

On Half-Built Assemblages: Waiting for a Data Center in Prineville, Oregon

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Abstract

In 2010 the mega-corporation Facebook finalized an agreement to build a massive data center in Prineville, a small town in central Oregon previously known for logging, cattle ranching, and as the headquarters of the Les Schwab tire company. This was a largely unanticipated event that local leaders nonetheless prepared for several decades before when they designated a rural economic zone on the outskirts of town. However, the enterprise zone sat mostly unused, an empty and dusty piece of high desert land dotted with sagebrush and juniper trees. I describe the preparatory efforts that laid the groundwork for the data center as effecting a “half-built assemblage.” Through such anticipatory reconfigurations, local leaders recognized the limits of regional government to overcome the challenges of their peripherality. In the controversy surrounding such data center deals, critics have often cast rural leaders as naive or as pandering to voters. However, I argue that the alliance with Facebook was one of the few courses of action available to local leaders that had any chance of realizing regional economic development goals. In seeking to understand the data center deal from a local perspective, I contribute an alternative notion of temporality to materialist theorizing by looking across much longer durations of time in relation to the political economy, the natural world, and other elements as a way to temper exaggerations of anthropocentric agency and the narrow attribution of blame.

Keywords

data centers; assemblages; Facebook; temporality; materiality

Scenes from the Launch of the Data Center

In 2010, Facebook announced that Prineville, Oregon (population 9,200) would be the location of the company’s first wholly owned data center. The selection of this small, high desert town, long identified with logging and cattle ranching, seemed improbable. The company’s timing was, nonetheless, providential. After years of slow decline and loss in the area’s traditional industries (timber and wood products) the county had been hit by a recession-provoked unemployment

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rate that neared 20% in 2009, the highest of any county in the entire state. Facebook's arrival seemed to clear the way for a long hoped-for economic revival in the region.

The opening of the Facebook data center a year later, in 2011, was a major media event. The grand opening drew a crowd of local and state officials, Facebook executives and employees, newspaper reporters, and other members of the media. In a tent next to the data center, speakers stood on a podium with a large, novelty "like" button with Facebook's recognizable thumbs up icon. The facility was officially inaugurated when they collectively pressed the button, illuminating it to laughter and applause.³

Perhaps most memorable was Facebook CEO Mark Zuckerberg's surprise appearance. Prineville's mayor, Betty Roppe, who had been involved in the project from the early stages and was already tipped off about his visit, was prepared to greet him. Roppe was a longtime resident of rural Oregon and had lived for years in a remote forest ranger station before moving into town in the 1980s. She'd raised seven children and told me she was herself a Facebook user. She found it helpful for keeping in touch with her far-flung family members. At the event, she presented Zuckerberg with an orange hoodie that said "Prineville" and "Crook County." This was not her first choice for a gift. She'd wanted to give Zuckerberg a cowboy hat, but said his team dissuaded her. A hoodie was more Zuckerberg's style (Hogan 2017). When I met with her in her office at Prineville city hall in February 2017, she commented, "he's *really* shy." At the event she'd hugged him. As she explained, "I'm a hugger," though in the aftermath she noticed he'd turned "beet red." Alluding to her maternal feelings toward the young CEO, she mentioned that she had sons of her own.

The growing mountain of posts, chat messages, images, and videos that fill the newsfeeds of Facebook's 1.59 billion users necessitated the construction of this data center. An expanding user base combined with increased file sizes pushed for bringing server storage and retrieval "in house," providing the corporation with greater control over network security and cost management. Inside, the data center has the appearance of a vast electronics warehouse. Identical, interchangeable servers are stacked in racks, their LED lights blinking twenty-four hours a day maintained by a crew of data center technicians who travel the facilities vast distances on bicycles or scooters. Since the data center's initial groundbreaking, construction has carried on continuously. Five data halls have been built with two currently under construction. Each data hall is between 150,000 and 450,000 square feet (a range from 2.5 to 8 football fields). Apple, following on the heels of Facebook, has built its own data center facility in Prineville as well. This development has been a boon to the local construction industry. Membership in the IBEW, the union that represents electricians, wiremen, and other related skilled trades, has doubled. These monumental data centers demonstrate how the digital ephemerality of social media, once it becomes massively scaled, translates into something unquestionably *material* (Hu 2016; Holt and Vonderau 2015).

However, data center deals across the US have been a source of controversy (Tarczynska 2016). While attention has been paid by scholars to the extraordinary environmental impact of

³ "Data flows at Prineville Data Center." *The Bend Bulletin*. April 16, 2011.

these facilities, which consume massive amounts of electricity and water (Edwards 2020; Hogan 2018; Hogan 2015; Levenda and Mahmoudi 2019), here I focus on the accusation that they are bad deals from a public and tax policy perspective. In an LA Times op-ed titled, “Apple breaks new ground in squeezing locals for huge tax breaks while offering almost no jobs,” journalist Michael Hiltzik criticizes a deal struck between Apple and the town leadership of Waukee, Iowa (population 19,284) to build a data center in that suburban community outside of Des Moines.¹ In his account both Apple corporation and its representatives as well as Waukee’s elected officials are pilloried, the former cast as exploitative, the latter as gullible. In quantitative terms he measures, on one side, tax abatements (amounting to \$208 million) and, on the other, the number of local jobs Apple committed to creating (a mere 50 permanent positions). Simple division produces a figure of \$4.1 million per job. Hiltzik describes this figure as though the town itself had fronted this money, arguing that it leaves the town, “deeply in the red.” While Apple is not left blameless in his account, Hiltzik reserves his most florid condemnation for the town leadership. They are, in his words, “patsys” and “suckers” who should have, “hung their heads in shame.” For a time, the op-ed headline included the snide term “yokels,” a term of derision uniquely applied to people from rural localities. Academic policy analysis often apports a considerable share of the blame on local leaders, though framing it more politely. A lengthy analysis by Jensen and Malesky (2018) argues that the best explanation for why the use of incentives to attract business is so widespread at local and municipal levels of government is primarily due to local politicians pandering to voters.

On the surface Prineville’s deal with Facebook appears to be just the type of scenario critics have sought to expose. In exchange for a 15-year period of property tax abatements, Facebook committed to offering a certain minimum number of jobs (initially 35) at a pay rate at least 150% of the county average.² The initial deal added up to \$2.8 million per year in tax relief. All of these figures have undoubtedly increased with the expansion of the data centers. Yet local leaders, like Mayor Roppe, saw the deal as a “no-brainer.” County Judge, Mike McCabe, noted that they collected no taxes at all on the land before Facebook purchased it and defended the tax abatements on those grounds. “*You don’t give up something you don’t have,*” he stated in a local newspaper story.³

Between the celebratory recountings by technology and business journalists (i.e., a Wired headline from 2011 read, “Facebook Dons Cowboy Boots, Rides into Desert for Economic Rescue”) and the harsh criticism from op-ed writers, academics, and policy advocacy organizations, the perspectives of small town officials who negotiate these deals has been less often considered. By taking such an approach here, I build on work by Alix Johnson (2019) on the local reception of a data center in Iceland and Astra Vonderau (2017) on the ways local officials negotiated a Facebook data center in Luleå, Sweden. Furthermore, both laudatory and critical

¹ “Apple breaks new ground in squeezing locals for huge tax breaks while offering almost no jobs.” *The Los Angeles Times*. August 25, 2017.

² Local leaders stressed several times that the tax abatements applied only on improvements to the land. The town also made arrangements for Facebook to contribute “payments in lieu of tax” (PILOT) to address the burden the facilities place on city services (such as emergency response).

³ “Local business enterprise zone turns 10 years old.” *Central Oregonian*. July 17, 2012.

accounts tend to take a foreshortened view. The much broader historical context within which such events unfold has been largely unreported. In this article I consider the Prineville data center deal as situated in a much longer local struggle over rural development, recovery, and revival in the wake of dwindling natural resource industries.

While rural localities may be multiply connected to urban sites and global flows, they often occupy a position of relational disadvantage thrust into changing circumstances set into motion elsewhere and over which they have weak influence. What the narrative of small town officials duped by slick corporations accomplishes is a displacement and concentration of blame. The harsh realities of rural spatial marginality are recast as the incapability and inferiority of its leaders. In recounting the story of Prineville's data center boom I address a question that is at the heart of rural development, the question of local efficacy, "a capacity to make something new appear or occur" (Bennett 2010: 31). Efficacy is a central concern of rural officials and representatives themselves. In particular, the enrollment of distant agencies (such as Silicon Valley based mega-firms like Facebook) is, as I will show, a sensible adaptation made by rural leaders like Mayor Roppe, though not without compromise and risk.

Theorizing the Temporality of "Assemblages"

In the course of examining rural development through the Prineville Facebook data center, this article also makes a theoretical contribution to thinking about *temporality* in materialist theories that employ "networks" and/or "assemblages" as a structuring concept. Emerging in the 1990s, the materialist turn sparked by Science and Technology Studies (STS) has reverberated across established disciplinary fields including sociology (MacKenzie 2018), anthropology (Miller 2005; Ingold 2012), geography (Müller 2015), and philosophy (Barad 2007; Bennett 2010; Coole and Frost 2010). It considers the social significance of the human-made and natural worlds non-deterministically and as specified in time and space. One intention in granting matter a temporal sense is to avoid the atomism of thinking about things-as-objects and to allow the agency of non-humans, their capacity for force beyond human intentions, to be reckoned with. The tendency, however, is toward depictions of temporality as vibrant, fluid, and precarious (Bennett 2010; Deleuze and Guattari 1987; Ingold 2012). Actor-Network Theory asserts a notion of performativity, the continual moment-by-moment making and remaking of the socio-material world (Law 2007). This notion does similar work to assert the consequentiality of the material but without falling into a crude determinism.

I consider temporality, instead, in the act of *waiting*. Waiting is experienced within a particular rhythm of material unfolding, often one that is slower than expected or desired. In the

⁴ In gathering evidence, I pursued a broadly ethnographic and interpretivist approach. From 2017 and 2019 I visited Prineville to locate key sites, attend community events, and conduct interviews. Out of the 44 total interviews I conducted in central Oregon, 12 were with local leaders involved in or impacted by the Facebook data center deal. I also reviewed archived copies of the local newspaper, the *Central Oregonian*, and spent time reading in a community Facebook group where local issues, including the data centers were discussed.

decades prior to the Facebook data center's grand opening in Prineville, despite the efforts of leaders, little was happening to reverse the economic drain of jobs, incomes, and (ultimately) residents. Without knowing what might be on the horizon, local leaders sought to position the community for economic growth through *anticipatory reconfigurations*. A key example is the establishment of Crook County's rural economic zone, which would offer tax abatements to businesses that bought land and built facilities in this zone. Yet, for a long stretch of time, many years, the zone sat empty. The efforts of local leaders were knowingly incomplete; their aims could not be fully realized by the resources within local reach or command.

To the existing theories of materiality I contribute the notion of the *half-built assemblage*, one awaiting completion. Local leaders, I found, recognized that their ability to act was constrained. They were reliant on actors operating from a distance who were indifferent to the needs and desires within the locality. Waiting, uncertainty, and indeterminacy were core to their experience. The half-built and indefinitely delayed are a primary indication of their marginality. In recognizing this, we can see that instead of being duped into a bad deal by their inability to discern, small town leaders are hopeful agents acting in the limited ways available to them. In this light, a comment made by former Prineville City Councilmember Jason Carr, who described the Facebook deal as something that happens "*once in a generation*," reads as a realistic assessment of what might be a community's last chance rather than as a case of credulous local leaders succumbing to tech hype. Anticipating no other likely development of such a magnitude in the near future, local leaders did not hesitate in doing what was required to secure the data center agreement.

My assertion about time, however, jars with how assemblage theories have come to emphasize the temporality of the material—as unstable, performative, fluid, or vibrant. This temporal notion has been critiqued, in part, for the way it seems unable to accommodate the sociological concept of structurally entrenched disadvantage. It is sometimes addressed in scholarship by welding together a materialist perspective with some other one to address a notion of power or social structure. For example, in explaining high-frequency trading practices in the financial industry, MacKenzie (2018) joins an ANT approach with field theory. Doing so allows him to consider the material consequence of fiber optic infrastructure in automated trading as well as the meso-level structuring of the financial industry and its rules and practices. However, instead of considering (or reforming) the temporality of a *completed* assemblage, as MacKenzie does, I try a different analytical approach by looking at the period where an assemblage remains *incomplete*. Time is measured in the duration to realize completion. This way of addressing temporality aligns with a broader historical scope of analysis in a more conventional sense. In particular, I trace the events that ultimately led to the Prineville data center grand opening over the longest possible time period.

The Origins of the Data Centers

Possibly the earliest groundwork for Prineville's data centers were tectonic events—specifically, a landslide that geologists date to around the year 1430. This landslide fully blocked the Columbia

River for a few months and produced an impassable section of rapids as well as a river elevation drop the engineers later recognized had great hydroelectric potential. In the 1920s the US Army Corp of Engineers proposed building a series of dams and a lock along the river, but due to limited demand for both power and river transport, the plans were left unimplemented. It wasn't until the Franklin Delano Roosevelt administration that the dam project was greenlit as a public works effort, part of the New Deal. Both the Bonneville and Grand Coulee dams were constructed in the depths of the Great Depression. Others were built in later decades and, to this day, the dams all along the main riverway of the Columbia River remain federally owned (Barry 2017).

In Roosevelt's speech at the site of the Bonneville dam (then still under construction) on August 3, 1934, he boldly pronounced, "*Never shall the Federal Government part with its sovereignty or with its control over its power resources, while I am President of the United States...power that we are developing here is going to be power which for all time is going to be controlled by the government.*" His tone is a striking contrast with the softening of contemporary political language situated by neoliberalism, a language that speaks instead of private-public partnerships and leveraging entrepreneurial approaches to government. Instead, Roosevelt argued that electricity was no longer a luxury, it was a right, "*where a community, a city or county or a district, is not satisfied with the service rendered or the rates charged by the private utility, it has the undeniable basic right, as one of its functions of Government ... to set up ... its own governmentally owned and operated service.*" He asserted not only a right to obtain power, but also a right to seek better service at more favorable rates. Roosevelt saw the private utilities as adversaries, lamenting, "*the selfish purposes of these utility leaders who have talked of radicalism while they were selling watered stock to the people*" (Barry 2017). Apart from electricity generation, the impetus for dam construction was to create jobs in a period of severe economic downturn. The Bonneville dam was a project of the Works Progress Administration (WPA), an agency created during the Great Depression specifically to provide jobs, much of it essentially infrastructure projects.

Hydroelectric power from this chain of federal dams on the Columbia River remains managed and marketed by the Bonneville Power Administration (BPA), a federal agency established by US Congress in 1937. BPA sells power at cost to utility companies who then provide service to end customers. This inexpensive electricity supply is therefore a product of geology and topography but also of actions taken in passing political eras with effects that have become materially entrenched even as political winds have shifted. In Roosevelt's era, government owned infrastructure had widespread public support. Compared to the measure of time marked by the quarterly report in the private sector, the story of federal hydropower is a reminder that the pay-off of investment in some contexts is better assessed over much longer time periods.

As is starting to become apparent in this history, the purposeful actions of human agents are a part of but not the whole of this story. To speak of anything or any one person *driving* the region toward its data center future is misplaced. It is to assume more planning and prescience than is warranted. It is also inapt to use the language of *cause and effect* in explaining what compelled Facebook to locate their data centers in Prineville. A cause, Bennett argues, is "a

singular, stable, and masterful initiator of effects” (Bennett 2010: 33). She offers causality as misleading (an “alien category”) in historical accounts. While we might perceive causes in hindsight, were we to roll back history we would find they lack predictive power. Furthermore, it is neither workable nor plausible to produce, in the present day, the necessary string of events that were unique possibilities of a particular time and place, never again to be precisely recreated. In its place I pursue an account of the *origins* of the data center, “a complex, mobile, and heteronomous enjoiner of forces” (Bennett 2010: 33). This orientation serves as a way to illuminate the past—not as a guide to reproduce (or avoid) it, but to critique the ways in which accountability and blame are often foreshortened.

While cheap electricity is the most critical must-have for data centers that consume so much of it, there were other important events in the more recent history of the region as well that laid groundwork for the data centers. In the 1990s there was a brief political battle between Crook County officials and the State of Oregon. In 2001, a fund of around \$70 million had been provided by incumbent telco US West in exchange for deregulation.⁷ The fund would be used to lay fiber throughout the state based on a plan devised through a two round application process.⁸ A fiber line through Crook County was cut from the plan when the total budget was reduced, but persistent local officials, after traveling to the state capitol to testify in person, were able to have this fiber line reinstated. At the time, this infrastructure was framed as a way to attract “high tech” and “new jobs” and as critical to the “industrial survival” of the county.⁹ The removal of Crook County from the plan was seen as a baldly political move, a signal of the county’s lack of sway in Portland-dominated state politics as a political cartoon from the local newspaper, the *Central Oregonian*, attests (see Figure 1).

A more certain influence over Facebook’s decision to locate in Prineville was the existence of a rural enterprise zone. In 2001, the city of Prineville sought and received this zoning designation from the State of Oregon for an area at the western boundary of the town. It set aside a sizeable area of land for industrial investment. The land was prepared and connected to basic utilities, natural gas, electricity, and road infrastructure. Tax abatements for anywhere from 3 to 15 years (depending on the level of investment) could be granted to firms that purchased land in this zone. In exchange, firms committed to hiring a certain number of workers in the area at a specified salary level, 150% of the county average. In designating the enterprise zone, the city of Prineville sought to bring new jobs to the area that could be filled by the existing workforce. Scott Cooper, who championed and pursued the enterprise zone designation during his time as an elected county official, stated that the aim was to bring in more manufacturing jobs, “*because our workforce was geared toward manufacturing.*” The promise of the zone was envisioned as a way to secure the continuation of dominant existing industries and the labor force tuned to and trained for these industries. Dick Brown, the city planner for Prineville at the time, suggested that the enterprise zone could incentivize the Les Schwab tire distributor, already a major employer with deep roots in the community, to build their next warehouse expansion in Prineville instead of

⁷ See Oregon State Bill 622 (1999).

⁸ “Senate Bill 622 focus of Thursday’s public hearing.” *The Central Oregonian*. March 13, 2001.

⁹ “Plan benefits Portland over the needs of rural Oregon.” *The Central Oregonian*. February 22, 2001.

Sacramento (as had been rumored).³⁰ These visions of what the enterprise zone would be used for reflect a certain limited imagination among local leaders.

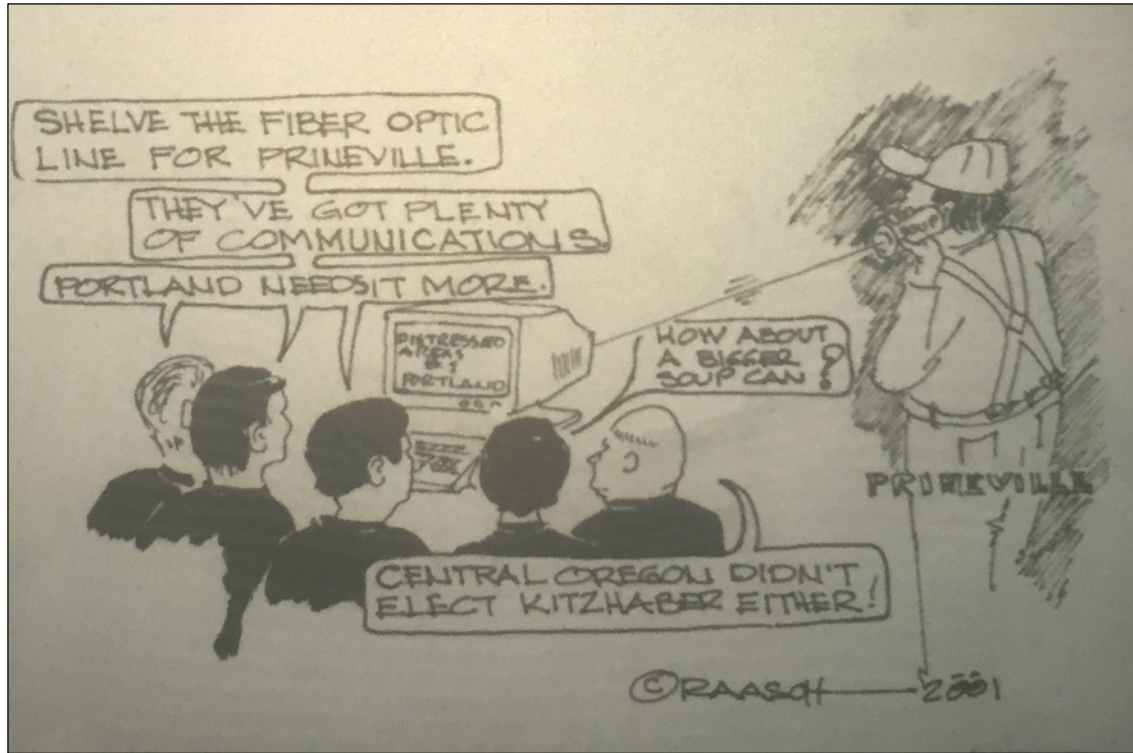


Figure 1. Prineville's perceived exclusion from state-level deal making around fiber optic infrastructure— political cartoon from February 22, 2001 issue of the Central Oregonian newspaper.

Looking back, Cooper reflected on his expectations as a failure to anticipate economic trends: “Now globalization came along right in the middle of all that and upset the equation. It looked different in 2000 than it does in 2017. We thought we had a fighting chance at bringing manufacturing jobs back. I no longer believe that.” This reconfiguration of possibilities through the creation of the enterprise zone aimed at one thing, but ultimately lined the region up for something else entirely. This lack of foresight wasn't a case of provincial short-sightedness; data centers were not on anyone's radar. In 2001, Facebook had not yet even been founded. That event took place three years later in Cambridge, Massachusetts.

The enterprise zone designation also wasn't a *de novo* invention of Prineville or Crook County. Clearly the assemblage that eventually yielded the data centers in Prineville stretches across all levels of government, as evidenced by the Depression-era federal hydropower program. This assemblage pulled together agencies and actors from the municipal level up to the

³⁰ Sheehy, Bill. (2001). “Enterprise Zone Designation Sought by Prineville.” *The Central Oregonian*.

federal and spanned a significant time period. The county went through the process to establish its zone in 2001. However, the enterprise zone program they made use of came into being through state legislation 16 years prior, in 1985. It was run by the state of Oregon and targeted specifically “communities at the center of or outside major metropolitan areas for which geography may act as an economic hindrance.”¹¹ In the year that this legislation was passed, Mark Zuckerberg was a one-year old baby. Smartphones had not yet been commercialized and the Internet was still known as Arpanet and comprised only a few dozen research institutions.

In sum, the tax abatements Facebook availed itself of in 2009 were already on the books 24 years before. This program and its particular schedule of tax incentives and qualification criteria had been planned out and defined at the state level. Furthermore, officials at the state level have to sign off on enterprise zone deals. This is definitive evidence against an argument that small town leaders, in a thrall to big tech, are convinced to, “give away the farm.”¹² Local leaders, in this case, were adhering to the guidelines of a state-wide enterprise zone program, enticing Facebook with tax abatements at the level specified by that program, a program that long predates the current instantiation of the Internet economy buoyed by social media companies like Facebook.

The Half-Built Assemblage

The enterprise zone sat mostly unused for ten years, an empty and dusty piece of high desert land dotted with sagebrush and juniper trees. In the preparatory work of establishing the enterprise zone, the sketchy outline of something aspired to is apparent. There’s terminology in the policy world for work of this sort, specifically for projects of zoning and infrastructure building that await completion. In economic development it is called “readiness,” (as in projects that are “shovel ready”) or “capacity building.” Such efforts are *anticipatory* reconfigurations. They produce assemblages that are knowingly half-built. They attempt to pave the way for things that will exist later, but cannot be advanced further with the resources at hand. They await forces that are beyond the pull of local agents. They do not yet have distinctive effects as a completed assemblage would, but anticipate such effects. In these half-built assemblages local leaders recognize the limits of government and, in rural regions in particular, they accede to the challenges of their peripherality.

While it is tempting to view each event considered so far as a kind of cause, the landslide, the Great Depression, public figures like President Roosevelt, the Columbia River dam system, fiber optic cables, and enterprise zone legislation, they have effects that are emergent. This history does not readily support classical notions of causality, as a “vector of influence between separate events”; rather, each event is reconfigured as possibility. The origins of the data center are found in the processes that “effect what’s real and what’s possible, as some things come to matter and others are excluded, as possibilities are opened up and others are foreclosed” (Barad

¹¹ Sheehy, Bill. (2001). “Enterprise Zone Designation Sought by Prineville.” *The Central Oregonian*.

¹² Quote from letter to the editor in the Central Oregonian.

2007: 393). Each alteration in the landscape moves the story forward, but its actors have only vague notions about the eventual outcome. The trajectory leading to the data center only appears linear in hindsight.

In hindsight, prior events in time appear to have led in an orderly and sequential way to the data center. My choice of topic, however, frames the way I trace this history as I specifically hunt for the precursors that shifted the region in favor of the data center developments. This is an admittedly revisionist approach. Early on, there was no such clarity of vision among local leaders who underlined the sense of diffuse agency and indeterminacy with each consequential decision. Scott Cooper, who was instrumental in establishing the rural enterprise zone during his time as a county official noted, *"We didn't have any idea what was coming."* Likewise, Jason Carr noted, *"We didn't even recognize the assets that we had as a community to serve these data centers."* An empty enterprise zone awaiting investors has precisely this feeling of stasis that new materialist theories tend to resist. However, stasis is only apparent within a narrowed temporal scope. Stasis, partiality, and incompleteness, and consequent judgments of failure (or success) depend upon one's historical vantage point. When we look back we see a completed assemblage, but must recognize it as one that took several decades to be realized and that it was never inevitable.

Regional Pressure

Competition between localities also animated the processes leading to the data centers. The initial creation of the enterprise zone in Crook County was motivated, in part, by the existence of such zones in neighboring Jefferson and Deschutes counties. Crook County, lacking an enterprise zone, was consequently disadvantaged by its neighbors in trying to attract new industries. While the county delayed in setting up an enterprise zone, the nearby competition is what ultimately motivated their effort to create one.²⁸ Some critics of data center deals suggest that a core problem is precisely this sort of "race to the bottom" or "bidding war" whereby localities create deals that grant more and more to companies while asking for less and less in return (Tarczynska 2016).

Even with the enterprise zone, however, a number of nearby locales possessed precisely the same features as Crook County. The Bonneville Power Administration sells its cheap electricity at cost throughout Oregon and in other Western states. The enterprise zone program is statewide and there are 55 such zones including many in central Oregon. The Google data center in The Dalles, Oregon, for example, was constructed in one such enterprise zone at the port. This meant Prineville town leaders faced the challenge of differentiating themselves from nearby competitors for the deal. Local leaders identified other forms of friction that were within their power to eliminate. In particular they offered an extremely business friendly city administration and literal 24/7 personal availability, using their own time and attention as an added benefit. As the city manager Steve Forrester stated:

²⁸ Sheehy, Bill. (2001) "Enterprise Zone Designation Sought by Prineville." *The Central Oregonian*.

Forrester: I was connected to this, the head site selector, I said, "I don't care whether you're in Europe, if you have a change in your demand and your process, I don't care whether you're in Europe and it's 2:00 in the morning, call me and I will get you the answer in four hours." And I made some stupid commitment like that.

Author: And did they take you up on that?

Forrester: They did. And so it wasn't uncommon for me to get a call in the middle of the night or in the morning, "Hey, our water demand went from X to Y." ... And I'd call my long time buddy, who's now our city engineer who worked with me in the forest products industry. "Hey Eric, meet me at the office at 6:00. We got to sit down and figure this out." And we would and we'd get back to him, and I don't think anybody else did that in Oregon.

Another critical piece was the role played by the non-profit¹⁴ Economic Development for Central Oregon (EDCO), which works to attract new businesses and to facilitate their move to the central Oregon region. Facebook's first point of contact was the director of EDCO, not the Mayor of Prineville or other elected official. Carr noted the importance of secrecy to firms like Facebook in his description of the transparency requirements that kick in when government becomes involved, "*the minute you start talking to elected officials, the minute you start submitting documents and they become public record.*" He defends this secrecy, noting that, "*if they're publicly traded, anything that they do, like for Apple, it's a big deal. If they make a move, it's going to be on every news station, in every newspaper and that can affect their stock prices and stuff like that.*" Furthermore, he added, the implication that the company might be moving to a new locale could needlessly worry current employees. Transparency requirements that pull private business activities into public view were perceived as a source of friction, one local leaders in Crook County either found ways to avoid or to delay as long as possible. These efforts succeeded in attracting Facebook to Prineville over its otherwise similar neighbors.

Insider Alignment

The agreement that was reached between Facebook and the city of Prineville ushered in an important second phase in the data center saga. The anticipatory reconfigurations that established the region's readiness had finally succeeded, but the next phase focused inward toward aligning local residents. Rural communities often define their identities through establishing what they are not, by defining boundaries that separate insiders and outsiders (Hardy et al. 2019; Stein 2002). The arrival of Facebook, bringing with it people perceived as outsiders both in a geographic and cultural sense, required careful management. Inviting Facebook into the community also initiated a major transition in the local business culture, away from the paternalistic culture of loyal, local businessmen who contributed employment as well as

¹⁴ A 501(c)(6) in this case.

broad philanthropic support for local events and institutions. In its place the community's economic future was joined to that of a Silicon Valley based firm. Facebook representatives vocally and publicly expressed their commitment to the rural community, but, in a structural sense, the firm's interests and those of locals were weakly aligned from the beginning and remain so.

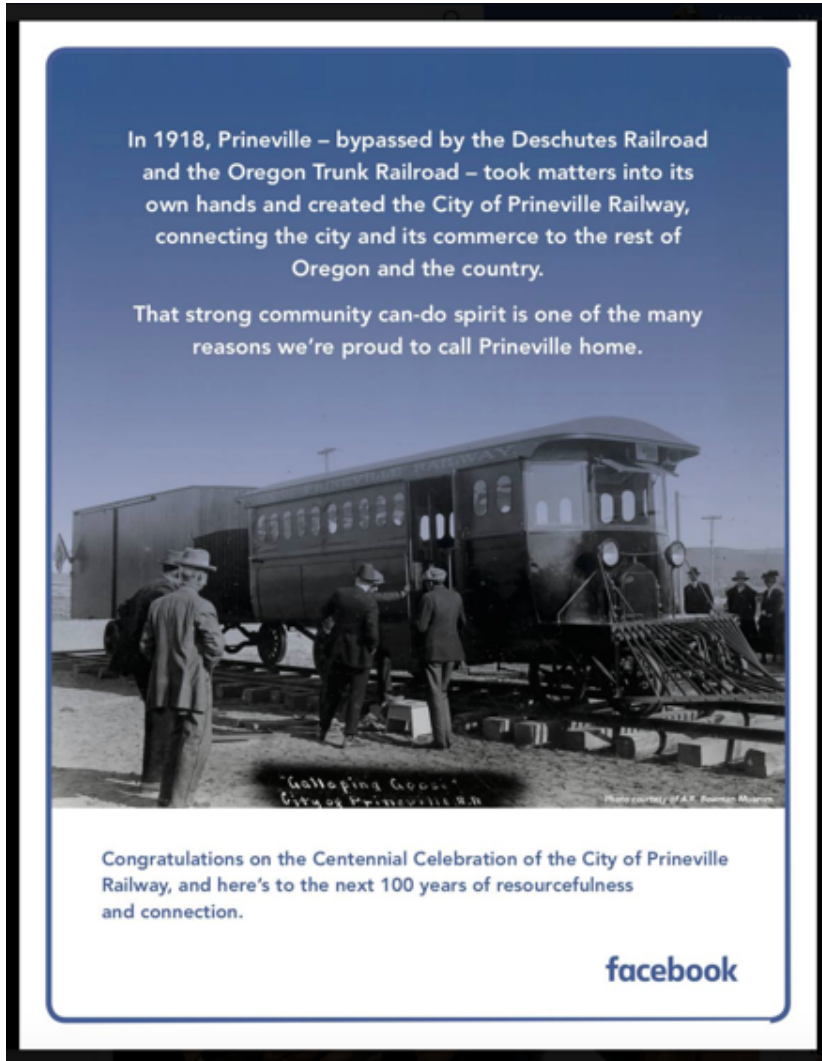


Figure 2. Posted to the Facebook Prineville Data Center Facebook Page in August 2018.

In managing the transition community leaders emphasized continuity. Facebook hired a regional public relations firm (Portland-based Lee Weinstein PR) to help craft their message to the community. The firm drew heavily from the existing local business culture emphasizing

community partnership and celebrating Prineville's frontier heritage while drawing analogies to Facebook as a business. A case in point is a congratulatory Facebook-branded message posted on the Prineville Data Center's Facebook page in 2018 that celebrated the centennial of the City of Prineville railway. The message read, "In 1918, Prineville—bypassed by the Deschutes Railroad and the Oregon Trunk Railroad—took matters into its own hands and created the City of Prineville Railway, connecting the city and its commerce to the rest of Oregon and the country. That strong community can-do spirit is one of the many reasons we're proud to call Prineville home" (see figure 2).

Emphasizing self-reliance and the ability to overcome marginality, the post drew a link between the interests of historical Prineville residents and Facebook itself in building infrastructure to create "connections." Facebook also sought to establish itself as a good community member much like other well-regarded local businesses. They sent data center employees to provide engineering education and gift equipment to local schools. Facebook's annual community action grants in Prineville supported local non-profits and their technology-related needs. The grant program, in particular, was well-known and appreciated by many community members I interviewed who otherwise had no connection to the data centers.

Apart from formal marketing messages and Facebook-led PR, local leaders like former City Councilmember Jason Carr and City Manager Steve Forrester continually worked to bridge between the old and new regimes of work. Carr argued that the new jobs at Facebook did not displace old industries, but existed alongside them. Forrester likewise saw Facebook as providing work opportunities that were continuous with traditional industries and drew from the same local labor pool. They, along with other local leaders, employed a particular language to aid in their campaign of persuasion, which was carried out across media—in community Facebook groups, the local newspaper, as well as at public events. In particular they spoke about the return of "family wage jobs" and how the data centers would contribute to much needed "economic diversification." While local leaders had weak influence over political-economic shifts taking place at the state level, nationally and internationally, their strength was in understanding the local community and how to guide them into alignment.

Former City Councilmember Jason Carr defined "family wage jobs" plainly and succinctly as "*jobs that are going to pay above minimum wage and come with benefits.*" City Manager Steve Forrester elaborated that while such jobs had been lost from the area, "*Prineville was a place you could make a living. In other words, you didn't need to go get a four-year education to make a very good living if you are a logger, if you are a sawmill electrician, if you are a sawmill maintenance manager, or a foreman, or you went to work for Les Schwab in the production center. I mean, we had a lot of very good family jobs where people could afford a nice home, a good vehicle, send their kids to good schools, go to college, all those things were possible. And then as we transitioned into the 70s, 80s, and 90s, not so much.*" In the revival of "family wage jobs" local leaders described the data centers as reviving a kind of working class employment that has long been in decline in the US (Farber 2010; Kalleberg 2009; Nelson and Smith 1999).

The language of the "family wage job" in labor history goes at least as far back as the 1820s where the term was tied to labor organizing and trade union activities. In this instance,

Prineville's local leaders suggest that the "family wage" can be secured through a different mechanism—not through the negotiations of collective bargaining, but by incentivizing businesses through conditional tax abatements. However, the assurances for workers are surely weaker. They are more reliant on corporate profitability and the willingness of the company to distribute those profits generously to workers. They are also formally time-limited—the tax abatements end after 15 years, as do the legal requirements around employment. Thus the foundation of this promise of family-wage jobs is less secure than it would be, for example, in the context of workers' unions.

The "family wage job" also harkens back to a more traditional gendered division of labor in which a single-wage, head of household provider (typically male) earns enough to provide for a family. As May notes, calls for a family wage articulated, "demands for subsistence and survival of the working-class family as a unit and the notion of a dependent home-bound wife and children" (May 1982, pg. 400). In my interviews the phrase was never invoked with any explicit reference to the gender identity of the wage-earner. Yet, all of the traditional industries in this region (agriculture, timber, manufacturing) have disproportionately employed men. Accordingly, the work cultures of these industries reinforce values associated with masculinity.

In addressing the perceptions of some residents that the new data center industry was a threat to the current economic base of the area, officials explained that they were trying to create a buffer that would carry them through economic downturns. They were not turning their back on the industries that gave the region its identity. Carr noted, *"We try to make the argument to folks that, 'Look, you may not understand this industry, you may not think that it fits, but at some point, we've got to bring in other sorts of companies that are doing different things so that when a recession hits, their job losses are less. Sometimes, some industries can actually, depending on the type of recession, can be insulated.'" Carr used a four-legged stool as an analogy. If one leg breaks there are still three others. On how data centers figure into this analogy, he noted, "What I have always said is the data centers were never meant to be a savior for the community. They're a piece of the puzzle. They're one leg to that stool. So, it's still the responsibility of EDCO and of community leaders to ensure that other types of industries are functioning well so that people of all types of educational background can get a meaningful job, whether it's in a logging truck or as a technician up at Facebook."* His metaphor carefully preserved traditional industries (the timber industry in particular) alongside new industries and, with the use of his stool metaphor, placed on an equal footing.

On the primary public Facebook group where community discussions took place, "Central Oregon Out Loud,"¹⁵ residents occasionally expressed skepticism, especially about the promise of jobs.

A: *Job opportunities??? Mostly for imports*

B: *shouldn't include the construction of the buildings, those aren't permanent jobs!*

C: *they don't do on the job training for engineers and electricians. But they do hire janitors.*

¹⁵ A pseudonym.

Others who knew someone working at Facebook or who had themselves landed one of the coveted jobs replied with testimonials and corrections:

D: just accepted a job as a server tech with zero experience...thank you for a job in my hometown that isn't millwork

E: Before the data centers were here construction was slow and my husband had to travel out of town. Sometimes he wouldn't be home for weeks at a time. We have 2 little boys so it was really hard having him away. Now thanks to the data centers he's working locally and home every night.

City Councilmembers Jason Beebe and Jason Carr often weighed in on these discussions as well. Carr, for example, offered diplomatic reassurance in a thread where critics of the data centers and residents who had personally benefited from them went head-to-head. He reiterated his pitch for data centers as “economic diversification” stating,

I don't want just data centers here. I want us to have all sorts of different companies for people with different skills. But why there is such a vilification of the data centers baffles me. Communities that move forward are communities that embrace change and recognize the past is no longer the future. This doesn't mean giving up our heritage or being like Bend. But Prineville will never be the logging town it once was. Manufacturing is becoming more automated, there's global competition for timber, and we have to look at creating jobs for the future. If we want our kids to come back and live here and buy homes here and be community leaders here, we have to build a future economy for them.

By referring to “family-wage jobs” local leaders specified what they sought to secure for the community while “economic diversification” identified their overarching strategy. They focused on what could be recovered from the past but retooled for contemporary political and economic circumstances. Debates on Facebook aside, local leaders I interviewed recounted that the Facebook data center deal passed through city council with little resistance or vocal opposition indicating the success of local leaders in securing community alignment.¹⁶

By couching the data centers as fulfilling a strategy of “economic diversification” community leaders situated the development as an unthreatening, acultural opportunity that would add without subtracting, that would bring something to the community but would not radically alter it. They avoided entirely the loaded symbolism the high-tech sector often draws from to envision anticipatory possibilities, one rooted in a revised counterculturalism reflected in the hacker ethos as well as a guiding vision of online communalism that has long shaped Silicon Valley's startup culture (Turner 2006). In Prineville, leaders occasionally spoke about innovation

¹⁶ This community was certainly not apathetic or indifferent to local politics. They occasionally mobilized, particularly around issues they perceived to be foisted on them by outside groups. For example, there was huge pushback against an effort by an advocacy group called Oregon Wild to register part of the nearby Ochoco mountains as a national recreation area. There was a similar response when the town faced a legal challenge from a Wisconsin-based organization called the “Freedom from Religion Foundation” about a Christmas-time Nativity scene that was hosted on city-owned property. Both incidents drew huge crowds to city council meetings, vociferous opposition, and many “letters to the editor” in the local newspaper.

and entrepreneurialism but did not emphasize it. There was little concern with tech's often self-congratulatory sense of social mission. Facebook's cosmopolitan motto to "bring the world closer together" was never once in my time in Prineville invoked as a motivating vision. Jason Carr's stable four-legged stool metaphor is a particularly vivid contrast to Facebook's call to its engineers to, "move fast and break things."⁷ What local leaders proposed seemed exactly the opposite of disruption (Danneels 2004). The Facebook deal was described in spare economic terms. It was simply about jobs, the one thing that all agreed the region desperately needed.



Figure 3. Artifacts from the life of Les Schwab on display at the Bowman Historical Museum, Prineville, Oregon.

The way Facebook portrayed their commitment to the community is likely modeled after the deep-rooted loyalty of Prineville's preexisting business culture. The role of the businessman-as-community-philanthropist, a distinctive type of rural paternalism, is paradigmatically

⁷ In Facebook's IPO paperwork.

https://www.sec.gov/Archives/edgar/data/1326801/000119312512034517/d287954ds1.htm#toc287954_10
History of the saying is here - <https://mashable.com/2014/03/13/facebook-move-fast-break-things/>

illustrated by Les Schwab, Prineville's most famous resident. Schwab bought a small tire company in 1952 and grew it to be the 324th largest privately held company in the US by 2008. The company's massive tire warehouse occupies a footprint in Prineville that rivals the data centers in size. The Les Schwab Tire Company has remained privately owned and family-run since its founding, resisting frequent attempts to be bought by outside investors. In his autobiography Schwab admitted that being located in Prineville defied all business logic. Shipping tires by truck up and over the mountains was inefficient and, in winter, perilous. On his business ethos, he stated, *"we are different from most of the American corporations, as we think the most important people in the company are the people on the firing line; the ones who sell, do the service work and take care of customers."*¹⁸ He described these workers with a note of wistful sympathy as, *"the forgotten working man"* (Schwab 1986: 149). Schwab implemented a novel and generous profit-sharing model for his employees and in economic downturns sought to absorb the blows of local unemployment through the jobs his business could offer. He took his role as father figure to vast numbers of employees very literally, describing weddings he had attended and one in particular where the groom, *"told me that two men had influenced his life, his father and me"* (Schwab 1986:108). A visit to the town's historical museum showcases numerous local men who lived up to this model who are celebrated simultaneously for their business acumen and community-mindedness through laudatory text. None more so than Schwab whose iconic hat and windbreaker are encased in plexiglass with a motivational video narrated by Schwab and family played on continuous loop (see figure 3).

Schwab represents a view perhaps more in the spirit of Roosevelt's WPA than that of the "lean and mean" high tech sector with its predilection for "right sizing" through layoffs and a reliance on contractual workers as a way to limit formal employee headcount (Gray and Suri 2019). Facebook is a Silicon Valley headquartered, publicly traded company that offers no such assurance of uncompelled generosity. Any impulse within companies like Facebook toward Les-Schwab style benevolence is complicated by the demands of shareholders. In March of 2020, for example, a Business Insider article by Rob Price suggested that internally Facebook was making some concrete efforts toward greater data center automation. Price reviewed public documents including job postings for a "site engineering robotics team" and patents that included diagrams of robotic systems doing precisely those tasks currently done by human data center technicians, the very workers who've secured those promising entry-level "family wage" jobs.¹⁹ Patents however, are a relatively weak signal of business direction. They are a lucrative asset, and a defensive tactic against competitors which means that many ideas are patented that companies have little intention of implementing. Such information, however, raises doubts about how committed Facebook is to serving the town of Prineville as an employer.

¹⁸ "A sad day in Les Schwab Country." *The Bend Bulletin*. May 19, 2007.

¹⁹ The 2020 article by Rob Price entitled "Facebook has robots patrolling its data centers and has built a new team focused on automating the multi-billion facilities" is suggestive but far from a near-term reality. (See <https://www.businessinsider.com/facebook-site-engineering-robotics-team-automate-data-centers-2020-2>).

Efficacy and Blame

In exploring the question of “efficacy” I have shown how Prineville’s Facebook data center was a success for local leaders. However, I claim its success in a limited and strictly materialist sense. Prineville attracted and secured Facebook’s attention and investment in an unlikely-seeming place. The proof was the massive, boxy data center rising from the desert floor. Whom the data center benefits within the locality and how lasting that benefit will be is still uncertain. There is evidence that supports the argument that the data centers induced an economic boom in Crook County including growth in jobs as well as indirect effects. A study by a consultancy ECONorthwest in 2013 found an increase in direct employment (177 full-time jobs at the time and significantly more today), indirect employment, boosts to other local businesses, and tax revenue, with benefits to Central Oregon and beyond.²⁰ Overall unemployment plummeted in Crook County from its high approaching 20% in 2009 down to 6.3% by 2017. Critics have noted environmental concerns over the enormous amounts of electricity data centers consume. With the expansion of the data center, electricity consumption quickly matched and then surpassed that of every business and residence in Prineville combined. This electricity use has also produced an enormous boost in revenue for the town of Prineville. Electricity franchise fees are the taxes utility companies pass along to towns that host their infrastructure and are calculated as a percentage of the electricity capacity supplied to homes and businesses. Franchise fees exploded from \$548,582 in 2006 to \$2,913,102 in 2018, an increase of 500%. That year Prineville collected almost \$1,000,000 more in franchise fees than they did in property taxes.²¹

While these tax figures are unambiguous the question of who has secured jobs at the facility still remains unclear. Family wage jobs were a core promise of Facebook’s arrival in Prineville, though it is a claim contested by some community members. Facebook had declined to state publicly exactly how many permanent jobs it offers in Prineville and which jobs specifically are paid at the 150% rate. It is hard to disentangle the general rise in the employment rate from the broader economic recovery and what is now, once again, a booming construction industry not limited to data center work.

In Vonderau’s account of the negotiations surrounding the Facebook data center in Luleå, Sweden, there are several striking similarities with the case considered here (Vonderau 2017). Like Prineville, the town’s industrial history was rooted in extractive industries that shaped a local working-class labor market. The steel worker defined the Luleå area historically, but that occupation was one the regional leaders seemed eager to shed. Vonderau aligns data center construction and promotion with a specifically future-oriented temporality, a linear anticipatory form. By contrast, Prineville’s leaders saw the data centers as representing a hoped for return to and a revival of the past, a circular anticipatory form. Prineville’s leaders hoped for a return to what was once a booming economy offering a particular role for men of a certain demographic. While the infrastructures of the digital constitute something globally continuous,

²⁰ “Prineville data center: economic and fiscal impact study.” *ECONorthwest*. 2013

²¹ Based on annual financial reports of the city of Prineville, Oregon

as Vonderau notes, they are materially located and made sense of in socio-culturally specific ways.

In Prineville, if one tries to project forward into the future, there are no certainties or stabilities around the question of data center jobs. The monumentality (and monumental investment) in the data center structures themselves is the only anchor point. While these facilities might seem difficult for Facebook to walk away from, data centers can be surprisingly impermanent. As Velkova (2019) notes, while their monumentality is treated as a stand-in for their durability, data centers are often built as inexpensively as possible, both structurally and architecturally. Contrast the Prineville data center's generic, boxy, windowless form with Facebook's warm, woodsy headquarters in Menlo Park designed by famed architect Frank Gehry. Accepting the possibility that Facebook might choose to leave or that the business itself might prove to be less robust in the long term, city manager Steve Forrester made an old cowboy joke (recycled from Les Schwab himself) about the alternate uses of these data centers. If Facebook goes the way of defunct social network MySpace, he suggested, *"we're going to have the greatest hay sheds that we can't ever fill up."*

Rather than treating this situation as the result of a failure of discernment by unsophisticated local leaders outmatched by savvy corporate deal-makers, on the sum of the evidence I see it as a reflection of the structures and constraints of the post-Fordist condition of mostly unencumbered free enterprise in the United States. Local leaders in Prineville operated adeptly, but it is important to recognize their limited options from this position of spatial marginality. The irreversible decline of the timber industry, the inconvenience of their location, and the limits of their existing workforce were all things they recognized quite clearly for themselves.

If blame is to be attributed, on the measure of the evidence presented here, it is clear that it ought to be distributed much more broadly. A critical role was played by the Oregon state legislature that instituted a statewide economic zoning program in 1985. The actions of neighboring counties, who implemented their rural economic zones first, placed Crook County at a disadvantage, forcing them to define their own zone to reestablish parity. Prineville's leaders, however, occupy a particular role that makes them vulnerable to being singled out for blame. Humans present in the immediacy of an event are the ones who tend to receive blame for adverse outcomes, what Elish calls a "moral crumple zone" (2019). System operators have the tendency to be blamed rather than system designers, for example. In this case, present day city leaders are the proximate actors seen as directly bringing about contemporary outcomes while state legislators or other policy makers who enabled these eventualities in the past are obscured and forgotten. The tendency toward a foreshortened view is evident in the particular way the data center story has been recounted, neglecting upstream and historical actors whose decisions are made at a remove and who do not appear as part of the assemblage until a careful topological excavation is undertaken, as I have attempted here.

Conclusion

The course of economic transition in Central Oregon when reviewed across the fullest possible scope of history is unpredictable, full of surprises, setbacks, and serendipitous opportunities. A pre-colonial landslide on the Columbia River positioned the Pacific Northwest region for hydroelectric power generation. This pursuit of hydropower led to the ruthless and widespread displacement of the area's indigenous people in a period when assimilationist views about American Indians and "manifest destiny" mythology were little questioned.² Timber resources and nearby agricultural land built the Prineville of today. When the logging industry and its many sawmills atrophied in the aftermath of the Clinton-era Northwest Forest Plan, the unused electricity capacity remained as a robust but underutilized infrastructure, later becoming an attractive resource for the data centers. This is a recurring story. Digital infrastructures are built into and upon what is physically left behind of previous regimes of industrial capitalism (Pickren 2017) or American military empire (Johnson 2019).

In reviewing the groundwork for Prineville's Facebook data centers, I've made a case against a notion of "strong" responsibility that adheres only to human actors and rests on decisions made in the present day and by actors within the bounded rural locality, showing instead distributed agency not only across many entities (natural, human, material) but also as possible to trace over great durations of time. I have offered a reconsideration of how the assemblages that produce new high tech in a peripheral, rural space (Facebook data centers in central Oregon's "cowboy country") come together. This extends the notion of how *time* may function in materialist theory, specifically in accounts of how assemblages come to be realized. In theoretical developments that work against the false understanding of matter's timeless stasis, scholars have depicted it instead as vibrant (Bennett 2010; Barad 2007), as performative and at continuous risk of breakdown (Latour 2005; Star 1999), as a flow or a becoming (Ingold 2012). The half-built assemblage illustrates a different kind of material temporality, one of slow movement or even perceived non-movement, not a jittery one of moment-by-moment action and continual recalibration.

In past eras such groundwork was *inadvertently* laid for the data centers, through legislation and zoning, through interventions to acquire shares of state funding and infrastructure deployment—of electricity, fiber optic cables, and land. Much of this work took place many decades before and with only a vague notion about what possibilities would be opened up by these efforts. Decisions were couched broadly within an appeal to attract businesses and create more local jobs. When the data center industry found its way to Prineville, first with Facebook and then Apple, it finally completed what was once a half-built assemblage. It made whole what had long been aspirational but unfinished.

² "Dam dooms famed Indian fishing hole." Prelinger archives, Available https://archive.org/details/0101_News_Magazine_of_the_Screen_The_Vol_7_Issue_2_13_36_24_00

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Acknowledgements and Funding Disclosure

This research was supported by NSF grant No. 1734431 and a non-contractual research gift from Intel Corporation.

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