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Reports

Proactive Solutions in Implementing Tribal Digital Sovereignty

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Abstract

This article argues that Tribal Nations must move rapidly from ad hoc digital practices to comprehensive legal and governance frameworks that fully implement Tribal Digital Sovereignty. Drawing on lessons from Indian gaming and other economic sectors, it shows how vendor-driven arrangements, weak contracts, and incomplete jurisdictional assertions have historically created long-term vulnerabilities around data, infrastructure, and regulatory authority. The article reframes digital systems—cloud services, health information technologies, broadband and spectrum, AI tools, and data-intensive enterprises—as core sites of sovereignty rather than as technical back-office functions. It contends that delays in regulating these domains allow external actors to harden jurisdictional and economic advantages that are difficult to unwind.

To provide practical guidance, the article proposes four interlocking "buckets" of legal infrastructure: Tribal codes and regulations that assert digital jurisdiction; contracts and agreements that safeguard data ownership, limit sovereignty waivers, and require portability; easements and infrastructure arrangements that preserve Tribal authority over physical and virtual networks; and business registration systems that capture entities operating digitally in Tribal territories. It situates these tools within Indigenous Data Sovereignty frameworks such as the CARE Principles and emerging Tribal AI governance efforts, including early government policies that embed cultural values and guard against data exfiltration. The article further emphasizes workforce development, procurement strategies, and collaborative regional or inter-Tribal models as necessary conditions for sustained digital self-governance. Taken together, these approaches aim to ensure that Tribal sovereignty is exercised as powerfully in digital spaces as in the governance of land, resources, and institutions.

Keywords: Tribal Digital Sovereignty; Indigenous data governance; artificial intelligence; Tribal jurisdiction; contracts and infrastructure

Introduction

Tribal governments today exercise sovereignty in increasingly complex legal, political and economic environments. Sovereignty is not merely a legal doctrine—it is the underlying inherent authority Tribal Nations exercise in local governance of their citizens, lands, and resources in ways

Authors' note: Due to the number of legal sources cited, this article uses legal-style footnotes rather than the in-text citation format typically used by the *Journal of Community Informatics*. Refer to *The Bluebook: A Uniform System of Citation* (22nd ed. 2025).

that reflect cultural values and self-determination.[1] This authority extends beyond governmental functions into the economic realm, where Tribes establish for-profit business entities and complex economic enterprises for necessary revenue generation to fund nation building. Through Tribally chartered corporations, entities formed under the Indian Reorganization Act, business organizations, and other forms of revenue generation, Tribal Nations govern while also generating funds to support governmental services and community well-being[2] in the absence of the tax base that funds other sovereigns within the US federal union.

The rise of Tribally owned businesses reflects opportunities and challenges. Historically, Tribes were constrained by federal policies that restricted meaningful economic development, such as federal approval requirements for contracts and resource development on trust lands.[3] In the modern Self-Determination and Self-Governance era, Tribes have asserted greater control over their local economies and in their development of extra-territorial investments.[4] Economic sovereignty is inseparable from political sovereignty. The success of Tribal enterprises directly supports governmental independence, reducing reliance on federal appropriations and empowering Tribes to fund health, education, and infrastructure on their own terms.[5] From gaming operations to energy projects, Tribal businesses serve as expressions of self-government in action, proving that Native nations are capable of sustaining increasingly complex business enterprises within the framework of their own laws and within their own business strategies in other jurisdictions.

At the same time, the rapid growth of Tribal businesses requires careful inquiry into the governance structures that safeguard sovereignty while engaging with external markets. As seen

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[1] Worcester v. Georgia, 31 U.S. (6 Pet.) 515, 559 (1832) (recognizing Tribal sovereignty as inherent authority to govern, preexisting the United States and not granted by federal government).

[2] 25 U.S.C. § 5123 (authorizing Tribes to organize business corporations under Section 17 of the Indian Reorganization Act).

[3] *See, e.g.*, Contracts and Agreements with Indian Tribes, 25 U.S.C. § 81(b) (invalidating certain contracts that encumber Indian lands for seven or more years unless approved by the Secretary of the Interior); Leases of Restricted Lands, 25 U.S.C. § 415(a) (requiring Secretarial approval for most leases of Tribal and individually owned restricted land, including for business and natural resource development).

[4] The "Self-Determination and Self-Governance Era" in federal Indian policy generally refers to the late 1960s through present-day, and the shift in federal policy away from termination of government-to-government relationships with Tribes and toward Tribal self-government and self-determination. F. S. Cohen, *Cohen's Handbook of Federal Indian Law* (N. J. Newton ed., 2012th ed.); *see also* Felix S. Cohen, *The Erosion of Indian Rights*, *1950–1953: A Case Study in Bureaucracy*, 62 Yale L.J. 348, 350–355 (1953) (analyzing Tribal economic development structures and their role in self-governance).

[5] Merrion v. Jicarilla Apache Tribe, 455 U.S. 130, 137 (1982) (holding that "the power to tax is an essential attribute of Indian sovereignty" necessary for economic self-determination).

in both traditional industries and emerging fields like digital sovereignty, Tribes must ensure that contracts, regulatory frameworks, and business entities protect Tribal jurisdiction and prevent the erosion of self-government. The most effective Tribal governments integrate economic development with strong legal frameworks, ensuring that business ventures advance long-term sovereignty rather than undermine it.[6] The relationship between Tribal governments and Tribally owned business enterprises is not merely economic; it is fundamentally about preserving the right of Tribal Nations to dictate their own futures.

As artificial intelligence (AI) and digital technologies rapidly reshape governance and commerce, Tribal Nations urgently need to establish clear legal rules for their digital domains. The absence of explicit Tribal codes governing AI, data collection, and digital infrastructure creates a dangerous regulatory gap. External actors—vendors, tech companies, and non-Tribal governments—presume that state or federal law governs by default. This regulatory silence fails to protect Tribal interests and actively undermines Tribal sovereignty by positioning ungoverned digital interaction in ways that potentially establish legal precedents that erode Tribal authority.[7] Just as Tribes learned through gaming and utility disputes, failure to define and assert regulatory jurisdiction can result in federal and state courts treating Tribal authority as permanently surrendered.[8] Courts have repeatedly applied those limits for more than 25 years without meaningful retreat, reinforcing the notion that once jurisdiction is ceded in practice, it is extraordinarily difficult to reclaim. These earlier lessons demand immediate application to digital governance before technological systems become too entrenched to regulate.

Some of the most serious threats to Tribal Digital Sovereignty often hide in routine vendor contracts containing seemingly standard but ultimately sovereignty-defeating provisions. Choice of law clauses remove Tribal courts from disputes over Tribal data, undermining the Tribe's ability to protect its resources. Forum selection provisions require litigation in distant federal courts, stripping Tribes of home court advantage in their own territories. Data ownership terms transfer perpetual rights to Tribal information—including health records, governmental data, and sacred cultural knowledge—to external entities. These provisions create vendor dependencies with more permanent consequences than those experienced in early gaming operations or economic ventures.

Without Tribal codes explicitly asserting jurisdiction over digital activities, every vendor agreement potentially becomes a sovereignty waiver, every term of service acceptance becomes

[6] Michigan v. Bay Mills Indian Cmty., 572 U.S. 782, 788 (2014) (reaffirming that Tribal sovereignty protections extend to commercial enterprises as exercises of self-governance).

[7] Montana v. United States, 450 U.S. 544, 565–566 (1981) (establishing that Tribes generally lack civil authority over nonmembers on non-Indian land, except where (1) the nonmember enters into consensual relationships with the Tribe or its members; or (2) the nonmember's conduct threatens the Tribe's political integrity, economic security, or health and welfare).

[8] Atkinson Trading Co. v. Shirley, 532 U.S. 645, 659 (2001) (finding Tribal regulatory authority diminished where the Tribe failed to explicitly maintain jurisdiction over non-Indian fee lands).

a jurisdictional surrender, and every AI training data set that includes Tribal information becomes an uncompensated taking of collective resources. Even Tribes without immediate enforcement capacity benefit from establishing AI and digital governance codes to lay the foundation for Tribal law in digital spaces. These codes create legal precedent and notice that strengthens future enforcement capabilities while demonstrating that Tribal governments possess both the authority and sophistication to govern 21st-century technologies according to their own values.

Digital sovereignty and AI governance represent critical concerns for Indigenous peoples worldwide, from Māori algorithmic sovereignty in Aotearoa to First Nations frameworks such as OCAP principles.[9] This analysis, however, focuses specifically on Tribal Nations within the United States, operating within the unique federal-Tribal relationship and existing legal frameworks of federal Indian law. While examples are currently limited, Tribes are beginning to pioneer this space with innovative approaches that blend traditional values with modern technology governance. The Cherokee Nation, for example, recently announced an AI policy for government employees that incorporates specific Cherokee cultural beliefs and values;[10] simultaneously, this policy protects the Tribe from unnecessary or unintended data exfiltration. This shows that Tribes across Indian Country can—and should—take the lead in constructing the legal foundations needed for true digital governance and protection of Tribal data. Through model codes and shared frameworks, early adopters can create templates that other Tribes can adapt to their own governmental structures and cultural and community needs. Indian Country must lead the establishment of ethical, culturally grounded approaches to AI governance through robust legal codes. By doing so, when full enforcement capacity develops under non-Tribal governments, Tribal law will already be clear, comprehensive, and grounded in Tribal sovereignty rather than external impositions or default external jurisdiction.

This article begins with foundational definitions and then examines four essential legal frameworks every Tribe should consider as baselines in fully protecting its digital sovereignty. Next, the article draws on lessons learned and emerging best practices to develop practical suggestions with which Tribes can shape their digital futures. It provides examples of model language ready for implementation and describes governing models that assert sovereignty over AI and Tribal data. It ends by discussing collaboration models that can help to achieve the same transformative change demonstrated whenever Tribes have taken unified action in support of Native sovereignty.

[9] For discussion of Māori and First Nations approaches, see Stephanie Russo Carroll et al., *The CARE Principles for Indigenous Data Governance*, 19 Data Sci. J. 43 (2020).

[10] Cherokee Nation, Executive Order No. 02-2024, Artificial Intelligence Policy for Cherokee Nation Employees (2024) (implementing first Tribal government AI policy incorporating Cherokee cultural values including ᎦᏚᎶᏁ (gadugi — working together)).

Methodology

This article relies on publicly available sources from Tribal governments, Indigenous organizations, federal agencies, academic journals, policy reports, and news articles. Primary legal materials include Tribal constitutions, codes, regulations, resolutions, executive orders, and contracts along with federal statutes, regulations, administrative guidance, and judicial decisions in federal Indian law. The analysis focuses on Tribal Nations within the United States and reviews developments in digital sovereignty, AI governance, and health and broadband systems roughly between 2018 and 2025. Sources are read comparatively and contextually to identify recurring governance patterns, jurisdictional challenges, and practical tools that Tribes are already using or proposing. Because many Tribal governments appropriately restrict access to internal records and citizen-level data, the article does not report fieldwork or confidential data and is limited to public materials.

Sovereignty at the Speed of Business: Bridging the Gap between Tribal Commerce and Digital Governance

For decades, Indian Country has demonstrated what is possible when sovereignty meets new opportunity. From the early days of Tribal gaming, where external vendors once dominated the landscape, Tribal Nations rapidly scaled to develop a globally respected professional class. Within 20 years, Tribes built unparalleled expertise in gaming operations, cybersecurity, finance, and regulatory infrastructure that now sets global standards for the industry. This transformation was not merely economic—it was infrastructural, intellectual combined with rapid deployment—proving that Tribal governance could build, manage, and lead complex systems on Tribal terms. Now Tribes have taken the perfected trade from on-reservation operations to off-reservation and global businesses that outpace non-Tribal competitors.

Yet that speed came with hidden costs. The rush to capture opportunities meant business operations often outpaced legal frameworks. Vendors retained disproportionate control over Tribal data and critical services. Jurisdictional ambiguities emerged where law and the contours of sovereignty should have been clear. As one Tribal leader reflected, “We were just go, go, go”—racing to seize opportunities while governance lagged behind.[11]

These early oversights created lasting vulnerabilities that did not stop at Tribal gaming. Across sectors vendor agreements lacked audit provisions, data sovereignty clauses, and clear dispute resolution forums.[12] Tribes later discovered data was stored out-of-state, governed by foreign jurisdictions, and/or monetized without requisite Tribal consent. These were not

[11] Stacy Leeds, *Connecting Economic Development and Digital Sovereignty*, remarks at the 11th Annual Wiring the Rez Conference (Feb. 21, 2025) (transcript on file with authors).

[12] *See generally* Adam Crepelle, *Legal Issues in Tribal E-Commerce*, 10 Aub. U. Bus. L. Rev. 383 (2022) (examining legal issues in Tribal e-commerce and the challenges to Tribal sovereignty).

hypothetical risks but operational realities that strained sovereignty across health systems, gaming databases, and court records.

Today, that tension between rapid innovation and incomplete governance defines a critical moment. Digital systems have become the terrain of sovereignty.[13] Just as Tribes built their own infrastructure in gaming, they must now do so across broadband, cloud storage, data governance, cybersecurity, and AI.

Tribal Digital Sovereignty is not theoretical—it is the exercise of self-governance in all things digital. It encompasses the inherent authority to control digital infrastructure and data, and how it is acquired, stored, managed, and used. This means protecting health data from external control, safeguarding cultural knowledge from AI appropriation, and embedding Indigenous laws into digital architecture.[14] The stakes remain high, but now the terrain is virtual and the timeline compressed. (See also the article in this Special Issue titled "Defining and Putting into Practice Tribal Digital Sovereignty.")

Defining the Territory: What Digital Sovereignty Means

When a vendor controls Tribal health data, who has jurisdiction when something goes wrong? When AI companies train on Indigenous language recordings, what law applies? When Tribal gaming databases are hosted in Delaware, which courts hear disputes? These are not abstract questions. They are daily realities that define Tribal Digital Sovereignty.

Tribal Digital Sovereignty represents the inherent authority of Tribal Nations to control their digital infrastructure and data: how it is acquired, stored, managed, and used. This sovereignty exists not as a grant from external governments but as an extension of the inherent sovereignty Tribal Nations have exercised since time immemorial.[15] Just as treaties guaranteed self-governance without distinguishing between physical and digital territories, sovereignty follows Tribal interests wherever they exist.[16]

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[13] Marisa Elena Duarte, *Network Sovereignty: Understanding the Implications of Tribal Broadband Networks* 48–50 (2017) (arguing digital systems constitute new terrain and opportunities to explore understanding of Indigeneity and factors shaping decisions of Tribal peoples in science and technology).

[14] Rebecca Tsosie, *Tribal Data Governance and Informational Privacy: Constructing Indigenous Data Sovereignty*, 80 Mont. L. Rev. 229, 229–230 (2019) (defining Tribal Digital Sovereignty as authority to control data acquisition, storage, management, and use).

[15] Worcester v. Georgia, 31 U.S. (6 Pet.) 515, 559 (1832).

[16] *Cohen's Handbook of Federal Indian Law* § 4.01[1][a], at 206–207 (Nell Jessup Newton ed., 2019) (explaining that treaties recognize, rather than grant, inherent Tribal sovereignty, which predates the United States and persists independently of territorial boundaries).

The Gap Between Principle and Practice

The global movement toward ethical data management has produced important frameworks, yet these reveal critical gaps in protecting Tribal interests. The FAIR principles (Findable, Accessible, Interoperable, and Reusable) establish technical standards for data management but remain silent on sovereignty, collective rights, and cultural protocols.[17]

In response, Indigenous Data Sovereignty advocates developed the CARE Principles for Indigenous Data Governance:

Collective Benefit—ensuring data ecosystems function in ways that enable Indigenous peoples to derive benefit from the data

Authority to Control—recognizing the rights and interests of Indigenous peoples in relation to Indigenous data

Responsibility—those working with Indigenous data have a responsibility to share how data are used to support Indigenous peoples' self-determination

Ethics—data activities should be assessed for how they align with the rights and well-being of Indigenous peoples[18]

These principles recognize that Indigenous Data Sovereignty requires more than technical standards. Indigenous Data Sovereignty demands governance frameworks that respect collective rights and cultural protocols. Yet both FAIR and CARE principles share a fundamental limitation; they remain aspirational guidelines rather than enforceable legal obligations. A vendor can claim CARE compliance while extracting Tribal data for profit. A federal agency can acknowledge Tribal data authority while disclaiming liability when systems are breached. Without legal infrastructure, these principles remain suggestions that disappear when inconvenient or unprofitable.

This is where Tribal legal frameworks become essential. By embedding CARE principles into Tribal codes, contracts, easements, and business registration requirements, Tribes transform ethical guidelines into enforceable obligations. When Tribal codes mandate collective benefit from data use, they create a legal duty, not just an aspiration. When contracts require respect for Tribal authority over data, violations become breaches of contract, not merely ethical lapses. When easements specify responsibility to Tribal communities, infrastructure providers face regulatory enforcement, not voluntary compliance.

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[17] Mark D. Wilkinson et al., *The FAIR Guiding Principles for Scientific Data Management and Stewardship*, 3 Sci. Data 160018 (2016) (establishing technical standards lacking sovereignty considerations).

[18] Russo Carroll et al., *supra* note 9 (developing Indigenous-specific principles addressing collective rights and cultural protocols).

Sovereignty Across Digital Domains

This transformation from principle to practice manifests across the following interconnected domains.

Governance Domain

Every permit application, enrollment verification, and council meeting generates digital records. Without explicit digital jurisdiction, courts may apply limiting precedents from *Montana v. United States* to digital activities.[19] Sovereignty means establishing Tribal legal systems to regulate these activities rather than defaulting to state law.

Economic Domain

Tribal enterprises generate valuable data about customer preferences, revenue patterns, and operational insights. When gaming system vendors sell "industry insights" based on Tribal operations, sovereignty means controlling whether Tribal data is included. The striking parallels to early gaming compacts are instructive. Tribes often gave away excessive revenue shares then, and today's data agreements risk the same pattern because data compounds in value over time.

Health and Environmental Domain

Clinic patient records contain generational wellness patterns unique to Tribal communities. Environmental monitoring systems track changes to sacred sites. The CARE principle of collective benefit means nothing if vendors can monetize this data for pharmaceutical research or resource extraction. When vendor agreements include price escalation clauses for data storage, Tribes need enforceable alternatives guaranteeing access to their own information.[20]

Cultural and Linguistic Domain

Tech companies train AI on Indigenous languages scraped from public sources, treating sacred words as mere data points. Without legal enforcement, companies can claim ethical compliance

[19] 450 U.S. 544, 565–566 (1981) (creating precedent that courts may apply to limit digital jurisdiction without explicit Tribal assertion).

[20] National Congress of American Indians, *The State of Tribal Data Capacity in Indian Country: Key Findings from the Survey of Tribal Data Practices* (2018) (emphasizing the importance of Tribes' asserting control over their data and ensuring access to accurate, relevant, and timely Tribal data as part of their sovereignty).

while violating sacred knowledge restrictions. Sovereignty means controlling how cultural knowledge enters the digital age, ensuring language apps respect seasonal teachings and protocol restrictions through binding agreements, not voluntary guidelines.[21]

Workforce Development Domain

Building Tribal capacity means preparing the next generation to transform principles into practice. This includes not only arguing in courtrooms but also designing, managing, and securing the technologies that impact communities. Gaming showed the path from outside management to globally recognized expertise in under two decades. Digital sovereignty requires the same intentional capacity building.[22]

A Test of True Digital Sovereignty

Digital sovereignty becomes real when CARE principles become legal requirements:

- Contracts mandate collective benefit through Tribal data ownership.
- Codes establish Tribal authority over digital activities.
- Agreements create responsibility through data portability requirements.
- Ethics are enforced through Tribal forums, not voluntary compliance.

Conversely, digital sovereignty erodes when these principles remain suggestions:

- Vendors claim ownership of "derived" data despite ethical concerns.
- Contracts impose state law despite calls for Tribal authority.
- Price hikes force Tribes to pay for their own data despite principles of collective benefit.

Without enforceable frameworks, Tribes become "data deserts," with critical information extracted and monetized by others while Tribes pay increasing fees to access their own information.[23] Yet as gaming demonstrated, when Tribes assert sovereignty through law rather than relying on goodwill, they rapidly develop globally competitive expertise. Digital sovereignty offers that same opportunity.

The Four Buckets: Essential Legal Infrastructure

[21] *Id.*

[22] *Id.*

[23] Daniel Castro, *The Rise of Data Poverty in America*, Center for Data Innovation (2014) (defining "data desert" as geographic areas characterized by a lack of access to high-quality data that may be used to generate social and economic benefits).

Most Tribes fall into one of two situations. Some are already deep in digital operations with gaming databases humming, health records flowing, and online services running, but their legal frameworks lag behind. Others are just beginning this journey and have the opportunity to build legal infrastructure alongside digital development. Both paths lead to the same requirement: four essential buckets that outline crucial legal frameworks that every Tribe needs. These buckets represent more than abstract principles. They determine the difference between owning data and renting it back, between resolving disputes in Tribal courts and fighting in non-Tribal courts, between controlling infrastructure and surrendering jurisdiction. Importantly, when filling the buckets Tribes must ensure they are balanced.

Bucket One: Tribal Codes and Regulations

The first bucket represents the primary mechanism through which Tribes assert jurisdiction over digital activities. These codes must detail how Tribes govern the collection, ownership, and application of data while establishing the physical infrastructure that gives rise to Tribal assertions of power and jurisdiction.

Digital sovereignty codes must establish what triggers Tribal jurisdiction in digital spaces, defining thresholds that capture significant digital activities while remaining defensible in court. Effective triggers might include:

- Entities that collect data from 25 or more Tribal citizens
- Digital commerce exceeding $50,000 annually within Tribal territory
- Storage of any Tribal governmental data

Beginning with health and financial data provides the strongest foundation because courts inherently understand why these categories demand protection.[24]

The code must articulate Tribal authority across criminal and civil dimensions. Criminal authority might cover data breach prosecutions and identity theft, while civil regulatory authority addresses privacy violations and compliance standards. Civil adjudicatory authority ensures contract disputes and damage claims stay within Tribal justice systems. A practical approach starts with civil regulatory authority. It is easier to defend, does not require federal coordination, and provides immediate sovereignty benefits.[25]

Perhaps most critically, dispute resolution systems must actually work for digital controversies. Traditional Tribal courts, designed for family law and natural resource disputes,

[24] Water Wheel Camp Recreational Area, Inc. v. LaRance, 642 F.3d 802, 813–815 (9th Cir. 2011) (upholding Tribal regulatory authority over nonmember business conducting commerce with Tribe).

[25] *See* Matthew L. M. Fletcher, *Federal Indian Law* § 8.3 (2016) (explaining that civil regulatory authority represents the most defensible and judicially recognized basis for Tribal jurisdiction and the appropriate foundation for extending governance into emerging areas).

may struggle with arguments about cloud architecture or API (application programming interface) violations. This does not mean abandoning Tribal courts. Rather, it calls for expanding their capacity through:

- Administrative tribunals for routine data matters
- Specialized panels that include technical expertise
- Expedited procedures recognizing that data breaches cannot wait for typical litigation timelines

To demonstrate what this looks like in practice, Tribes should consider incorporating community standards that address their specific cultural values:

Model AI Community Standards Statement

The [Tribal Nation] recognizes that artificial intelligence technologies must serve our community while respecting our traditional values and protecting our most vulnerable members. All AI systems operating within our jurisdiction shall:

1. Protect the dignity and privacy of our elders, whose wisdom, stories, and traditional knowledge are held in sacred trust for future generations, not as data for corporate exploitation;
2. Safeguard our youth from algorithmic discrimination, ensuring technology supports rather than replaces traditional mentorship and cultural education;
3. Preserve our cultural sovereignty by preventing unauthorized use of our languages, ceremonies, songs, and traditional knowledge in AI training data sets without explicit Tribal Council approval and benefit-sharing agreements;
4. Maintain meaningful human oversight for all automated decisions affecting Tribal citizens' eligibility for health services, educational opportunities, employment, or other essential services; and
5. Ensure transparency by providing clear explanations in accessible language for any AI-assisted decisions that impact our community members.

Bucket Two: Contracts and Agreements

The second bucket recognizes that every vendor relationship, service agreement, and data-sharing arrangement represents either an assertion or a potential surrender of digital

sovereignty.[26] Tribes must draft contract provisions that explicitly address data ownership, intellectual property rights, and the scope of any limited waivers of sovereign immunity.

Data ownership provisions reveal sovereignty issues most clearly when vendors include language claiming rights to "derivative data" or "aggregated information." These terms may sound technical and limited, but in actuality, they often result in the transfer of significant Tribal authority. The sovereignty-protecting alternative requires specificity; all data, whether raw, processed, aggregated, or derivative, must remain the exclusive property of the Tribe, and vendor rights must be limited to the minimum necessary for service provision.[27]

Choice of law provisions carry hidden sovereignty costs when standard vendor contracts specify the laws of other sovereigns, such as Delaware or California, which removes disputes from Tribal justice systems. Yet vendors will often accept Tribal law governance if Tribes stand firm, particularly when coupled with fair arbitration procedures.[28]

Sovereign immunity waivers require surgical precision. Broad waivers can effectively eliminate immunity, while refusing any waiver can make contracts unenforceable. The solution lies in limited waivers that specify exact claims, venues, and remedies. The painful lessons from Tribes paying millions to access their own health data taught the importance of planning data return provisions during contract negotiation, not after relationships sour. Accordingly, every contract must specify how data returns when relationships end, including:

- Format requirements ensuring portability
- Timeline guarantees preventing hostage situations
- Cost caps avoiding extraction through exit fees

For health technology contracts specifically, Tribes should incorporate comprehensive data sovereignty language. The following is for illustrative purposes only:

Model Health Technology Contract Provision

Data Sovereignty and Ownership

Notwithstanding any other provision in this Agreement, all data collected, processed, stored, or generated through this health technology system shall remain the sole and exclusive property of [Tribal Nation]. This includes but is not limited to:

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[26] Crepelle, *supra* note 12, at 410–418, 425–426 (analyzing how each vendor agreement impacts sovereignty through contractual terms).

[27] Tsosie, *supra* note 14, at 267–270 (advocating for explicit Tribal ownership of all data forms including derivatives and aggregations).

[28] C & L Enters., Inc. v. Citizen Band Potawatomi Indian Tribe, 532 U.S. 411, 417–420 (2001) (demonstrating vendors will accept Tribal forum when coupled with fair arbitration procedures).

1. Individual patient health records and personally identifiable information;
2. Aggregate health statistics and population health data;
3. Predictive analytics and algorithmic outputs derived from Tribal data;
4. Metadata and system logs related to Tribal usage; and
5. Any derivative works or insights generated from analysis of Tribal data.

Vendor's rights are strictly limited to the minimum access necessary for system maintenance and support services as explicitly defined in Exhibit A. Vendor shall not use Tribal data for any purpose beyond service provision without prior written consent from the Tribal Council, which may be withheld for any reason.

Upon termination of this Agreement for any reason, all Tribal data shall be returned to the Tribe in mutually agreed industry-standard portable formats (including but not limited to HL7 FHIR, CSV, or JSON) within thirty (30) calendar days. Vendor shall provide certified destruction of all copies, backups, and derivatives within forty-five (45) days.

The Tribe retains the right to conduct quarterly audits of Vendor's data-handling practices and shall have real-time access to all Tribal data through secure APIs without additional fees or restrictions. Any use of Tribal health data for research, product improvement, or third-party sharing requires separate written agreement with specific benefit-sharing provisions recognizing the Tribe's contribution to medical knowledge and public health.

Bucket Three: Easements and Infrastructure

The third bucket recognizes that physical infrastructure remains the foundation of digital sovereignty. Fiber optic cables, cell towers, and data centers all require physical presence on Tribal lands. When courts interpreted infrastructure agreements as surrendering regulatory jurisdiction in the 1990s, the lessons learned must inform current digital infrastructure negotiations.[29]

The language preserving sovereignty must be explicit and comprehensive. Easements must specify that the grant conveys only the limited right to place and maintain infrastructure while the Tribe retains full regulatory jurisdiction over all activities conducted on, through, or related to the easement.[30] This includes environmental compliance, workplace safety, service obligations to Tribal communities, and critically, the data transmitted through that infrastructure.

[29] *See* Strate v. A-1 Contractors, 520 U.S. 438, 454–456 (1997) (showing infrastructure agreements can surrender jurisdiction if not explicitly preserved).

[30] National Congress of American Indians, *Tribal Infrastructure: Investing in Indian Country for a Stronger America* 45–48 (2020) (recommending explicit language preserving Tribal regulatory jurisdiction in all infrastructure agreements).

Spectrum rights, for example, represent a hidden battlefield where most Tribes do not realize they are already losing. These rights refer to the ability to control and manage the airwaves used for communication technologies such as radio, television, mobile phones, and internet services. The FCC often allocates spectrum over Tribal lands with minimal consultation, treating airwaves as federal resources rather than as aspects of Tribal territorial sovereignty.[31] Compounding the issue, the FCC has not consistently tracked or reported on Tribal access to spectrum, making it difficult for Tribes to defend or assert their rights.[32]

Despite these failures, Tribes can still take action to protect digital sovereignty. They can assert land use authority to require coordination before any infrastructure is installed. They can also leverage Tribal consultation policies in environmental and historical review processes. In addition, Tribes can adopt spectrum governance codes that define spectrum as a Tribal resource governed by Tribal law. Physical infrastructure, such as data centers, creates further jurisdictional opportunities. Every facility needs power, water, and permits, which provides leverage to secure tangible Tribal benefit.

Bucket Four: Business Entity Registration

The fourth bucket focuses on establishing business registration systems. Without comprehensive registration requirements, companies conduct digital business within Indian Country with no notice of applicable Tribal laws and often assume state jurisdiction applies by default.[33]

Business entity registration systems serve multiple sovereignty functions. They generate data essential for informed governance decisions, provide notice of Tribal regulatory requirements, and create a framework for tax collection and regulatory compliance. Registration requirements must capture both traditional physical presence and modern digital engagement, extending beyond businesses with buildings on Tribal land to include those with significant digital footprints in Tribal territory.[34]

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[31] *See* Federal Communications Commission, *2.5 GHz Rural Tribal Priority Window* (2020), https://www.fcc.gov/25-ghz-rural-tribal-priority-window (creating limited opportunity for Tribes to access spectrum over their lands after decades of exclusion).

[32] Government Accountability Office, *Tribal Broadband: FCC Should Undertake Efforts to Better Promote Tribal Access to Spectrum*, GAO-19-75 (Nov. 2018) (finding FCC failed to track or consistently report Tribal spectrum access).

[33] *See* Merrion v. Jicarilla Apache Tribe, 455 U.S. 130, 137–140 (1982) (recognizing Tribal authority to require business registration and impose taxes on nonmember entities in business relationships with the Tribe).

[34] *See* Buster v. Wright, 135 F. 947, 950 (8th Cir. 1905) (confirming early recognition that conducting business in Indian Country constitutes consent to Tribal jurisdiction).

Maintaining a Balanced Interlocking System

As previously mentioned, it is paramount that these four buckets maintain balance. Much like the plates of a scale, these buckets create an interlocking system where each element reinforces the others. Codes establish the law that contracts implement with specific parties. Easements control physical presence while registration captures everyone else operating in digital territory. Imbalance risks instability that threatens sustainability, and missing any element creates opportunity for sovereignty to be lost. Strong codes mean little if contracts waive their application. Perfect contracts are ineffective without jurisdiction to enforce them. Registration by itself, without legal grounding, amounts to little more than paperwork with no real effect.

Notably, most Tribes can implement basic versions of all four frameworks within 12 months. Starting where risk is highest—such as in health data or financial systems—offers immediate protection while also building institutional knowledge for broader implementation.

Learning from Experience: Gaming's Digital Lessons

The history of Indian gaming offers both inspiration and caution for digital sovereignty efforts. When Tribes entered gaming, the transformation from first compacts to global industry leadership took less than two decades.[35] That speed came with lessons that directly apply to today's digital challenges.

The Gaming Blueprint

In gaming's early days, management agreements with companies like Harrah's seemed necessary. Tribes needed external expertise to enter complex regulated markets. These arrangements typically involved significant revenue sharing and operational control ceded to non-Tribal entities. Yet within a decade, most Tribes had developed internal capacity to operate their own facilities, built sophisticated regulatory structures, and created a professional class whose expertise is now sought globally.

This transformation required parallel competencies: business operations alongside regulatory oversight, financial management with compliance systems, workforce development and vendor management.[36] This dual capacity of operating enterprises while regulating

[35] Indian Gaming Regulatory Act, 25 U.S.C. §§ 2701–2721 (establishing a framework for Tribal gaming operations).

[36] Kathryn R. L. Rand & Steven Andrew Light, Written Statement on the National Indian Gaming Commission, Prepared for the U.S. Senate Indian Affairs Committee Oversight Hearing on the National Indian Gaming Commission, 110th Cong., 2d Sess., at 12 (Apr. 17, 2008) (analyzing dual capacity requirements of operating enterprises while maintaining regulatory oversight).

industries created expertise that no other gaming jurisdiction matched, becoming Indian gaming's competitive advantage.

The Hidden Costs of Speed

While economically necessary, that urgency created vulnerabilities that persist today. The economic imperative to act quickly meant business operations often outpaced the development of legal frameworks designed to protect sovereignty.[37]

Vendor Lock-In

Vendor lock-in occurs when a Tribe's technology or data systems depend on one outside company's tools or platforms, making it hard or costly to switch providers or regain full control over Tribal data and operations.[38] Historically, Tribes have found themselves dependent on gaming systems, player tracking databases, and financial platforms controlled by vendors, with data about their own operations inaccessible or available only at premium prices. Today's digital vendor relationships present identical challenges, as critical data about Tribal citizens and operations remains under external control.

Regulatory Catch-Up

Many gaming operations launched before comprehensive regulatory codes were enacted, creating jurisdictional ambiguities and risking courts' resolving disputes against Tribal interests.[39] This pattern now repeats in digital spaces where Tribes engage in e-commerce, FinTech, and digital health without established regulatory frameworks

Talent Drain

Initial reliance on external expertise created knowledge dependencies that took years to overcome. Some vendor agreements included noncompete clauses preventing Tribes from hiring

[37] Gavin Clarkson et al., *Online Sovereignty: The Law and Economics of Tribal Electronic Commerce*, 19 Vand. J. Ent. & Tech. L. 1, 22–28 (2017) (documenting a similar issue of how speed of opportunity capture in e-commerce creates lasting sovereignty vulnerabilities).

[38] Jiawei Zhang, *The Paradox of Data Portability and Lock-In Effects*, 36 Harv. J.L. & Tech. 658, 667 (2023) (explaining that vendor lock-in occurs when users face substantial costs in switching from one platform to another, often due to data-based or non-data-based features that create dependency on a specific system).

[39] *See* California v. Cabazon Band of Mission Indians, 480 U.S. 202, 216–218 (1987) (establishing gaming rights but leaving regulatory gaps that required later clarification).

trained staff, forcing continued dependence even after developing internal capacity. Additionally, few vendor contracts contained knowledge transfer or training clauses to empower Tribal citizens. This often results in individuals migrating from their Tribal communities to areas with more educational and developmental opportunities. They often fail to return due to the lack of opportunity created by the previously discussed noncompete clauses.

Accelerating Patterns in New Sectors

These patterns have only accelerated with newer sectors. Financial technology ("FinTech") ventures—online lending operations, payment platforms, and other digital financial services built on Tribal charters or partnerships with Tribal enterprises—and businesses created to participate in the federal 8(a) Business Development Program moved faster than gaming, often launching within months of identifying opportunities.[40] The 8(a) program gives Tribally owned companies significant advantages in federal contracting, including set-asides and, in some cases, sole-source awards, which drove rapid business formation and expansion into off-reservation and online markets. Yet both sectors revealed how missing legal infrastructure creates exponential risks in digital spaces.

In Tribal lending, questions about jurisdiction, applicable law, and regulatory authority created costly litigation that continues today.[41] Some ventures operated under sovereignty assumptions that courts later rejected, not because sovereignty did not exist but because it had not been properly asserted through codes, agreements, and regulatory structures.

The 8(a) experience proves particularly instructive for digital sovereignty. Like data and digital services, 8(a) ventures often operate primarily outside Indian Country, raising complex questions about extraterritorial jurisdiction and applicable law.[42] Successful programs developed clear frameworks for when Tribal versus state or federal law applies. These frameworks are essential for digital services that transcend geographic boundaries.

Strategic Imperatives for Digital Sovereignty

Gaming's evolution teaches that sovereignty-based economic development requires the following strategic elements.

[40] *See* Crepelle, *supra* note 12, at 400–31, 428 (explaining how Tribes leverage their sovereignty to engage in FinTech ventures, such as online lending and cryptocurrency adoption, and participate in the federal 8(a) program to create businesses that capitalize on their sovereign status, noting that these ventures often launch quickly compared to gaming operations).

[41] *See id.* at 403–410.

[42] *See* 15 U.S.C. § 637(a); 13 C.F.R. pt. 124.

Legal Infrastructure First

Comprehensive codes establishing jurisdiction, regulatory authority, and dispute resolution must precede or at minimum parallel operations.[43] Gaming's progression from minimal compacts to sophisticated regulatory schemes proves that strong legal foundations enable rather than impede development.

Capacity Building as Investment

Resources devoted to developing gaming regulators and compliance officers seemed expensive initially but proved essential. Digital sovereignty demands similar investment in data governance professionals and cybersecurity experts.

Sovereignty-Centered Vendor Relationships

Gaming's evolution from unfavorable management agreements to partnerships respecting Tribal sovereignty provides guidance for digital relationships.[44] Every agreement either strengthens or weakens sovereignty depending on how it addresses control, ownership, and jurisdiction.

The Urgency of Now: Building Digital Capacity

Unlike gaming's gradual market maturation, digital transformation proceeds at unprecedented speed.[45] AI models are training on Indigenous languages today. Health data is being monetized now. Digital infrastructure investments are cementing based on current frameworks.[46] Tribes cannot afford sequential development with operations first and governance later because digital technologies entrench power structures that become increasingly difficult to change.

The gaming transformation proved Indian Country's capacity to rapidly develop world-class expertise. Digital sovereignty demands the same commitment but is compressed into a much narrower window. The question is not whether Tribes can achieve digital excellence

[43] *See* Fletcher, *supra* note 25 (emphasizing that the exercise of Tribal civil authority must rest on codified legal frameworks and that comprehensive Tribal codes are essential to sustain sovereign regulatory and economic governance).

[44] Clarkson et al., *supra* note 37, at 16–18, 30–31 (tracing evolution from unfavorable management agreements to sovereignty-respecting partnerships).

[45] World Economic Forum, *The Future of Jobs Report 2023*, at 4, 47 (2023) (documenting unprecedented speed of digital transformation compared to traditional industries).

[46] National Security Commission on Artificial Intelligence, *Final Report* 89-92 (2021) (warning that AI development timeline demands immediate action to shape rather than react to technology).

(gaming proved that capacity) but whether they can apply these lessons quickly enough to shape rather than react to the digital future.

Workforce Development

Digital sovereignty requires more than legal frameworks. It also demands human capital capable of implementing and maintaining these systems. Gaming's success came not just from favorable compacts but from developing Tribal professionals who could operate sophisticated enterprises. The transformation from outside management agreements to Tribally led, globally respected gaming operations was possible because Tribes invested in people—regulators, accountants, IT professionals, and executives who understood both sovereignty and business. Digital sovereignty requires the same intentional workforce development. Tribes need data governance officers, cybersecurity specialists, AI ethics reviewers, and digital rights advocates who are grounded in Tribal law and culture. Fortunately, several models already exist that Tribes can adapt for digital spaces.

Indian Self-Determination and Education Assistance: U.S. Code Chapter 46

Congress has enacted a number of employment and education measures specifically intended to support Native peoples. The Indian Self-Determination and Education Assistance Act (ISDEAA), now codified in Chapter 46 of the U.S. Code, reflects a clear congressional acknowledgment that federal domination of "Indian service programs" has harmed rather than helped Tribal communities:

> [T]he prolonged Federal domination of Indian service programs has served to retard rather than enhance the progress of Indian people and their communities by depriving Indians of the full opportunity to develop leadership skills crucial to the realization of self-government.[47]

From this, Congress built a statutory framework designed to transfer control over federal programs to Tribal governments and, critically, to foster Native leadership and professional capacity. Self-determination contracts and self-governance compacts are not simply mechanisms for shifting who signs paychecks; they are explicit tools for building Tribal expertise in administration, finance, program design, and service delivery. At its core, ISDEAA is a workforce development statute. It recognizes that sovereignty cannot be fully realized if external agencies continue to control the knowledge, skills, and career pipelines that shape day-to-day governance.

This same logic applies with particular force in digital spaces. If cloud architects, system administrators, and data scientists serving Tribal governments remain primarily non-Tribal employees of outside vendors, digital sovereignty will always be constrained. Applying ISDEAA's

[47] Indian Self-Determination and Education Assistance Act, 25 U.S.C. § 5301(a)(1).

reasoning to the digital era means intentionally cultivating Tribal citizens who design, manage, and secure the technologies that carry Tribal data and power Tribal decision making.

Tribal Employment Rights Ordinances (TEROs)

One of the most successful Tribal tools for building this kind of capacity has been Tribal Employment Rights Ordinances. TEROs assert Tribal authority over employment and contracting within Tribal territories. They typically require Indian preference in hiring for jobs on Tribal lands or funded with Tribal or federal dollars, establish contracting preferences for Indian-owned businesses, and create Tribal agencies to enforce those requirements and to support training and placement of Tribal workers.[48]

The Council for Tribal Employment Rights (CTER) has long documented how TEROs have shifted the balance of power on major construction, energy, and infrastructure projects. Rather than serving only as "host communities" while outside firms captured the long-term employment and expertise, Tribes have used TEROs to

- secure priority hiring for Tribal citizens,
- negotiate apprenticeship and training programs, and
- ensure that wages and working conditions on their lands reflected Tribal standards and values.

TEROs therefore are more than a jobs program. They are a jurisdictional framework that ties economic development to sovereignty by insisting that work conducted in Indian Country builds Tribal capacity rather than merely extracting labor and profit.

Adapting TEROs for Digital Work

The same TERO principles translate directly to the digital domain, but they require deliberate adaptation. Traditional TEROs were built around projects with a visible physical footprint—buildings, pipelines, roads. Digital work often has no such obvious presence. A data center may sit off-reservation while storing Tribal records; software development and system administration may be performed remotely; AI tools may be configured by consultants who never set foot in Indian Country. Without intentional updates, these activities can slip through the cracks of existing employment rights frameworks.

Adapting TEROs for digital works means, at minimum, three shifts.

First, Tribes can explicitly define "covered work" to include digital and remote services that materially affect Tribal operations or Tribal data, regardless of where the worker sits. When

[48] For general descriptions of TEROs and their implementation, see Council for Tribal Employment Rights, *TERO FAQ*, https://cter-tero.org/tero-faq/ (last visited Jan. 14, 2026); Council for Tribal Employment Rights, *About CTER*, https://cter-tero.org/about-cter/ (last visited Jan. 14, 2026).

a vendor provides cloud hosting, electronic health record support, or AI implementation for a Tribal government or enterprise, that work should trigger TERO-style obligations. Preference for qualified Tribal citizens and Tribal enterprises can extend to

- IT help desk and system administration roles;
- data analytics, cybersecurity, and network engineering positions; and
- software development, AI configuration, and digital project management.

Second, TEROs can be used to secure meaningful knowledge transfer, not just short-term employment. When vendors provide digital services, ordinances and related contracts can require them to

- train designated Tribal staff to administer and eventually lead systems;
- provide documentation, source configurations, and tools in forms that Tribal employees can use; and
- structure roles so that Tribal workers are not confined to entry-level support positions but are placed on clear pathways into senior technical and leadership roles.

These requirements mirror the way some Tribes used TEROs to negotiate apprenticeships in the construction trades; here, the "trade" is cloud architecture, data governance, or AI development.

Third, digital TERO provisions can guard against the talent drain that historically accompanied early reliance on outside expertise. Provisions discouraging noncompete clauses that lock trained Tribal workers into vendor employment, as well as incentives for vendors to support Tribal-based positions rather than relocating workers away from the community, align workforce development with long-term digital sovereignty. When paired with education partnerships and internal career ladders, these tools help ensure that the benefits of training remain within the community.

In this way, ISDEAA's vision and TEROs' mechanics converge in the digital context. Federal policy already recognizes that prolonged external control over key systems undermines Tribal self-government. TEROs operationalize that insight by requiring that work conducted in connection with Tribal governments and lands builds Tribal capacity. Extending those frameworks explicitly to digital work is therefore not a departure from existing practice but the next logical step in making digital sovereignty real.

The Progression to Self-Sufficiency

The shift from external dependence to internal expertise follows a predictable progression:[49]

[49] *See generally* Harvard Project on American Indian Economic Development, *What Can Tribes Do? Strategies and Institutions in American Indian Economic Development* 45–48 (Stephen Cornell & Joseph P. Kalt eds., 2010) (describing how successful Tribal governments build capacity

Phase 1: Managed Services—Tribes rely on external vendors and consultants while identifying Tribal members for training. Documentation requirements and knowledge transfer provisions are critical at this stage.

Phase 2: Joint Management—Vendors work alongside Tribal staff to transfer knowledge. This phase requires clear timelines, measurable milestones, and penalties for inadequate knowledge transfer.

Phase 3: Tribal Operation—Tribes fully operate their own systems, requiring outside support only for highly specialized needs. Success depends on retention strategies to keep trained personnel.

This progression requires strategic investment in education and training. Partnerships with Tribal colleges and universities can support curriculum aligned with sovereignty goals. Internship programs with technology companies can expose Tribal citizens to industry best practices. Professional development funding can help existing Tribal employees gain necessary certifications.

Strategic Procurement for Capacity Building

Procurement policy becomes a powerful tool for accelerating capacity. The Buy Indian Act provides procurement preferences for Indian-owned businesses, [50] but its application to digital services remains underdeveloped. Tribes should prioritize contracts with Native-owned technology firms to create market incentives for Tribal entrepreneurship. Joint ventures between Tribal enterprises and technology companies can combine sovereignty protection with technical expertise.

Strategic procurement can go beyond purchasing services. Tribes can structure contracts to include knowledge transfer by requiring:

- Vendors to document systems comprehensively
- Training for Tribal staff at multiple skill levels
- Development of Tribal-specific modifications that remain Tribal property

Building Internal Expertise

The most successful digital sovereignty initiatives invest in developing specialized roles within Tribal government:

by moving from externally managed services to self-administered and fully Tribally controlled operations).

[50] 25 U.S.C. § 5307(b).

Data Governance Officers—Responsible for implementing CARE principles, managing vendor relationships, and ensuring compliance with Tribal data codes

Cybersecurity Specialists—Protecting Tribal systems from external threats while maintaining operational efficiency

Digital Rights Advocates—Bridging technical and legal expertise to protect sovereignty in negotiations and disputes

AI Ethics Reviewers—Evaluating how AI systems impact Tribal communities and cultural resources

These positions require competitive compensation to attract and retain qualified professionals. The investment pays dividends through reduced vendor dependence, improved security, and enhanced sovereignty protection.

The AI Frontier: Culture in the Age of Algorithms

The convergence of AI and Indigenous knowledge systems presents a new frontier, bringing urgent challenges that demand immediate sovereign action. As AI systems train on Indigenous languages and incorporate traditional knowledge, often pulled from publicly available sources, Tribes confront a form of digital colonialism operating at unprecedented speed and scale.[51]

The Extraction Economy of Indigenous Data

Current AI development treats Indigenous knowledge as freely available training data. Tech companies harvest from published texts, recorded oral histories, and digitized collections without recognizing the sacred or restricted nature of this information within Indigenous contexts.[52] As a result, they:

- Incorporate traditional ecological knowledge while stripping its spiritual context
- Generate "Indigenous-style" content that violates cultural protocols
- Develop healthcare algorithms that may perpetuate bias or recommend culturally inappropriate interventions

This vulnerability stems from fundamental misalignments between Western intellectual property law (designed for individual ownership and commercial exploitation) and Indigenous

[51] Angela R. Riley & Kristen A. Carpenter, *Owning Red: A Theory of Indian (Cultural) Appropriation*, 94 Tex. L. Rev. 859, 875–882 (2016) (analyzing digital colonialism through AI appropriation of Indigenous knowledge).

[52] Rebecca Tsosie, *Indigenous Peoples and Epistemic Injustice: Science, Ethics, and Human Rights*, 87 Wash. L. Rev. 1133, 1141–1153 (2012) (documenting extraction of Indigenous knowledge without recognition of sacred nature).

knowledge systems that are collectively held, spiritually significant, and governed by cultural protocols.[53] Current copyright, patent, and trademark systems cannot protect knowledge that exists outside Western property concepts, leaving cultural patrimony exposed to algorithmic appropriation.

Beyond Individual Privacy

The privacy challenges extend beyond individual data protection to encompass collective rights fundamental to sovereignty. When genetic data reveals information about entire Tribal communities, when ceremonial documentation exposes sacred knowledge, or when language data includes restricted expressions, individual consent models fail. A single Tribal citizen cannot authorize uses affecting their entire nation. Similarly, external researchers often lack the cultural understanding needed to identify or properly handle sensitive materials.

Federal privacy frameworks built on notice-and-consent principles are inadequate, particularly when tech companies treat Tribes as cultural groups rather than sovereign governments with authority over their citizens' data. This governance gap enables continued extraction while Tribes lack meaningful recourse.

Asserting Sovereignty Over AI and Data

In response, Tribes are advancing a new paradigm for digital governance. They are asserting that data about Tribal citizens, territories, and resources constitutes a Tribal asset subject to Tribal law regardless of where the data is collected or stored.[54] This framework recognizes data as a sovereign resource requiring collective governance, similar to natural resources within Tribal territories.

Emerging governance models establish:

Sovereignty Over All Data Types—Governmental authority over aggregate data, derived insights, and algorithmic predictions, not just raw data[55]

[53] Riley & Carpenter, *supra* note 51, at 920 (explaining incompatibility between Western IP law and collectively held Indigenous knowledge systems).

[54] United States Indigenous Data Sovereignty Network, *Indigenous Data Governance Policy Brief* (2023) (asserting Tribal ownership over all data about citizens regardless of storage location).

[55] First Nations Information Governance Centre, *The First Nations Principles of OCAP* (2023) (establishing Ownership, Control, Access, and Possession framework for wide-ranging data types).

Collective Consent Protocols—Community authorization requirements for research, data collection, or AI training that implicate cultural knowledge, replacing inadequate individual consent models

Cultural Protocols as Technical Requirements—Translating sacred knowledge restrictions, seasonal limitations, or gender-specific access requirements into enforceable technical specifications and contractual obligations[56]

Reciprocal Benefit Requirements—Mandating capacity building, infrastructure development, and ongoing governance participation rather than one-time monetary compensation

Algorithmic Accountability

As AI systems and algorithms increasingly determine outcomes for Tribal citizens across healthcare, criminal justice, and social services, Tribes must assert jurisdiction over automated decision-making systems.[57] This includes:

- Rights to audit algorithms affecting Tribal citizens
- Mandates for transparency in decision-making processes
- Authority to prohibit uses violating Tribal values or sovereignty

Some Tribes are already developing AI systems that embed Indigenous values and knowledge systems, demonstrating that AI can support cultural revitalization rather than appropriation when Tribes control development.[58] These initiatives show AI needs not follow extractive models but can strengthen cultural transmission and enhance Tribal governance.

Leading Global Standards

Without comprehensive federal AI regulation, Tribes can leverage their inherent sovereignty to create governance frameworks that could influence global approaches to Indigenous data

[56] Local Contexts, *TK Labels*, https://localcontexts.org/labels/traditional-knowledge-labels/ (last visited Jan. 14, 2026) (demonstrating the inclusion of local protocols for implementation of access to cultural heritage and traditional knowledge in digital systems).

[57] Cathy O'Neil, *Weapons of Math Destruction: How Big Data Increases Inequality and Threatens Democracy* 105–122 (2016) (documenting algorithmic bias in criminal justice and social services affecting Indigenous communities).

[58] Jason Edward Lewis et al., *Indigenous Protocol and Artificial Intelligence Position Paper* (Indigenous Protocol & Artificial Intelligence Working Group & Canadian Institute for Advanced Research, Jan. 30, 2020) (demonstrating AI systems can embed Indigenous values when Tribes control development).

rights.[59] The international Indigenous Data Sovereignty movement strengthens Tribal positions by establishing Indigenous data governance as an emerging global standard.[60]

The window for establishing Indigenous governance over AI is rapidly closing. Each day without protective frameworks means more languages digitized without consent, more knowledge extracted for others' benefit, more sovereignty undermined through algorithmic systems. Yet with decisive action through comprehensive codes, technical capacity, and collective coordination, Tribes can transform data and AI from instruments of digital colonialism into tools for digital sovereignty.

Governing Together: Collaborative Digital Sovereignty Models

The challenges outlined in this article (vendor control, data extraction, AI appropriation, and jurisdictional gaps) cannot be solved by individual Tribes acting alone.[61] Digital transformation requires collective action that draws on Indian Country's history of cooperation while respecting the sovereignty of each Tribal Nation.

The Precedent for Collective Success

History demonstrates that Tribes achieve transformative change through unified action. The Indian Gaming Regulatory Act emerged from coordinated Tribal advocacy that overcame state opposition.[62] The Indian Child Welfare Act resulted from Tribes collectively documenting systematic family destruction.[63] The Violence Against Women Act's Tribal provisions were secured through collective demands for jurisdictional recognition.[64] These examples provide a template for asserting digital sovereignty: individual Tribal Nations maintain autonomy while building collective power to reshape governance systems.

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[59] National Institute of Standards & Technology, *AI Risk Management Framework* (2023), https://www.nist.gov/itl/ai-risk-management-framework (providing federal framework that Tribal governance could influence through sovereignty-based alternatives).

[60] Global Indigenous Data Alliance, https://www.gida-global.org (last visited Jan. 14, 2026) (establishing Indigenous data governance as emerging international standard).

[61] National Congress of American Indians, *supra* note 20 (recognizing digital sovereignty challenges require collective Tribal action).

[62] *See* 25 U.S.C. §§ 2701–2721.

[63] *See* Indian Child Welfare Act, 25 U.S.C. §§ 1901–1963 (emerging from Tribal documentation of systematic family destruction).

[64] *See* Violence Against Women Act of 2013, Title IX, 25 U.S.C. § 1304 (recognizing Tribal criminal jurisdiction over non-Indians through collective advocacy).

Models for Digital Cooperation

Given the diversity of Indian Country, collaboration must take different forms that preserve sovereignty while enabling shared access to critical resources.

Regional Consortiums

Regional consortiums allow neighboring Tribes to pool resources for infrastructure, cybersecurity, and technical expertise, achieving economies of scale impossible individually.[65] The Southern California Tribal Chairmen's Association's joint technology initiatives demonstrate how shared services preserve sovereignty while reducing costs.[66]

Tribally Owned Service Organizations

These organizations can provide specialized services (data centers, cloud hosting, security monitoring) under governance structures ensuring Tribal control.[67] This model, proven in healthcare through organizations like the Alaska Native Tribal Health Consortium, adapts well to digital services.[68]

Knowledge Networks

Knowledge networks share model codes, contract templates, and lessons learned without requiring joint operations, accelerating progress by preventing each Tribe from starting from zero. This approach frees resources for continued growth rather than forcing Tribes to duplicate their efforts.

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[65] Southern California Tribal Chairmen's Association, *Southern California Tribal Digital Village*, https://sctca.net/southern-california-tribal-digital-village (last visited Jan. 14, 2026) (demonstrating successful regional consortium for technology infrastructure).

[66] *Id.* (showing how shared services preserve individual sovereignty while achieving economies of scale).

[67] *See generally* Alaska Native Tribal Health Consortium, *Annual Report* (2025), https://anthc.org/wp-content/uploads/2025/12/ANTHC-Annual-Report-2025_FINAL.pdf (demonstrating a model for Tribally owned service organizations in healthcare applicable to digital services).

[68] *Id.*

Joint Negotiating Power

Joint negotiating power increases bargaining leverage. When Tribes jointly present standards for data ownership, jurisdiction, and sovereignty protection, vendors must meet these terms or risk losing access to the entire Tribal market.

Building Shared Resources

Sharing successful strategies strengthens capacity across Indian Country while respecting that each Tribe's unique circumstances (treaty rights, governance systems, and economic conditions) demand adaptable approaches.[69] Critical shared resources include:

- Tested contract provisions for jurisdiction and data ownership
- Technical standards that maintain interoperability without compromising sovereignty
- Workforce development curricula-building capacity across Tribal communities
- Model codes adapted to varied governance structures

When one Tribe develops effective solutions, sharing that knowledge reduces risk and avoids costly mistakes while preserving flexibility for local adaptation.[70]

Strategic External Partnerships

With appropriate protections in place to maintain control, Tribes can accelerate digital sovereignty through carefully structured external relationships.[71] Some technology companies increasingly recognize the value of demonstrating social responsibility through ethical partnerships, particularly in developing culturally appropriate AI and digital services.[72]

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[69] *See* Government Accountability Office, *Tribal Consultation: Additional Federal Actions Needed for Infrastructure Projects*, GAO-19-22 (2019), https://www.gao.gov/products/gao-19-22 (recognizing diverse Tribal circumstances require adaptable approaches).

[70] *See* Stephanie Russo Carroll, Desi Rodriguez-Lonebear & Andrew Martines, *Indigenous Data Governance: Strategies from United States Native Nations*, 18 Data Sci. J. 31, 10–11 (2019) (describing intertribal forums for exchanging tribal data best practices and recommending that Tribes share strategies and best practices while developing Tribe-specific governance principles).

[71] *See* Bureau of Indian Affairs, *Tribal Resilience Program Guide*, https://www.bia.gov/bia/ots/tribal-climate-resilience-program/tribal-resilience-resource-guide-trrg (last visited Jan. 14, 2026) (demonstrating strategic external partnerships maintaining Tribal control).

[72] *See* Microsoft, *AI for Good Initiative: Indigenous Communities*, https://www.microsoft.com/en-us/ai/ai-for-good (last visited Jan. 16, 2026) (representing technology sector recognition of value in ethical partnerships).

These relationships must ensure Tribal benefit and governance participation, not merely extraction with compensation. Tribes should define the terms of engagement to include:

- Knowledge transfer requirements
- Enforceable data protections
- Design processes rooted in Tribal values
- Ongoing governance participation

When governed properly, external partnerships can support sovereignty rather than compromise it.

Overcoming Collaboration Barriers

Legitimate concerns must be addressed to enable effective cooperation.

Sovereignty Preservation

Governance structures must clearly maintain autonomous decision making while enabling collective action. Each Tribe retains control over its participation level and implementation approach.

Resource Competition

Federal funding that creates zero-sum competition between Tribes undermines collaboration. Advocacy for adequate appropriations that support all Tribes is essential.

Capacity Disparities

Collaborative models must benefit participants regardless of their starting position in digital development. Those with advanced infrastructure share expertise while those building capacity contribute other strengths.

The Power of Unified Action

When Tribes develop ethical AI frameworks, privacy-preserving technologies, or community-centered data governance, they offer models for a digital future serving human rather than corporate values. This positions Tribes not as supplicants seeking entry to the digital economy but as leaders showing better paths forward.

The power of unified action becomes clear when considering the scale of collective Tribal resources. Millions of citizens, billions in economic activity, and governmental authority over vast

territories are at play. When this collective strength focuses on digital sovereignty, it can reshape how technology companies operate in Indian Country and influence global standards for Indigenous data rights.

Conclusion: The Scale of What's Possible

Tribal Digital Sovereignty is not an abstract aspiration but an immediate necessity. Every day without comprehensive frameworks means more data extracted, more sovereignty eroded, more opportunities lost. Yet the digital age presents a unique convergence of unprecedented threats alongside transformative opportunities. Unlike previous economic ventures where Tribes entered established markets, digital sovereignty offers the chance to shape emerging technologies from inception. As Indian Country proved through gaming's transformation, Tribes possess the capacity to achieve digital excellence when committing resources to sovereignty-based solutions.[73] Right now Tribal Nations can define ethical digital governance—particularly in controversial matters like AI—before industry standards solidify and establish data sovereignty frameworks, even while digital rights remain globally contested.[74]

The stakes transcend technology itself. Digital sovereignty impacts our very lifeways. It can determine the survival of Tribal languages. It can decide whether our cultural knowledge becomes training data for others' profit, whether health information serves communities or enriches corporations, whether economic opportunities flow to Tribal citizens or bypass them entirely. When we assert sovereignty over digital frameworks, we can model governance that prioritizes community over corporate profit and collective benefit over individual extraction—offering alternative paths in an era when digital technologies often undermine human dignity.

Gaming allowed decades for capacity building; digital transformation measures its timeline in years, months, and even days. The lessons from gaming are clear: legal infrastructure must precede operations, vendor relationships must preserve sovereignty, workforce development requires immediate investment, and collaborative approaches must multiply Tribal power while preserving autonomy. The resources exist. The legal frameworks are emerging. The collective power of Indian Country stands ready.

The digital future is being written now—in code, in law, in corporate policies, and in governmental decisions. Tribes must be authors of their own digital destinies, not subjects of others' designs. This is the moment for Indian Country to assert comprehensive digital sovereignty and ensure that Tribal sovereignty in the 21st century is exercised as powerfully in

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[73] *See generally* Joseph P. Kalt, *The State of the Native Nations: Conditions Under U.S. Policies of Self-Determination* (2007) (documenting repeated success in sovereignty-based solutions).

[74] National Security Commission on Artificial Intelligence, *supra* note 46 (identifying convergence of AI threats and opportunities); Bureau of Indian Affairs, *supra* note 71 (recognizing unique positioning of Tribes to shape emerging technologies).

digital spaces as on ancestral lands. When Tribes commit to digital sovereignty with the determination that built gaming excellence, they will not merely adapt to the digital age—they will lead it. The time is now. The opportunity is here. The choice belongs to Indian Country.