrepreneurship and failing to explore their potential for creating pathways to technology-led development.

Although *Diné* (the Navajo word for Navajo) artisans have been known for their creativity and business savvy for many generations, Indigenous entrepreneurs are understudied, and their role in community economic transformation is neither recognized nor supported. We believe that developing a deeper understanding of what drives them—their motivations, values, decisionmaking processes, and community ties—could fundamentally reshape how society approaches economic development. Furthermore, studying how they leverage risk tolerance, identity, family structures, access to capital, and purpose could aid in the design of economic development policies that align with community priorities such as self-determination, sustainability, and intergenerational equity. These lessons extend well beyond tribal lands.

Beyond individualism

Studying Indigenous entrepreneurship challenges much of what academic researchers think we know about what it means to be an entrepreneur. Traditional models of entrepreneurship emphasize individual ambition, profit-seeking behavior, and a desire to scale. However, that framework can overlook or even alienate people whose goals are rooted in community well-being, cultural preservation, and shared prosperity. These entrepreneurs are building value in ways that go beyond the bottom line, but the economic development community often fails to recognize them on their own terms.

When sixth-generation Navajo farmer Zachariah Ben's first child was born, he and his wife Mary searched for traditional Diné baby food, but found that there was no reliable source, and what was available at reservation grocery stores was overpriced and rarely fresh. Working with a nutritionist, they formulated a recipe for a traditional Diné baby food made from corn that had been steamed, dried, and ground. Such corn-based baby foods were once the norm, but as generations have lost connection to old foodways, through relocation or boarding schools, some of that knowledge was lost. In 2021, the Bens founded Bidii Baby Foods, and since then they have provided increasing varieties and quantities of baby food to thousands of children, on and off the reservation, while enlisting traditional farmers to grow crops for the food. What the Bens were seeking was not only the ability to make a living, but to build a network among farmers, schools, nonprofit partners, parents, and children around native foodways. "That labor of love, all of that ancestral knowledge, all of that connection, and synchronizing ourselves with the elements, ritualized in that process—to have your son taste that and consume that energy was something. That type of reaction is what we wanted for the rest of our people," Zachariah Ben told a reporter in 2023.

When entrepreneurship is framed primarily around individualism and financial return, we risk overlooking people like the Bens, who are building enterprises that generate value in less conventional ways: sustaining local food systems, preserving traditional knowledge, and developing enterprises rooted in reciprocity rather than extraction. Bidii Baby Food's efforts do not fit neatly into mainstream venture capital or accelerator models, but they are no less entrepreneurial, and they create value, formal and informal employment, and stability in their communities. When policies and support systems are built around a narrow idea of what entrepreneurs should look like and how they should behave, they risk missing or undervaluing this category of changemakers, stifling potential economic development.

The example of Bidii Baby Foods also highlights the way focusing on technology-based start-ups has dominated the imagination of those responsible for policy, even as the evidence suggests that most start-ups are in non-tech sectors. Moreover, technology-based start-ups have not created the magnitude of jobs needed to replace those that have been lost in manufacturing. In light of this, policymakers should adopt broader, more inclusive frameworks when they look for local pathways to economic development.

Beyond Silicon Valley

In the years I (Feldman) have spent studying tech-led development, I've been struck by the resilience of the myth of Silicon Valley. Policymakers and economic developers across the globe try to build start-up ecosystems, attract venture capital, and scale high-growth tech firms, resulting in a proliferation of imitation without impact—initiatives that rarely deliver on promises of job creation, inclusive prosperity, or sustainable regional growth.

The conditions that made Silicon Valley successful are highly specific and historically unique, including substantial upfront capital, advanced infrastructure, and highly educated talent pools that many regions simply cannot provide. And, as a template for broader economic development, the model is limited: Tech companies employ relatively few people compared to traditional industries. Even in Bay Area communities, this has led to extreme inequality, precarious employment, housing insecurity, and cycles of boom and bust. This may be a feature rather than a bug—when venture capital demands rapid growth and exceptional returns, shareholder value is prioritized over community benefits or sustainable business practices.

The Silicon Valley model is so dominant, and so celebrated, that the cultural beliefs that support it—including the primacy of financial returns, the relentless focus on the individual, and the ideology of technological supremacy—tend to be overlooked. Regional development researcher AnnaLee Saxenian's seminal comparison of Silicon Valley and Boston's Route 128 corridor highlights how cultural and institutional differences shape regional innovation outcomes and demonstrates that innovation is not strictly about resources or infrastructure—it is also about relational norms, governance, and cultural alignment. Saxenian showed that regions that foster trust-based, collaborative ecosystems are more likely to adapt and thrive. Interestingly, Indigenous communities push this insight further by embedding relationality not just within the market, but within a broader ethical and environmental framework.

continued on page 50

INDIGENOUS FUTURISMS

F*uture Imaginaries: Indigenous Art, Fashion, Technology*, now on view at the Autry Museum of the American West, explores the rise of futurism in contemporary Indigenous art as a means of envisioning alternative futures and championing Indigenous technologies. Indigenous futurism—a dynamic and expanding movement that spans literature, visual art, fashion, comics, video games, and beyond—draws from ancestral traditions to imagine a more inclusive and sustainable world. While themes like time travel, cosmic beings, and technology have long been present in Indigenous art, their resurgence has become a powerful means of reconnecting with the past, navigating a challenging present, and reimagining futures free from colonial constraints.

Featuring over 50 artworks, *Future Imaginaries* creates unexpected and thought-provoking encounters between contemporary Indigenous creations and other works at the Autry. Wendy Red Star transports Indigenous figures adorned in fantastical regalia into surreal, cosmic landscapes. Cara Romero's photography illuminates the modernity of Native peoples, blending Indigenous perspectives with supernatural elements in everyday life. Jontay Kahmakoatayo (also known as Jontay Kahm) merges unconventional materials—Styrofoam, pebbles, and mesh—with shimmering organza twill fabric, designing futuristic fashion inspired by fossils.

By intertwining science fiction, self-determination, and Indigenous technologies across diverse Native cultures, *Future Imaginaries* asserts sovereign futures while challenging historical myths and the ongoing consequences of colonization, including environmental degradation and harmful stereotypes.

Future Imaginaries: Indigenous Art, Fashion, Technology is on view at the Autry Museum of the American West in Los Angeles through June 21, 2026, as part of the Getty Foundation's PST ART: Art & Science Collide initiative.

CARA ROMERO, *The Zenith*, 2022, archival digital print. Courtesy of the Trotta-Bono Collection and the artist. © Cara Romero.





Moving slow and repairing things

One of the venerated goals of Silicon Valley businesses borrows from Facebook's former motto to "move fast and break things," implying that disruption is inherently positive and unintended consequences are acceptable collateral. By contrast, many Diné entrepreneurs we've spoken with have emphasized balance, deliberation, and long-term responsibility as their goals. In tribal, rural, and underserved communities, there is a keen realization that what gets "broken" is often already fragile—local governance, environmental stability, cultural continuity. What's more, in places facing long-term disinvestment, weak infrastructure, and systemic barriers to inclusion, there is a need to repair trust, provide mutual support, and promote resilience. Recognizing this, Indigenous entrepreneurs pull from their daily lived experience and local strengths and histories to innovate in distinct ways.

Diné be'íiná, Inc. (The Navajo Lifeway), is a nonprofit organization founded in 1991 with the mission of preserving and revitalizing the Navajo-Churro sheep, a heritage breed that holds profound historical and spiritual significance for the Diné people. Diné be'íiná takes a holistic approach to cultural preservation, food sovereignty, and economic self-reliance by supporting Navajo sheepherders through a range of programs that include livestock management, fiber arts training, and entrepreneurial development. By promoting the use of hand-spun wool, natural dyes, and traditional weaving techniques, Diné be'íiná helps artisans transform ancestral knowledge into viable small businesses. The nonprofit also serves as a community hub for cultural education to pass on intergenerational skills and strengthen identity. In doing so, it offers a model of economic development that is both authentic and sustainable—one that centers on land, language, and lifeways rather than extraction or assimilation. Through its work, Diné be'íiná not only sustains a critical aspect of Navajo heritage, it also empowers individuals and families to build livelihoods that reflect and reinforce their cultural values.

Few economic development planners—let alone venture capitalists—would immediately recognize Diné be'íiná as an innovative business with scalable potential. At first glance, it might even appear nostalgic. Yet Diné be'íiná embodies a distinctive form of innovation: Operating as a hybrid organization, it blends a nonprofit mission with elements of a business incubator. Its purpose is not to disrupt markets or maximize profits, but to preserve the Navajo-Churro breed of sheep and the rich cultural, ecological, and nutritional practices that surround them. In doing so, it strengthens community resilience, cultural continuity, and promotes food sovereignty.

If innovation is defined narrowly as the pursuit of financial gain by self-interested entrepreneurs aiming to disrupt the status quo, then Diné be'íiná does not fit within the designation. But if innovation can also mean creating institutions that enable communities to flourish, traditions to adapt and endure, and people to lead lives rooted in meaning and mutual care, then Diné be'íiná is part of a new model. It may not scale in the conventional sense, but it offers a generative vision of expanding belonging, sustaining livelihoods, and restoring balance between people, land, and animals.

Which entrepreneurs are valued

Some forms of Indigenous entrepreneurship challenge the conventional typologies used in economic development. For example, the Navajo Nation has a long tradition of artisanal work that relies on attention to detail, three-dimensional design, and aesthetic judgment. This work is often characterized as traditional and artistic, rather than innovative and entrepreneurial. However, skilled weaving and silversmithing have evolved over generations, shaped not only by cultural values but also by market demand. Originally focused on functional and ceremonial items, weaving adapted to tourist and collector markets in the late nineteenth and twentieth centuries as weavers introduced new patterns, incorporated commercial dyes, and developed regional styles, like Two Grey Hills and Ganado. Silversmithing and turquoise jewelry became a vital artistic and economic practice as designs were adapted and stylized. Innovations in casting and stone-setting allowed for increased production and experimentation, making the jewelry both more recognizable and more marketable. Other crafts like basketry and beadwork also shifted toward the market, with artisans refining the size, symmetry, and patterns to appeal to collectors.

Still, Navajo craftsmanship is often categorized as *necessity entrepreneurship*—a term used to describe ventures pursued primarily for subsistence or survival. In contrast, *innovative entrepreneurship* is typically reserved for activities that introduce new products, technologies, or business models. This binary framing—entrenched in both academic literature and policy discourse over the past 25 years—has profound implications for how we value different forms of economic activity.

The distinction is more than merely academic; it shapes funding priorities, mentorship programs, and economic development strategies. Innovation entrepreneurship is widely seen as deserving of support and celebration, while necessity entrepreneurship is viewed as a symptom of underdevelopment, something to be alleviated rather than invested in. But this framing deserves deeper scrutiny because it risks reinforcing a hierarchy in which only certain types of entrepreneurship—typically male-

dominated, urban, tech-oriented ventures—are seen as worthy of study or investment. This marginalizes forms of entrepreneurship that are deeply rooted in community, heritage, and care-based economies, particularly those led by women and Indigenous entrepreneurs. By casting these efforts as “only” for survival, the field may overlook their potential to build alternative economic futures that are more equitable, sustainable, and aligned with community values.

From handicrafts to advanced manufacturing

The place-based ingenuity embedded in these Indigenous artisanal business offers an intriguing glimpse of how technology might provide a unique advantage as a tool for cultural survival and self-determination. In fact, long before Silicon Valley’s success, earlier models of regional economic development harnessed local skills and values. For example, in the 1890s, a young woman named Catherine Evans began making bedspreads featuring a regional needlework called *candlewick tufting* in northwest Georgia. She produced them by hand for department stores, and eventually 15,000 local needleworkers made thousands of tufted bedspreads that

with skills in digital design, production management, and marketing—blending cultural continuity with contemporary entrepreneurship. In this way, technology becomes a tool for cultural preservation and expression, supporting what might be called cultural sovereignty through innovation.

More than a decade ago, faculty at Navajo Technical University (NTU) recognized that the cultural emphasis on patience, accuracy, and care in creating beautiful and functional objects might find a parallel in the kind of high-precision, small-batch production that defines the advanced manufacturing sector. They also wagered that advanced manufacturing, which creates low-volume, high-value components for the aerospace, medical device, and defense sectors, would align with long-standing traditions of precision, craftsmanship, and small-scale enterprise in the Navajo Nation. Because advanced manufacturing is focused on niche or specialized components, it can thrive in distributed microfactories or modular facilities—in line with the desire of many NTU students to remain in their homes and ancestral communities. In general, adopting small-scale advanced

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were sold across the country. Over the following decades, entrepreneurs started building machines that would turn the handicraft toward mass manufacturing. As tufting technology took off, the region began making carpets. By the early 1960s the country’s carpet industry had relocated to the area around Dalton, Georgia, where it remains to this day. In this way, a skilled craft went through multiple adaptations to create an industry. This is comparable to the ways unique regional expertise transformed artisanal skills into advanced technology in other places—like polymers in Akron, Ohio, and photonics in Rochester, New York.

Successful economic transitions often involve developing production methods through thoughtful integration with modern approaches, rather than abandoning traditional techniques entirely. Already, some Navajo entrepreneurs are reinterpreting traditional designs for new markets using modern technology. For example, Sasha Begay, owner of Twin Warrior Designs, creates and sells mugs featuring rug patterns originally woven by her mother. While these patterns are traditionally passed down through family lines, Begay brings them into new contexts by combining heritage

manufacturing was seen as a possible way for the Navajo Nation to retain economic control and build capacity on its own terms.

In 2023, NTU and Arizona State University’s School of Manufacturing Systems and Networks received a \$1 million grant from the National Science Foundation’s Regional Innovation Engines program to establish a network to support microfactories and technology centers for advanced manufacturing technologies such as additive manufacturing, CNC machining, and digital design and prototyping tools. The project is building partnerships with industry in the aerospace and space technology supply chain, a sector that is growing rapidly in the region. At the same time, trust with the community, which has experienced many broken promises, must be earned before meaningful collaboration can occur. The project also seeks to contribute to the development of trust-based relationships and social capital within the local community by ensuring that local voices are heard and integrated into planning, rather than being tokenized or overridden by external priorities.



JONTAY "KAHM"
KAHMAKOATAYO,
2.0 with Pebble Mask,
2023, organza twill. Image
courtesy of the Autry Museum.
Photo by Mitokino.

For decades, the Navajo economy has been shaped by dependency on extractive industries, government employment, and federal assistance, all of which are vulnerable to external political and economic shocks. Advanced manufacturing introduces a more resilient and value-added economic base, especially when focused on high-growth sectors such as aerospace, clean energy, and biotechnology. Participating in these sectors positions the Navajo Nation to occupy strategic roles within regional supply chains, shifting its role from passive recipient to active producer and partner, with more control over its economic destiny. Sovereignty in this context extends beyond legal or political autonomy—it includes economic power, decisionmaking authority, and the ability to reinvest profits in local priorities.

While testing this concept, the community will have to make choices and tradeoffs to maintain local control. As production methods and business models evolve, this might include building community-owned enterprises, cooperatives, or local governance frameworks that ensure manufacturing development continues to align with community values and priorities, and the capacity and

Today she ensures that the materials lab operates efficiently, supporting hands-on learning opportunities to bridge the gap between theory and real-world application, but she plans to start her own advanced manufacturing business in the community.

NTU's model disrupts the dominant logic of tech-led economic development, which often treats people as inputs and place as incidental. In conventional paradigms, workforce development is disentangled from enterprise creation. Workers are encouraged to be agile, placeless agents of growth who can plug into distant ecosystems. *Brain drain*—the departure of more highly educated people in search of better opportunities—is accepted as a side effect but rarely examined as a design feature of a system that privileges scale over stability and profitability over belonging. More realistically, brain drain is an endogenous condition of the current system, which fails to value staying and growing in place.

Our research on Indigenous entrepreneurs is ongoing, but already we have seen a fundamentally different ontology of development. Rather than separating human capital from place, innovation and rootedness are not in conflict—they

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workforce created by NTU can realize its potential.

In the meantime, because there are currently no independent advanced manufacturing businesses in the Navajo Nation, NTU has made its equipment available to its graduates. This is a form of innovation that combines the educational institution with the role of a business incubator and communal fabrication space. It also builds on a Diné tradition of intergenerational transmission of skills—so central to traditional crafts—and uses it as the backbone of a new workforce development pipeline rooted in community values.

In 2019 Adriane Tenequer graduated from NTU's accredited engineering program with a BS in industrial engineering. Working remotely, she earned a master's in industrial engineering from New Mexico State University in 2024. She has stayed in her community and now coordinates NTU's Materials Testing Lab. Her deep passion for materials science aids her in providing students, faculty, and researchers with the resources and expertise necessary to explore, analyze, and test materials for academic and practical applications.

are, in fact, co-constitutive. Rather than aspiring to train individuals who need to leave to find gainful employment, this model cultivates mastery in place, in service of community. By entwining production with cultural continuity and economic renewal with mutual obligation, this approach reveals that the deepest form of innovation may be in finding and choosing a future that serves the community.

In this light, advanced manufacturing is not merely a technical capability or industrial asset. It becomes a vessel—an instrument through which a people sustains its inheritance while shaping its future. That such a model is overlooked by academic literature and undervalued by investors is not surprising; it does not conform to the familiar metrics of success. But perhaps that is precisely its power: to remind us that not all progress is measured in quantifiable return on investment or unending growth. In a system driven by metrics and scalability, this model quietly asserts that economic development can take other forms—forms measured in continuity, quality of life, and collective flourishing. It reclaims development not as the accumulation of capital, but as the deepening of connection: between people and place, past and future, purpose and outcome.

Seeing barriers and opportunities

Building an advanced manufacturing hub in the Navajo Nation requires overcoming persistent infrastructural challenges that constrain both daily life and economic development. Entrepreneurial infrastructure—such as broadband access, reliable electricity, transportation networks, and business support systems—is inadequate or entirely absent. These gaps cannot be explained solely by geographic remoteness or typical market failures. They are the product of systemic underinvestment, the legacies of colonial dispossession, and the complex jurisdictional entanglements among tribal, state, and federal authorities. For Indigenous entrepreneurs, additional barriers compound these challenges. Unclear land tenure makes it difficult to use property as loan collateral, while banking and financial services are limited or nonexistent in many communities.

In this context, entrepreneurship becomes more than a tool for individual advancement—it is a bridge between technological capability and community-centered development. Traditional economic frameworks often treat infrastructural deficiencies as insurmountable obstacles that render places “uncompetitive.” But through the lens of community-rooted entrepreneurship, such deficiencies can serve as generative starting points.

Much the way Diné be'íná reframes cultural preservation as economic practice, a new generation of Indigenous entrepreneurs is treating infrastructure not merely as a technical challenge, but as a space for civic imagination and self-determination. Navajo Power, a public benefit corporation, exemplifies this approach by developing utility-scale solar projects that deliver clean energy *and* ensure that profits flow back into local communities through job creation and revenue-sharing. These efforts are not only functional; they reclaim infrastructure as something to be governed and shaped by the communities that rely on it. For example, renewable energy initiatives, such as those led by Native Renewables, bring electricity to off-grid homes while advancing energy autonomy and intergenerational learning.

True economic development arises when people have the agency and capacity to meaningfully shape their own environments. When communities are empowered to design, govern, and adapt their own infrastructures, they are not just closing gaps—they are opening new possibilities. What has long been viewed as a deficiency can become a foundation for a more just and flourishing future.

The radical potential of entrepreneurs-in-place

When academics focus solely on the Silicon Valley model of economic development, we may be unwittingly bringing disaster upon the locales we wish to help. Contemporary models of regional economic development suggest that

communities look beyond their borders to attract corporations and investors. But corporations focused primarily on shareholder returns may close or relocate facilities to chase lower costs—which can devastate communities, particularly in rural or deindustrialized regions, by eliminating jobs and reducing local tax bases. And such profit-maximizing behavior often ignores or downplays externalities such as pollution, resource extraction, and carbon emissions. A narrow definition of success distorts business incentives and fails to serve the broader society.

Studying Indigenous entrepreneurs has revealed that there are alternative pathways for communities to thrive. These approaches offer valuable lessons not only for Indigenous nations, but for rethinking economic development more broadly. Yet academics, policymakers, and investors often overlook these models because they do not conform to dominant metrics of success. This is a failure of imagination and a missed opportunity for transformative progress on building more inclusive and sustainable forms of prosperity.

There is a great need to reimagine the market system and capitalism itself to be more congruent with people's values. And it is becoming clear that the desire for meaningful regional development far exceeds what the Silicon Valley model can provide. Across communities nationwide, aspirations for a viable future are proving more ambitious and more socially connected than those focusing narrowly on shareholder value. From rural towns investing in cooperative enterprises to postindustrial cities rebuilding through community land trusts, we see examples of development that prioritize place-based resilience.

An economic development vision that builds on local skills and values offers a more durable path than high-tech clusters and venture capital ecosystems. Recognizing small and medium enterprises, cooperatives, social enterprises, and community-owned infrastructure as legitimate and vital components of a thriving economy opens new possibilities. Rather than chasing narrow growth metrics, this model prioritizes resilience, inclusion, and long-term well-being—creating economic systems that communities recognize as their own and are empowered to shape.

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