

Smart as a City

Smart as a City

THE POLITICS OF TEST-BED URBANISM

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For Ayfer and Osman

Contents

<i>List of Illustrations</i>	ix
<i>Acknowledgments</i>	xi
Introduction	1
1. Becoming a Test Bed	18
2. Technocracy on a Hill	38
3. The Ignorant City	61
4. (Dis)Connecting the Smart City	83
5. Spinning Wheels	109
6. Avoiding the F-word	130
Conclusion	146
<i>Notes</i>	155
<i>Bibliography</i>	183
<i>Index</i>	205

Illustrations

MAP

1. Site of fieldwork in Kansas City	13
-------------------------------------	----

FIGURES

1. Google Fiber billboard in Kansas City	19
2. Typical startup house in Kansas City Startup Village	44
3. View from a design workshop on smart cities	65
4. Google Fiber announcement in a public housing complex	97
5. KCMO data-driven management and planning	117
6. KCMO operationalization	119

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Introduction

Think about all the devices that have existed for years. The Smart & Connected Cities means that they will all talk to each other. Information flows in near real-time. And that means we will be able to solve things like detecting water main breaks before they happen. We'll be able to save electricity. We'll be able to provide public safety. Who is not incredibly proud about eight-hundred-thousand people showing up for the Royals celebration and nobody getting in trouble? Unbelievable! Think about all the industrial, governmental, and civic problems we have in the city. That's what the Smart & Connected Cities is about. But the most important, the most valuable part is that it becomes invisible. Think about switching lights. Most technology is operating in the background, increasing the quality of our lives. That's what this is all about.

Simon's words spilled out of him quickly. Was this how he normally talked, or was he trying to dazzle us with the cadence of an entrepreneurial pitch? It was Global Entrepreneurship Week across Kansas City after all. I sat among several young entrepreneurs who lingered after "Startup Waffles" to hear Simon introduce the Smart &

Connected City partnership between Cisco, Sprint, and the mayor's office.¹ The smell of maple syrup hanging in the air, we were eager to know more about this new initiative. It had been announced almost six months ago, with no further details shared since. Now Simon, one of the local entrepreneurs credited with brokering the partnership, was here to pull back the curtain a little.

Simon walked us through a smart city pilot program to be launched in downtown Kansas City alongside a new streetcar route. It included sensors on sidewalks, the streetcar, and streetlights; digital kiosks that would serve as information portals; and a free public Wi-Fi connection. He stressed that the program also had a "living lab" component, in which local entrepreneurs could access the streams of urban data from the pilot and build new products to address local problems. His pitch lacked specifics but was full of promise—of smart technologies, Kansas City's potential to grow, and young entrepreneurs' role in transforming their hometown, one piece of software at a time.

I had just moved to Kansas City full time when I attended the gathering in November 2015. Though it was early, Simon's exuberant presentation of the smart city felt all too familiar. "Classic technoutopianism?" I scribbled in my notebook while listening to him. I ended with a question mark because I thought there was much that the term could not explain: Simon's performance, the smart city pilot itself, or why a handful of young Kansas Citians had gathered to listen to him on a weekday morning.

The term "smart city," which has become ubiquitous since the 2000s, invokes visions of urban environments bristling with sensors, cameras, and wireless networks. Described as "an ongoing penetration of computing into infrastructure," the smart city promises to model, optimize, predict, and automate city life by transforming every aspect of local governance into data points.² For some scholars and commentators, smartness offers a new kind of urban revitalization, for which governments rally funds and secure partnerships with the tech industry. For others, it is a marketing gimmick to "sell

[cities] in the global economy” rather than address more pressing needs.³ Still, the smart city is no longer just a buzzword. It has become a pervasive framework in contemporary urbanism across the world.

It is a misnomer, however, to speak of smart cities as if they already exist fully formed. More often, the smart city is a pilot project or work in progress that is more speculative than tangible. Companies test technological systems not knowing if they will work; cities gather data unsure of their ultimate use. Scholars describe this as “test-bed urbanism,” in which local streets and neighborhoods become experimental sites for rolling out data-driven tools.⁴ These interventions aim to appraise new technologies, optimize municipal services, and invite residents to imagine radically new ways of solving urban problems.⁵

The smart city is a patchwork of trial runs, but these tests can restructure urban life in deep and enduring ways. When companies, municipalities, and residents invest themselves in smart cities, there is a shift in who holds power and who absorbs costs.⁶ The data collected can shape the city’s view of which people, problems, and neighborhoods matter, even after technological trials are complete. Rather than write the smart city off as a symptom of techno-utopian ideals, then, it is important to look at how the logics and values of smartness are put into practice. The way a smart city takes shape may owe as much to on-the-ground responses of residents as to the boardroom pitches of big tech companies.

After all, neither Simon’s pitch nor young Kansas Citians’ enthusiasm about the smart city project were conjured whole cloth from the sleek slides of a Silicon Valley deck. Sure, they borrowed language from tech companies, whose plans often seemed like pipe dreams. But this group of smart city enthusiasts were also deeply proud of their city and committed to improving it. So how did they come to view their futures through the lens of smartness? Why did the mayor’s office heed the call of tech giants who wanted to use Kansas City as a sandbox? And amid the new technologies, shifting

bureaucracies, and corporate partnerships, who, or what, got left behind?

Smart as a City documents actually existing test-bed urbanism in the American Midwest, where Silicon Valley's lofty rhetoric and work-in-progress tech products meet the everyday realities of local government and uneven infrastructures.⁷ It follows a cast of smart city enthusiasts—city officials, civic leaders, local entrepreneurs, and corporate representatives—eager to spotlight their hometown's problems and align them with the tech industry's half-developed solutions. The following chapters trace the rollout of smart interventions, from public housing residents asked to adopt a free-gigabit internet service to municipal staff working to integrate predictive data analytics into daily operations. What the book shows is that as smart initiatives are rolled out, they run headlong into the city's more enduring struggles: its racist history and present, the hollowed-out capacities of municipal government under neoliberalism, and the ongoing disinvestment in specific neighborhoods, which smartness cannot fix.

I argue throughout the book that urban disparities are not an unintended consequence of the smart city; they are the foundation upon which it is built. The tech industry depends on social and spatial divides to justify its interventions. City officials and residents often frame smartness as a public investment for improving stratified access to municipal services. But smartness is also designed to learn from the city's existing divides and incorporate them into its models. As a result, working-class communities of color often experience smart interventions less in terms of renewal than of surveillance and control, and predictive tools recycle historical patterns and reinforce existing disparities.⁸ Even if everything works as promised—and that is a big if—the smart city is likely to deepen the city's past and present fractures.

Rather than depicting smartness as the grand vision of Silicon Valley built atop a tabula rasa, the book aims to examine the ways this vision is interpreted and adapted to the daily struggles of a divided city. It sheds light on how cities engage with test-bed

urbanism while navigating the constraints of tight budgets, limited knowledge, and the legacies of racial segregation. It documents how city officials, civic groups, and residents, each with their own classed, racialized, and cultural perspectives, adopt or resist these technologies. Civic entrepreneurs, flush with pride, cast their hometown as another startup. Public housing residents quietly reject a gigabit internet program they never asked for. Municipal staff tinker with broken datasets to render predictive tools politically palatable. In each chapter, the book challenges the simplistic view of cities as passive recipients of technology and of technologies untouched by the places where they land.

Overall, I reframe the smart city as a collective effort to spotlight enduring problems and to align local issues with the often buggy, half-baked systems offered by tech companies. The success of matching civic concerns with flawed, extractive data regimes is hard-won and, at best, uncertain.⁹ Yet by presenting a full picture of an aspiring smart city on the ground, the book shows how civic aspiration, municipal politics, and data capitalism converge in ways that redefine local governance. And it confirms that a city cannot be smart and equitable without rejecting the tech industry's model of smartness, which seeks to profit from, rather than redress, urban inequalities.¹⁰

The rest of this introduction offers a historical and conceptual genealogy of the smart city, examining how early visions of sustainability were bound up with, and ultimately served, the logics of data capitalism. I then introduce Kansas City as a paradigmatic example of actually existing test-bed urbanism and lay out the methods and structure of the book.

HOW CITIES BECAME "SMART"

What exactly is a smart city? It is hard to offer a precise definition, and that ambiguity is by design. The term itself functions like a

blank screen onto which a vision of seamless, data-driven progress is projected.¹¹ The simplest description is that a smart city augments unremarkable streetlights, roads, water pipes, and streets with surveillance apparatuses to generate real-time data. It is a fantasy of optimization, where the messy complexities of urban life are flattened into data points to be tracked, analyzed, and fed into algorithms. Cameras, sensors, and dashboards form the backbone of such efforts, trying to turn every part of the city into a problem, every streetlight and pipe into a “data asset.”¹²

In popular discourse, smart cities appear to be grand, sweeping projects built from scratch with the latest technology. Think Songdo, in South Korea, touted as a “ubiquitous city” rising on wetlands outside Seoul.¹³ Remember Sidewalk Labs, Alphabet’s ill-fated attempt to rebuild Toronto’s Quayside “from the internet up”?¹⁴ If a tech billionaire in the twenty-first century does not stake a claim on a swath of land for a future smart city, are they even in the club?¹⁵ These dominant examples indicate that the smart city is less about actual technologies or even techniques and more about aspirational fantasies about urban life. It is a vision meant to spark both the imagination and the capital needed to make the smart city real.

By calling the smart city an aspiration or hype, I do not mean to undermine how productive the term has been so far, especially if we measure productivity in the capitalist sense. The term has been a rallying cry of tech giants and startups alike, generating hundreds of millions of dollars in investor capital and government contracts. From India to Singapore to Brazil to the United States, national governments have been allocating funds toward transforming cities, and sometimes entire regions or countries, into their smart versions.¹⁶ Municipalities have been carving out neighborhoods as experimental spaces, or “smart zones,” and inviting companies to test prototypes with less oversight.¹⁷ “Urban innovation,” now synonymous with smart technologies, has become a catch-all phrase in city planning.

It helps to step back and see smart urbanism as a case of how contemporary cities and the tech industry have come to depend on each

other since the early 2000s. Linking the Web 2.0 surge of the 2000s to the AI gold rush of the 2020s, smartness gave the tech industry a new excuse to expand its surveillance capacity and data extraction into the built environment. The quest to turn the city's land, residents, and infrastructures into data justified the expansion of cloud systems and data centers.¹⁸ Better yet, it promised to lock municipalities into long-term dependencies on new platforms. At the time, city officials and local communities were contending with the aftermath of the financial crisis in 2008 and the austerity that followed. They saw smartness as a way to harness the industry's attention to patch flailing infrastructures and fill the gaps left by shrinking municipal services.¹⁹

In its origins, however, the smart city was a green dream, promising a technological panacea for the burgeoning woes of global metropolises.²⁰ This early narrative emphasized energy efficiency and sustainability. After the 2008 financial crisis, Silicon Valley, in pursuit of the next big thing to keep its venture capital flowing, reframed the smart city. The original focus on the environment was sidelined in favor of a new vision, which was rooted in innovation and entrepreneurialism.²¹ John Chambers, then CEO of Cisco, famously announced the company's shift from being the world's "plumber" to becoming a "platform for innovation" as he explained Cisco's investment in smart cities.²² In this new framing, the technicalities of sensors and servers took a backseat to platforms, big data analytics, and monetization opportunities. IBM followed suit, casting the smart city as a technological marvel to "transform [a city's] core systems and optimize the return from largely finite resources."²³ The company soon went on an acquisition spree, snapping up twenty-five data analytics firms in five years. It launched the Cities Technology Center in Dublin in 2011, a move designed to signal the firm's growing appetite for urban data.²⁴ Behind the charismatic image of a city transformed, tech companies were eager to build out data-hungry, surveillance-rich urban environments.

At the same time, many state agencies were already feeling the pull toward a data-driven approach to governance through initiatives

like open government or the use of predictive analytics. The rhetoric of smartness, with its emphasis on efficiency and optimization, offered a new common ground between the tech industry and the public sector. The term carried symbolic weight, at least for a while, signaling a commitment to innovation and progress. In some cases, governments did not even rely on direct partnerships with tech firms. Some collaborated with universities and local communities to promote “living labs” or “innovation offices,” which tested smart technologies in the wild.²⁵ International organizations, too, joined the movement. The United Nations, for instance, recently embraced the term smart cities to come up with a framework for “people-centered” technology use in urban environments.²⁶

I situate test-bed urbanism within this historically specific political-economic context. The smart city, as envisioned in the 2010s by the tech industry, functioned primarily as a pretext for the aggressive expansion of cloud infrastructures and data centers. Put simply, it was a waystation that justified an increasing dependence on data, much like the financialization of public services by Big Tech, or the reframing of institutions through logistics and optimization.²⁷ My analysis thus joins critics who brush off the smart city as Silicon Valley’s “empty rhetoric” or a “rhetorical device to justify a range of political and economic interventions.”²⁸ But rather than a conclusion, I use this critique as a starting point.

If smartness was a pragmatic, though flawed, response to austerity and the manufactured surplus of computing power, how did people interpret and negotiate its everyday uncertainties? How did they procure smart technologies, try to make them work in their hometown, and live with their consequences, whether by choice or under pressure? Rather than reducing the smart city to a chase for technological novelty, I show how different groups sought to patch crumbling infrastructures, build new local businesses, and connect divided neighborhoods with whatever tools were available to them. I document how these efforts were entangled with the techniques of data capitalism, which transforms aspirational civic interventions

into extractive, if not harmful, practices. By tracing the ways smart cities form on the ground, we can better understand not just the unfulfilled promises of techno-utopianism in cities but also the uneven consequences and lived experiences of smartness. The outcomes, far from a *fait accompli*, vary widely across neighborhoods.

KANSAS CITY AS ACTUALLY EXISTING TEST BED

My understanding of the smart city as a mediated, resisted, championed, and ultimately divisive process draws on ethnographic fieldwork I conducted in Kansas City, Missouri between 2015 and 2021, some of which was remote due to the COVID-19 pandemic. As far as the contemporary techno-utopian fantasies go, Kansas City may seem a world away from the Bay Area, where people can hail self-driving cars as taxis, or some of the purpose-built cities of Asia, where garbage barely exists because pneumatic tubes carry trash straight from houses to underground waste facilities. Kansas City's wide-open, quiet streets are always filled with more cars (driven by humans) than pedestrians. Garbage trucks rumble down the road early in the mornings. Yet, the bistate city, which physically and administratively covers parts of Missouri and Kansas, was a highly popular destination for technology companies looking for a place to test ideas in the 2010s.

Google picked Kansas City, on both sides of the Kansas-Missouri state line, in 2011 to become a test bed for its gigabit internet service. In early 2015, the local government on the Missouri side announced a partnership with Cisco and Sprint to roll out a smart city pilot. A year later, Kansas City, Missouri, became one of seven finalists for a coveted \$40 million grant from the Department of Transportation in a "Smart City Challenge." The city later partnered with Google, again, and the US Department of Housing and Urban Development, to pilot a free gigabit internet service in public housing residences. As the city's then-chief innovation manager liked to repeat, Kansas

City was committed to embracing technology and data in local governance so that it did not end up “in the digital Rust Belt 20 years from now.”²⁹

A mid-sized, post-industrial city long afflicted by concentrated poverty, racial segregation, and urban decay, Kansas City differs from renowned, and more studied, national and regional hubs of “tech innovation,” such as San Francisco, New York City, or Austin. Its municipal government, civic organizations, and residents lack easy access to the resources, talent, and knowledge networks often considered necessary to cultivate a tech ecosystem.³⁰ And yet Kansas City has emerged as an archetypical test bed for evaluating whether new technologies will work in a so-called average city. Its experiences resonate with similarly sized cities, which strive to attract tech companies seeking peripheral locations for testing new technologies.

Kansas City’s ambition to reinvent itself is also shaped by a unique socio-spatial history. It is one of the most segregated cities in the United States.³¹ Since the 1930s, white populations have fled to the suburbs while Black residents have been concentrated in the city center. Despite the end of legally enforced discrimination, Kansas City’s class and racial divides have long been shaped by the legacy of redlining, federal housing discrimination, and a real estate industry invested in carving up the city along racial lines.³² Today, the neighborhoods with the highest concentrations of Black and Latinx residents are still those with the lowest household incomes and the highest rates of poverty.³³

After many years of disinvestment and prejudice toward the city center, municipal leaders began to reverse course in the 1980s, pouring money into infrastructure, entertainment districts, and urban branding in a bid to attract tourists and consumers.³⁴ The smart initiatives in the 2010s were layered atop these earlier investments and introduced new forms of urban boosterism such as innovation districts or data-driven governance. But these programs still reinscribed old divides. The same neighborhoods that had long been neglected were now rendered legible to tech companies as test sites,

while wealthier areas absorbed the language, and funding, of innovation. Kansas City, in this sense, was an ideal site to observe how the promise and precarity of smartness were negotiated on the ground.

METHODS

This book draws on in-person fieldwork conducted between 2015 and 2018. My ethnographic research focused on “studying up,” with particular attention to the local government and civic groups closely associated with the mayor’s office.³⁵ I followed a range of actors who played an active role in Kansas City’s efforts to reimagine itself as a smart city: city officials managing various pilot programs and marketing the city as a site for smart urbanism; civic entrepreneurs advocating for tech-inflected urban transformation in their hometown; and community groups and organizers working on digital inclusion and equity. Throughout the book, I call this loosely organized community Kansas City’s “smart city enthusiasts.”

My sites included city hall, tech incubators and coworking spaces, libraries, public housing sites, and local nonprofits. I also attended public meetings across the city whenever the theme focused on technology, innovation, digital inclusion, digital equity, smart cities, and entrepreneurship. As smart city enthusiasts and digital inclusion advocates began to know me better, they invited me to smaller gatherings and larger workshops, including those targeting people outside Kansas City, Missouri. I spent hundreds of hours across these sites and conducted 108 interviews during my fieldwork. Even though I formally left Kansas City by the end of 2018, I stayed in touch with the key interlocutors and joined some of the online meetings held during the pandemic, which allowed me to track how the initiatives evolved or quietly ended.

While I did not aim for complete coverage of the city, my fieldwork focused on neighborhoods within Kansas City’s urban core, where the pilot programs were first launched and further expansion

was planned. These neighborhoods sat on the city's most stark spatial divide: The east side was home to a minoritized population, lacked basic urban amenities, and was pockmarked with vacant lots, whereas the city's mostly white west side was awash with skyscrapers, upscale restaurants, and a new streetcar line. This divide was central to the smart city. Civic leaders repeatedly expressed their hope to "connect" the city through new technologies and data. Rather than adjudicating whether this consistent attention to urban inequalities was a rhetorical flourish or genuine commitment, I approached it as an object of inquiry to see how racial, socioeconomic, and spatial divides were addressed and mobilized through smart interventions.

In line with the core argument of this book, the smart city was both imagined and experienced differently across the city's varied neighborhoods, leading to contrasting narratives from my interlocutors depending on where they lived and how the pilot projects touched their lives. These narratives, at times, stood in stark tension with each other. For many residents, especially those outside of the tech and entrepreneurial scenes, the pilot programs barely registered in daily life. The exception was public housing sites where I sought to record and incorporate the views of residents about the smart city. Access to this community was limited and heavily controlled by public institutions and private firms, but their experiences remain vital to the story this book tells.

My mobility in the city as a researcher was tied to my own identity. I arrived from New York City as a woman who grew up in Turkey, with no prior ties to Kansas City. I was both welcomed by people who wanted to show off their hometown and all the "innovative" things they were up to and felt limited in some spaces where my presence and my foreign accent were considered suspicious. Navigating these sites was not always, or even often, easy. I was open about my presence and the intentions behind my work but also cautious about expressing my critical take on the overall smart city agenda. I gradually pieced together how old alliances and past controversies had given shape to present-day tensions. To keep the focus more on



Map 1. Site of fieldwork in Kansas City.

tracing the systemic shifts that coursed through the emerging smart city, I use pseudonyms or official titles in the book for most people, except for a few key public figures such as the mayor or a city council member who was featured in the news.

OVERVIEW OF THE BOOK

The following chapters move chronologically to document Kansas City's experiences with test-bed urbanism, tracking its early antecedents before the smart city pilot to the winding down of major interventions circa 2020.

In chapter 1, "Becoming a Test Bed," I examine how the city's collective narration of partnering with Google Fiber shaped its later aspirations toward the smart city. In 2010, Google, then a company predominantly known to be in the software business, announced it was going to test a gigabit internet service across select US cities. This was viewed as a boon by municipalities, as the proposed trial would offer internet speeds one hundred times faster than the US average. Among more than a thousand applications, Kansas City became the first in the country to host Google's experimental initiative. Drawing on how city officials and civic entrepreneurs framed this first test bed as they geared up to begin the smart city pilot, this chapter argues that test-bed urbanism did not appear *de novo*. The city's infrastructural restrictions, civic aspirations, and longstanding inequalities enabled the foray of tech companies into urban environments and shaped the limits of what they could do on the ground. This experience with test-bed urbanism also cultivated a community of local entrepreneurs and exposed the city's enduring inequalities as a looming concern, both of which were key to smart city projects later.

Chapter 2, "Technocracy on a Hill," presents "civic entrepreneurialism" as an alternative framework to explain how smartness, a vague and work-in-progress vision, became a sensible urban policy

on the ground—though not without compromise or risk. Whether refurbishing the built environment with new technologies or upgrading municipal data operations, I suggest that city officials and local residents turned to the smart city not simply to follow the industry's self-congratulatory sense of social mission but also to repair or upgrade flailing urban infrastructures. By recounting the story of how Kansas City came to participate in a smart city project with multiple stakeholders in 2015, this chapter pushes back against the dominant narratives of smartness, which portray municipalities and local communities as either opportunistic or duped (or both), while big tech companies parachute into urban environments with overly hyped promises. I argue that the lines between the need for keeping built environments in working order and the cultural obsession with innovation are much blurrier than current scholarship allows. Cities embrace smartness to reconcile two competing aims: the need to repair neglected infrastructures and the call to redress the class and racial inequalities of city life.

Chapter 3, "The Ignorant City," focuses on the epistemological asymmetries in the making of smart cities and how those imbalances help to mobilize an otherwise inherently uncertain project. I argue that cities' efforts to acquire more knowledge via smartness often lead to a cycle of obscure understandings and intentional unknowing. City officials and entrepreneurial residents in Kansas City did not just acknowledge how little they understood about smart cities in the design phase; they deliberately suspended what they already knew about their hometown as a creative strategy. Much like the hubris of Silicon Valley, which keeps reinventing the wheel under the guise of rejecting the obvious or familiar, smart city enthusiasts privileged computational discovery and the allure of the unknown over existing knowledge and situated forms of learning. The various forms of ignorance that pervade smart city pilots both legitimate these techno-political interventions and obscure power imbalances among city officials, tech companies, civic entrepreneurs, and other residents. The chapter juxtaposes the smart city enthusiasts' civic

entrepreneurial desires to set up test beds and serve working-class communities of color against the deliberate non-knowing they perform, arguing that the smart city reconstitutes racialized inequalities through such contradictions.

Chapter 4, “(Dis)Connecting the City,” documents the gap between smart city enthusiasts’ attempts to address the city’s racialized inequalities and how residents and community organizations at the receiving end experience them. In Kansas City, city officials and civic entrepreneurs focused on “connectivity” as a civic virtue as they tried to launch various pilot programs. But I show that their fixation on connectivity discounted the varying degrees of tech-savviness across neighborhoods and ignored the complexity of being connected with “privacy-poor, surveillance-rich” technologies as a working-class person of color. Based on my participation in the city’s Digital Inclusion Coalition and observations of a federally funded initiative to wire public housing buildings with Google Fiber, I discuss how residents developed a quiet rejection of free smart technologies offered in their personal and collective spaces. On the one hand, this collective refusal challenged the smart city enthusiasts’ conflation of connectivity and welfare. On the other hand, they risked pushing these residents into further invisibility as city officials and civic entrepreneurs mistook this refusal for a lack of interest or knowledge. I argue that without recognizing the classed and racialized experiences of smartness, such initiatives are likely to exacerbate existing divides, especially if municipalities are committed to the idea of governing by data, as discussed in the following chapter.

Chapter 5, “Spinning Wheels,” examines the ways city officials scrambled to work through smart city data and transform them into predictive models to inform municipal decision-making. Prior to the launch of the smart city pilot, city officials and entrepreneurial residents expected to parse the novel data, identify unexpected insights about the city, and solve distinct local problems. Post-launch, however, they had to grapple with a variety of metrics and smaller-than-expected data for machine learning. In this chapter, I trace the

day-to-day work of city officials and data analysts who worked on designing predictive models inside city hall. I suggest that what works for the smart city depends not just on technical prowess or even efficiencies but also on the organizational reception and political stakes of what can be rendered predictable (or automated) at city hall. Using the case of a pothole predictor, which came, with great fanfare, out of the smart city pilot, I argue that the work of trying to achieve these multiple goals often led to finding patterns that confirmed what city officials already knew. The pothole predictor failed to predict beyond the obvious. And yet smart city enthusiasts could not pronounce the tool a failure, a dynamic I discuss next.

After the pothole predictor flopped, Kansas City's smart city project quietly ended in early 2020. There was no formal review of what went wrong or what was learned from these pilot projects. Chapter 6, "Avoiding the F-word," examines how public and private stakeholders, including municipal agencies, tech companies, local entrepreneurs, and engaged residents, pursued diverse strategies to reframe the smart city as not a failure. Between the project's several missteps and eventual demise, I suggest that this collective insistence on "non-failure" leaves local governments more vulnerable to the tech industry's extractive shapeshifting.

The concluding chapter brings together the book's central themes to argue that, far from the seamless, data-driven systems promised by dominant narratives, test-bed urbanism is fragmented, incomplete, and improvised. Tech companies use public struggles as proving grounds for unfinished technologies, but urban problems are too complex and political to be fixed by data alone or by throwing more tech at them. No amount of data or digital infrastructure can fix what disinvestment, segregation, and austerity have broken. Cities do not need more sensors or dashboards. They need real investment in local communities and neighborhoods. Anything less is just another high-tech shortcut that ends up deepening the inequalities the tech claims to solve.

1 Becoming a Test Bed

On a sunny but chilly fall afternoon, I strolled down East 18th Street and headed west to the Crossroads Arts District. Freshly settled in Kansas City for fieldwork, I was trying to get to know the city in a way only a stranger would do: on foot. Shuttered storefronts lined the blocks. It was the middle of a weekday, but the streets were eerily quiet except for the few cars whizzing up and down the road. Empty blocks were followed by vast patches of dirty ground, sometimes functioning as parking lots but more often serving as signs of urban decay. Occasionally, colorful murals framed these desolate stretches, juxtaposing a splash of creativity against the backdrop of neglect. The streets did not feel unsafe, but they were not cheerful either. I felt like an interloper amidst the downtown stillness and a nuisance to all the speeding cars every time I pressed the walk button and brought the traffic to a halt.

Once past Paseo Boulevard and the pedestrian underpass, the landscape began to shift a little, with one-story buildings rising a notch higher and second floors starting to appear. I spotted a local brewery housed within a former warehouse, followed by an artisanal



Figure 1. Google Fiber billboard in Kansas City. Photo by author.

coffee shop, an art supplies store, a pizza restaurant, and a second local brewery. As I inched closer to the Crossroads Arts District, I recalled that these same sidewalks were, only a few days earlier, awash in a sea of blue. The entire city celebrated the Royals' World Series Championship—Kansas City's first title in thirty years. Hundreds of thousands of people swarmed the streets, sidewalks, rooftops, and hills as the championship parade wound its way from the then-Sprint Center to the historic Union Station. Arriving at the corner of Grand Boulevard and East 18th, I pressed the walk button and looked up to see a towering billboard. Against pristine white, royal-blue letters read, "Come to KC for the playoffs. Stay for the internet." It was a reminder of another title Kansas City had won more than four years earlier: the first test bed of Google Fiber.

In February 2010, Google announced that it would test an experimental fiber optic network called Google Fiber in a "small number

of trial locations” in the United States. This new internet service, known colloquially as “gigabit internet,” was to provide data-transfer speeds up to a gigabit per second and could handle multiple streams of large-format high-definition content, such as online video calls, movies, and virtual reality experiences. This was one hundred times faster than typical broadband at the time. “Think big with a gig,” heralded Google’s official announcement, introducing Fiber as an “experiment . . . to help make internet access better and faster for everyone.”¹

The New York Times likened Google’s foray into the telecom market to releasing a “cat among the pigeons.”² It was the kind of infrastructural disruption the tech industry claimed would jumpstart the next phase of the internet. The US broadband market had long been struggling to keep pace with the demands of an increasingly online society, not to mention Silicon Valley’s insatiable pursuit of growth. Google reportedly wanted to challenge the telecom industry’s lag while presenting local governments and the Federal Communications Commission (FCC) with alternative methods of installing broadband faster and more efficiently.³

Accompanying Google’s announcement was a nationwide contest seeking trial locations for Fiber across the country. Out of a pool exceeding 1,100 eager cities, it was Kansas City, Kansas (KCK), first, followed two months later by Kansas City, Missouri (KCMO), that won the distinction. Kansas Citians received the news with great enthusiasm, even though they knew little about gigabit internet or what they could do with it. Still, the city enjoyed national and even international media attention for a while and hoped to use that attention to attract more residents and businesses over time.

When I arrived in late 2015, Kansas City was not the only host of Google Fiber. The company had begun to roll this service out to eighteen other US cities. Fiber was not just an experiment for Google anymore; it was a serious business. Kansas Citians were no longer so exuberant about Fiber either. They had had enough experience with gigabit internet by then to call it simply “just a faster internet.” What

endured, however, was their civic pride about having been named a “Google City.” In every interview, my interlocutors, of their own accord, brought up Fiber as a critical background for the smart city project. The tech giant was proudly acknowledged at every public event I attended, even though the company was not formally a part of the pilot. Google’s selection of Kansas City was considered to be a strong endorsement from Silicon Valley. It was also the city’s first experience of becoming a test bed.

Cities have long been imagined as sites of experimentation, places where bold ideas and novel realities can take root.⁴ But test-bed urbanism, conceived in the early twenty-first century, departs from this tradition. As Orit Halpern and Robert Mitchell argue, with its roots in the cybernetic visions and Cold War-era rationalities of simulation, test-bed urbanism harkens back to Nicholas Negroponte’s concept of a “never-ending series of demos.”⁵ The goal is not to uncover facts in the wild or create finished products but to embrace perpetual experimentation. In this model, preliminary versions always trump the completed product.

This setup is ideal for tech companies, especially those in Silicon Valley, where the engine runs on the continuous churn of hype and capital. As urban environments become more welcoming and flexible for testing, tech giants and startups can continue with their cycles of iteration and appeal to investors. They fixate on the promise of the next release, the next upgrade.⁶ As test-bed urbanism transforms cities into durable testing grounds, the tech industry’s fixation on incremental tweaks also extends beyond prototypes to even social and political settings.⁷ The result is a structure that exists less to make improvements than to sustain the expectation of possibility.

This chapter traces how Kansas City’s experience with Google Fiber laid the groundwork for the city to become a petri dish for other tech companies. Drawing on interviews, media coverage, and policy documents, I examine how the city’s memory of Fiber and the aspirations it seeded shaped the story Kansas City began to tell about itself as a smart city. I ask: What makes a city amenable to

testing for tech companies? How do city officials and residents identify civic value in what is essentially a corporate experiment? I argue that Kansas City's relationship with Google Fiber underscores how tech giants exploit urban austerity and declining investments in local infrastructures while capitalizing on civic aspirations.⁸

By discussing the symbolic and material implications of trialing Google Fiber, I examine how Kansas City embraced testing at the city level and what this initial test bed both revealed and obscured across neighborhoods. Testing a citywide infrastructure exposed stark urban divides rooted in the legacies of capitalism, (sub)urbanism, and racism. Through its experience with a Silicon Valley giant, the city learned what could be manipulated to make urban environments more palatable to the industry and what needed to be overcome (or at least downplayed). As I will discuss toward the end of the chapter, the so-called mistakes of this first test bed, or, more optimistically, "lessons learned," quickly became fodder for framing the smart city pilot.

"GOOGLE PUT US ON THE MAP"

"I think historically, pre-Google Fiber, we always knew that we were cool," Wyatt said with a grin as we sipped coffee and strolled around City Market, "but we always sort of joked we're a flyover state, that there was really nothing to stop and see here."⁹ It was my first visit to Kansas City. Wyatt, a local entrepreneur born and raised here, had graciously responded to my email and offered to show me around while recounting his hometown's recent history. He began with Google's nationwide competition, moved on to how Kansas Citians got together to fill out the application, and concluded with the successive selections of KCK and KCMO. He had the story down pat, just like many other residents did, having retold it many times—often in colorful detail and with catchy one-liners—to out-of-town reporters (and researchers) that came through.

“It coincided with all of this development that we see downtown,” Wyatt said, pointing to the luxury apartment buildings and trendy new coffee shops in the neighborhood. “Downtown reemerging with affordable housing,” he continued, and then paused to correct himself: “I mean affordable housing for young college graduates, not so much for everybody else. But for people who work downtown, come to Power & Light [District] for entertainment, live downtown, there was a new urban city experience.” He hailed being picked by Google as a turning point in recent history but hastened to add that the city was already in the midst of revitalization. “[Fiber] poured gasoline on fire,” he summed it up. Then he delivered the punchline: “Google really put us on the map.”

I would go on to hear this line countless times during my research. On several occasions, people uttered it while pointing to me as proof of this new Google-sponsored visibility. And they were not wrong. After Google’s initial announcement in 2011, many wondered, “Why Kansas City?” and flew into—not over!—the city to find out. Kansas City has received significant media coverage and welcomed many visitors from across the country and abroad. Many local residents, like Wyatt, saw this increased attention as a direct result of the “stamp of approval” the city received from Silicon Valley. A local entrepreneur once suggested that he divided Kansas City’s history into “BGF” and “AGF”—before Google Fiber and after Google Fiber. “We’re not Silicon Valley,” he said, reflecting on the AGF era, “but we’re also not, you know, Podunk Flyover Cowntown either.”¹⁰

The gap between the soaring Silicon Valley and the stagnating “Podunk Flyover Cowntown” was a long time in the making. By the late twentieth century, Kansas City was no longer the heart of an industrial region. A long exodus of residents and businesses, coupled with ongoing economic decline, rendered urban areas desolate and dreary. Many young Kansas Citians like Wyatt, who grew up in the suburbs in the ’80s and ’90s, rarely ventured downtown. A new entertainment district, a performing arts center, and a sports arena—each branded with the city’s few big corporations—tried to lure people back to the

hard-pressed urban core at the start of the new millennium.¹¹ And yet, the pull of larger, more promising metropolises remained strong. Feeling stuck in a cycle of dwindling prospects, many young Kansas Citians harbored dreams of escape in the early 2000s.

The 2008 financial crisis not only derailed the city's budding dreams of becoming a site of attraction but also thwarted young residents' plans to move elsewhere. As local governments grappled with mounting austerity, their quest for more jobs and resources intensified. Around this time, cities became the tech industry's next frontier. Infamous for not letting a crisis go to waste, Silicon Valley companies seized the moment. They began using urban environments as launching pads for various digital platforms, including those that claimed to reinvent housing, public transportation, or delivery services. They ramped up real estate investments in new office spaces, data centers, and warehouses.¹² Cash-strapped local governments embraced the industry's attention to urban areas, envisioning ways to replicate mini-Silicon Valleys across the country. In the early 2010s, fueled by catchwords like "innovation" or "smart," tech companies and their half-baked ideas emerged as the new drivers of urban boosterism.¹³

Google's announcement of the Fiber initiative was therefore more than a mere disruption to the telecom industry. It was also a highly publicized "nationwide lottery" with significant stakes, poised to catalyze a civic reinvention project.¹⁴ In the end, Google crowned KCK the winner in March 2011, and KCMO joined the first Kansas two months later. Newly minted KCMO mayor, Sylvester "Sly" James, fresh from his inauguration just two weeks prior, held his first major press conference at Union Station to announce the news.¹⁵ "Both Kansas Citys now have bragging rights to being a first home [for Fiber]," *The Kansas City Star* declared.¹⁶ Fiber marked James's first political victory, which aligned with and reinforced his mayoral agenda. It also set him up for more ambitious plans to run the city as a mix of digital and physical space.

Born and raised in a working-class family in Kansas City's east side, Sly James served in the Marines before college and then went to

law school in Minnesota.¹⁷ He was the first African American partner at a prominent Kansas City law firm before he started his own practice and became active in key civic and philanthropic organizations. He cast himself as an outsider in a nonpartisan election, untarnished by the city's political machinations. *The Kansas City Star* endorsed him as the charismatic candidate with "a sense of humor, a quick wit, and a dash of humility."¹⁸ He campaigned on a platform of efficiency and data-driven governance, citing Baltimore's CitiStat as a model.

Clinching the Fiber deal showcased James's negotiation skills, which helped secure Google's partnership and foster collaboration with KCK. A bistate, regional cooperation was long desired by the city's civic and business leaders. However, the real maneuvering he pulled off was between Kansas City Power & Light (KCP&L) and the tech giant. Google's ambitious plans hinged on leveraging the city's utility poles to expedite construction, minimize excavation, and navigate bureaucratic obstacles. Negotiations on the Kansas side unfolded relatively smoothly since KCK owned the Board of Utilities. In Missouri, a different utility, the private KCP&L signed a separate agreement with Google, the specifics of which were not disclosed.¹⁹

The contract between Google and KCMO, which was publicly available, demonstrates how the tech giant approached its collaboration with local governments.²⁰ No tax incentives or breaks were offered, but the agreement gave Google access to public rights of way, such as "digging trenches and redirecting traffic to make way for the work."²¹ The city also pledged to provide a speedy turnaround for permit applications within five working days, an executive sponsor inside city hall, a dedicated team exclusively working with Google, and comprehensive GIS data and computer tools for all city-owned facilities. A senior city official I later interviewed suggested that the local government saw its role as "aggressively facilitating" Google's trial run on the ground. The city "willingly waived a few million dollars" worth of permit fees.²² A municipal team convened weekly with Google's local contractors and closely monitored Fiber's construction progress on site.

Silicon Valley has long sold itself on the promise of economic growth without geographical constraints, but Web 3.0—the so-called next-generation internet—touted a new kind of connectivity in which sensors, cameras, beacons, and smartphones seamlessly fused. And so, attention turned to America's often-overlooked mid-sized cities. With vast expanses of land and local governments yearning for investment and new jobs, they began to look enticingly ripe. One of the former heads of Google Fiber, Milo Medin, reportedly demonstrated the company's strategy with a chart: "Population density on the X axis; cost on the Y. [He then drew a smiley face.] Fiber's sweet spot was the bottom of the lip—mid-sized cities—where the installation was not too expensive, and national ISPs did not have major operational focuses."²³ These cities offered a testing ground with minimal interference. As they were removed from the prying eyes of the national press, these new trials could be quietly launched.

Critical voices in Kansas City, including anthropologist Shannon Jackson at the University of Missouri-Kansas City (UMKC), called Google Fiber a blatant case of the privatization of public infrastructure and the diversion of local resources to an already powerful company.²⁴ Jackson particularly derided the local government's disregard for dissenting voices that did not want to relinquish public funds to build Google's internet service.²⁵ There was even some quiet resistance as community organizers tried experimenting with "mesh" networks—decentralized systems of microwave dishes that neighborhoods could own.²⁶ These efforts offered a fragile but defiant alternative to Google's grip on internet access and challenged the presumption that connectivity had to come at the cost of local autonomy.

City officials, however, hardly saw the Google Fiber deal as a concession to corporate power. On the contrary, they repeatedly framed it as a tremendous opportunity for Kansas Citians. A former city council member called it "a bargain in itself," contrasting Fiber's investment (estimated to be close to \$46 million) to the subsidies provided to big construction projects.²⁷ "I cannot incentivize brick-and-mortar projects for that amount of money," she told me in an

interview. “Just the earned media that we got for the last five years, you can’t buy that.”²⁸ To her, this was a chance to position the city as a tech-forward place in the heart of the Midwest.

Despite the critical voices, city officials and many residents held firm in their belief that Google Fiber’s arrival brought with it the weight and recognition of a name that, at the time, was synonymous with tech ambition. Kansas City was finally “on the map.”

“GOOGLE BROUGHT US TOGETHER”

The unmistakable power asymmetry between Google and Kansas City might give the impression that a tech giant duped city officials and residents. But just like city officials, many residents were well aware that this was a deal that would profit the corporation. Wyatt, who was introducing me to Kansas City by way of recounting the Fiber story, was clear eyed about the company’s interest in his hometown: “Google didn’t choose Kansas City because they wanted to do something good,” he said. “They chose Kansas City because there was the least amount of barriers to entry.” The tech giant, he summed up, was “hooked on favorable legislation and favorable government.” This awareness, however, did not stop many Kansas Citians from feeling invested in Google Fiber’s success. What Google did not know at the start—but extensively exploited once it did—was that residents were ready to labor to support this trial.

In local narratives, becoming a test bed for Fiber was not a top-down diktat; it was a groundswell. In contrast to the extensive incentive packages cities usually prepare to attract corporate investments, many Kansas Citians I interviewed used the word “grassroots” to describe how their hometown rallied around Fiber. Residents spoke of a city transformed, a place where civic pride and corporate interests had somehow intertwined, and they acted as if they were partners with Google. They also described a new civic entrepreneurial spirit, a knack for taking initiative and driving change, which, as the

next chapter will discuss, would only intensify in the years to follow, with the city morphing into a smart version of itself.

“Without Google Fiber, Kansas City could not have organized itself in the way that it has and come under one hat,” explained Wyatt. His use of “Kansas City” did not refer to each and every resident, of course. But it still aimed to capture a broad coalition, which, he believed, might not have worked together otherwise. Much like the city’s newfound visibility and recognition, residents attributed the gathering of this “diverse” group to Google’s arrival. The origins of this community were traced back to the very first meeting where a few Kansas Citians got together to fill out the application form for Fiber. Wyatt suggested I talk to his friend Cody, who was active in those gatherings.

“It all started with whiskey and a couple of folks sitting around a Google Doc filling in the answers we could,” Cody said when I met with him to hear his version of how the city became a test bed for Fiber.²⁹ Born and raised in a small Missouri town, he was running a startup from a spacious loft in the city’s Crossroads Arts District. A local investor believed the city was well suited to host Google’s trial and spearheaded the first few meetings after hearing about the call. “Like when the railroads decided to run through Kansas City instead of St. Joseph in the 19th century,” this investor figured, his hometown could be the starting point for this new super-fast internet.³⁰ Soon, a city council member, senior officials from the local government, and other passionate residents joined the group “Google KC.” Cody described them as “a community of creative folks.” A sign-in sheet from one of their meetings in February 2010 showed nearly sixty people present. Cody recalled that at some point there were more than a hundred people in the room, working on the same Google Doc.

Cody’s description of Google KC sounded like a case study in Richard Florida’s theory of the “creative class.”³¹ In the early 2000s, Florida proposed a new prescription for cities seeking economic growth: rather than chasing after big corporations, they should focus on drawing in young creative professionals from fields such as

finance, management, and technology. Instead of investing in sports stadiums, urban malls, or theme parks, cities, Florida asserted, should cultivate the three Ts of economic development: technology, talent, and tolerance. In Kansas City, it seemed, a bunch of creative, talented people got together to attract a major tech corporation to their hometown.

It was almost as if, to check off Florida's third T, members of Google KC took pride in emphasizing the diversity within their ranks. A former city council member, for instance, enthusiastically called Google KC "one project that really broke all the barriers down citywide."³² She then went on to list the racial divide, the Missouri River, and the state line, all of which, she felt, dissolved in the group. She marveled at the cross-generational, cross-sector collaboration in the room, including the "high school kid who was working on his own app." She added, "We would have those meetings, and you'd see somebody ride up on a bike and somebody pull up in a Mercedes." For many Google KC members who were raised in or still commuted from the suburbs, a room full of Kansas Citians with different life experiences felt like a glimpse into the urban diversity they longed for while growing up. When this city council member received a phone call from Google, she recalled saying, "We have already won," even before hearing their decision. "We've discovered this whole subculture in our own community," she added, "that alone is going to be big."

One of the things that bonded the members of Google KC was a lack of broad knowledge about gigabit internet itself. They did not know what made it so novel, what Google's terms might entail, or how the city might leverage this new network. Cody described his astonishment that they were writing the application "in the context of not knowing what Google Fiber really was."³³ Even after securing the Fiber deal, uncertainty lingered. Google's early announcement did not clarify whether the company intended to wire the whole city or build networks in select neighborhoods. "We did not know what it was going to look like, how much it would cost, what the product was, and we didn't even know when this was going to happen," one

resident recalled.³⁴ Google stayed mum about its rollout plans for almost a year.

As city officials were scratching their heads to come up with a plan, civic groups and businesses took it upon themselves to keep the momentum going. The Kauffman Foundation launched KCGigIdeas.com, a website where residents could submit creative ideas about how to use the gigabit internet. A local tech incubator, which assists early-stage businesses with financing and mentoring, announced the Gigabit Challenge, offering a \$100,000 prize for the best business idea that leverages Google Fiber's potential. None of the proposals seemed "more practical with gigabit speeds," a local journalist reported, but residents were enthusiastic about getting together and continuing to explore ideas collectively.³⁵ Amid the uncertainty, Google's local community manager tried to ease concerns by likening the situation to a pregnancy, saying, "You may not know if you'll have a boy or a girl, or exactly when it will arrive, but it still makes sense to get the nursery ready."³⁶

The ongoing ambiguity suggested that the company either launched this initiative without a concrete plan or struggled to communicate with local publics effectively. However, as Google's schedule to start installing fiber-optic cables continued to be delayed, residents and civic groups ramped up their efforts to figure out what to do with the forthcoming speedy internet. Some former Google KC members reached out to the public library and neighborhood associations to hold community meetings about Google Fiber. One described what they were doing as "reading the tea leaves," but they still considered it important to get the information about the gigabit internet to residents, who, he described, were "hungry for information."³⁷

The city governments on both the Missouri and Kansas sides also tapped into this civic energy and appointed a "Bistate Innovation Team" tasked with exploring the potential of Fiber. The team spent seven months meeting with several local communities and documenting what was already happening on the ground. Ultimately, they published a thirty-seven-page "playbook" entitled "Playing to Win in

America's Digital Crossroads.”³⁸ As policy reports titled “playbook” tend to go, it was chock full of random examples and lofty goals. But it also had a realistic tone. The team resisted the urge to sell Fiber as a fix-all, noting that “[a] successful internet economy is 90 percent sociology and 10 percent technology.” No one really knew what Google intended for Kansas City, nor what the gigabit internet could achieve. But that did not matter too much. The playbook emphasized what people could do instead, or the so-called sociology piece: community support, digital inclusion, and civic coordination across the state line.

Even by Silicon Valley standards, Google is a notoriously secretive company, so it is hard to know why it took so long for Fiber to announce any concrete plans, not to mention how the company communicated with city officials in the lead-up to the launch. But its lack of clarity and communication inadvertently ignited a civic spirit among Kansas Citians, who desired to reinvent their hometown around what they considered a rare opportunity to become a hub of innovation. Backed by the city's local governments and key civic organizations, residents from different parts of Kansas City had several occasions to get together. Meetings about Fiber took on the feel of civic rituals, spaces where people could project a kind of collective hope. They spent days hashing out strategies not because they fully understood Google Fiber but because they wanted to believe in a Kansas City that could finally draw people in instead of watch them leave. As they tried to articulate new urban futures for their hometown, Google was taking note.

DIGITAL REDLINING

In July 2012, more than fifteen months after selecting Kansas City, the company was ready to launch Fiber. The press event took place at the new Google Fiber Space, two small brick buildings at 1814 Westport Road, which intersected Stateline Road, the two-lane street that

divides KCK from KCMO. The promotional video drew on the construction of the railroads in the 1800s as an analogy to what Google Fiber could do for Kansas City, which was similar to how Google KC members had narrated their aspirations more than a year ago.³⁹ When Kevin Lo, then-general manager of Google Fiber, took the stage, he told the crowd, “Fiber is different, and getting it is a little different too.” The company’s unconventional rollout plan asked residents to pay a \$10 fee to show their interest in Fiber before the end of summer. If enough households registered before the deadline, the neighborhood would turn into a “Fiberhood,” prompting Google to begin installing fiber-optic cables. “[We will] build out if there is enough interest and build in the order of most interest,” Lo said before announcing a six-week rally, which he described as being “between a pep rally and a car race.”

In a marketing campaign that stressed civic pride over corporate interests, Google Fiber urged residents to organize their neighborhoods and to “do it for Kansas City,” not for Google. Media and communication scholar Germaine Halegoua notes that the company intended to foster “a sense of ownership and control over the network.”⁴⁰ Optics-wary Google was of course keen to avoid the appearance of parachuting into a city and imposing its will upon residents, even as it effectively did so. The company representatives claimed that this participatory approach was not a publicity stunt. They wanted to amplify and support the existing grassroots efforts already underway. Kansas Citians’ eagerness to articulate a civic value for the city via Fiber was an unexpected but fortunate benefit.

During the six-week rally period, Google publicized the progress of Fiberhoods on a website via a color-coded map. If a neighborhood met its registration goal by signing up enough residents who paid the \$10 fee, it turned green on the map. Otherwise, it stayed yellow. The map intended to stoke a fun competition across the city and invite people to call on their neighbors to sign up. “I remember two people knocking on my door encouraging me to sign up for Google Fiber and I was shocked,” a local entrepreneur recalled this period.⁴¹

“Unless it is a political election season, people never would have showed up at doorsteps.” He added, “I never talked to my neighbors about anything, ever.” This door-to-door outreach felt like an extension of all the prior community gatherings around Google Fiber (“yet another occasion to bring people together”) or at least that is how participants wanted to remember it. Volunteers continued visiting community meetings to spread the word about signing up for Fiber and worked at the public library to help residents navigate the online registration.

Six weeks went by fast. As the registration period neared its deadline, the Google Fiber map began to display a pattern that starkly mirrored the city’s historically racist dividing lines: The green dots were all over the predominantly white and well-off west side of Kansas City. By contrast, the yellow dots covered the less prosperous east side, home to the city’s minoritized residents. “It was like a black light in a hotel room,” as a resident described the map to me in an interview. “It showed all the sores and problems.”⁴² Those volunteering at the public library shared that they had somewhat anticipated this divide. It was clear to them which neighborhoods needed more help to sign up for a Google account or relied on prepaid credit cards to pay the \$10 fee, which could only be paid online. But even those who had been knocking doors were struck by the visual clarity of a divided yellow-green map.

“Is Google Fiber perpetuating the digital divide?” and “Is this digital redlining?” were some of the pressing questions prompted by the map, capturing headlines across both local and national media. With each news story, Google Fiber’s striking yellow-green map circulated further across the internet. Former mayor of Kansas City and then Democratic congressman Emanuel Cleaver sent a letter to Larry Page, cofounder of Google, warning that “preliminary statistics suggest the beginning of a ‘digital redlining.’”⁴³ In response, Google Fiber extended the rally period and reopened sign-ups. It dispatched its teams to reach out to neighborhoods on the east side. Some civic groups also ramped up their efforts and launched

a campaign dubbed “Paint the Town Green.” This fundraising drive asked residents who had already paid the \$10 fee to pitch in for other neighborhoods.⁴⁴ In the words of one civic leader, the city was focused on seeing “a completely green map” after a “flop” that had captured national attention.⁴⁵

By the end of this extended registration period, Google announced that 94 percent of neighborhoods in Kansas City reached the sign-up targets. The map was finally almost entirely green. In the end, the company reportedly laid about ten thousand miles of fiber-optic cables, thereby completing a near-citywide rollout.⁴⁶

This episode was described as a misstep by some civic leaders, rectified by what they called “a community success story.”⁴⁷ In this narrative, while the company’s marketing gimmick may have backfired, residents quickly organized and demanded more from the tech giant, pressuring other telecom companies to follow suit. However, it soon became apparent that Google was a serial offender as Fiber rolled out to other cities and the company launched other urban initiatives. For instance, Google prioritized affluent neighborhoods in Fiber rollout plans in cities from Nashville to Atlanta.⁴⁸ When it launched another connectivity initiative called LinkNYC in New York City circa 2015, the company was called out for dismissing the city’s low-income areas at the expense of wealthy, well-connected neighborhoods.⁴⁹ At best, Google failed to grasp what was at stake in launching digital infrastructures in cities where inequalities were rampant. At worst, the company demonstrated clear class bias.

Germaine Halegoua, who conducted fieldwork in Kansas City during Fiber’s launch and its immediate aftermath, documents that the company’s advertising and outreach efforts had a “class-based system for broadband use.”⁵⁰ The gigabit internet, with its emphasis on speed, targeted active and high-volume internet users, promoting Fiber as “a mark of privilege.” After the initial rally campaign faltered, for instance, Halegoua notes that Google employees in the Fiber showroom shifted their pitch for working-class residents, emphasizing the relevance and necessity of internet connectivity.

By design, Fiber prioritized single-family home ownership, thereby excluding renters and unstably housed residents. Cody, for example, expressed his initial disappointment that Fiber was not like “a distributed mesh where a hundred people in a neighborhood can subsidize the others who cannot afford it.”⁵¹ Without deliberate efforts to counteract it, digital infrastructures invariably inherit the inequalities embedded in the city’s earlier structures. In contrast to Google’s marketing strategies, which stressed mobilizing neighborhoods, Fiber was not designed to serve the entire city nor to accommodate a collective urban life. Given how class stratification intersects with racial inequalities in the United States, it was, in a way, inevitable for Google Fiber to reproduce the legacies of segregation in cities.⁵²

Many Kansas Citians I interviewed in 2015 recalled this episode with practiced sighs, acknowledging what went wrong and recognizing the city’s collective efforts to remedy it. But none of that was forgotten. If anything, Google Fiber, albeit unwittingly, revealed the enduring spatial, racial, and class divides in the city. To rehabilitate its image afterward, the company embraced “digital inclusion” as a cause and provided free connectivity to public institutions such as schools and libraries and funding programs for nonprofit organizations. This experience also instilled a new sense of caution among city officials and civic leaders not to create a new “digital divide.” As I will discuss in the following chapters, the city’s divides and a desire to overcome them came up routinely in the smart city pilot. The local government proactively embraced digital equity as an ongoing concern and a policy objective alongside the smart city initiative.

CONCLUSION

Since the late 2000s, Silicon Valley companies have extended the idea of prototypes to the built environment and embarked on large-scale projects beyond just software. “Because prototypes are incomplete, half-cooked, and in need of development,” Fred Turner argues, “they

solicit the collaboration of users and others.”⁵³ For tech companies, the collaborators have increasingly become local governments and eager residents in urban areas. Municipalities are often so thrilled about and inexperienced with hosting tech companies that the industry easily bends municipal rules and regulations to its benefit. City officials, civic groups, and entrepreneurial residents become eager to fill in the blanks left by tech firms.

A gigabit internet is perhaps not the first nor the most exciting component when one imagines a smart city. Even among colleagues, people would sometimes scoff upon hearing my findings: “All these people got so excited and ended up with just a faster internet?” The tone lingered in that academic in-between—more a comment than a question. This remark, however, missed two things. First, smartness depends on ubiquitous connectivity. Any city that wants to become smart needs to start simple. Second, such simple initiatives were often enough to foster collective excitement about opening the city up to various prototyping run by the industry. The rollout of Google Fiber offered tech companies an inch, and many quickly took a mile.

Using Kansas City’s relationship with Google Fiber, this chapter has documented the structural conditions that enabled citizens’ and city officials’ eager acceptance of turning urban environments into test beds for Silicon Valley’s work-in-progress ideas: municipal austerity caused by many years of neoliberalism and exacerbated by the Great Recession, urban boosterism for a somewhat forgotten city, and a search for a new civic identity. Kansas City’s story is both uniquely American and parallels the stories of many global cities where technology has increasingly become a central ideology in local governance and where tech companies have been folded into the city’s traditional “growth machine.”⁵⁴

Circa 2015, “gigabit fever,” as some called it, had already petered out in Kansas City. Early users of Google Fiber were done with the initial hype. White vans with Google-colored Fiber bunnies were a routine sight on the streets, not a source of excitement. And people were not dreaming that big with the gigabit internet. “The early

marketing for Google Fiber was ‘Do this for Kansas City,’” Wyatt said as we were wrapping up our chat and walking back to his car, “but Google was not going to facilitate the actual change; they were merely bringing this high-speed connection.”⁵⁵ What he meant was that it was up to residents to complete the social and political groundwork needed to make the infrastructure matter.

In the end, the Playbook’s emphasis on “90 percent sociology” seemed to resonate with residents like Wyatt, who largely let Google off the hook for whether it delivered on its initial promises. And by then, the city had already moved on to a new test bed: the smart city pilot. The next chapter turns to how this new initiative came about in Kansas City and how, once again, local officials foregrounded the sociology piece. It introduces a new model of civic engagement, one that mobilized the city’s local entrepreneurs in search of problems fitting for smart technologies.

2 Technocracy on a Hill

In April 2015, the Kansas City Council approved a \$15 million deal with Cisco to transform a two-mile stretch of downtown into a prototype for a smart city. Tied to a new streetcar line, the project aimed to build a network of smart LED streetlights, video sensors, and digital kiosks. It was to run on Cisco's "Smart + Connected Communities" platform, with Sprint, a telecom company, stepping in to build a public Wi-Fi network and an advertising platform.¹ A local startup incubator joined the partnership to develop a "living lab," wherein civic entrepreneurs could use the data collected through the pilot program to solve the city's problems. Kansas City's ambitions extended far beyond the project's modest coverage. "Kansas City to Become the Largest 'Smart City' In North America" announced local news, capturing the hopeful, if inflated, expectations that accompanied the arrival of smartness.²

How did the idea of the smart city take root so quickly? Why did the local government leap into another ambitious, and relatively obscure, pilot program rather than proceeding cautiously in the wake

of the digital redlining saga that followed Google Fiber's launch? This chapter examines how Kansas City embraced the smart city not just as a set of technological solutions, but as a way to import startup culture into local governance and civic life. Unlike the common critiques of smart cities as top-down, corporate-driven impositions, Kansas City's pilot project neither was the sole pursuit of the local government nor did it parachute into the city. The city's recent history as a testing ground for Google Fiber and the mayor's commitment to a tech-forward urban policy certainly played a role, as I discussed in the previous chapter. But they only tell part of the story.

The true catalyst was what I call "civic entrepreneurialism": a loosely organized network of local startup founders, city officials, and nonprofit leaders who shared a collective belief in blending Silicon Valley-style risk taking with civic engagement.³ Kansas City's civic entrepreneurs, many of them young professionals working in tech-adjacent fields, played a central role in the push for a smart city pilot. Their ethos blended opportunism with a genuine commitment to the city, a mix of the entrepreneurial ambition celebrated in Silicon Valley with a more grounded, local sensibility. Hustling to build a new business assumed a civic purpose for them. They saw working with digital technologies not as mere business pursuits but as civic acts. Much like when Kansas City's aspiring entrepreneurs stepped up in the wake of Google's uneven rollout of Fiber, tech companies like Cisco and Sprint recognized that it was this community of civic entrepreneurs who would become the face of the smart city initiative.

Eager to put the "public" back into public-private partnerships, the local government continually engaged this group as a collective voice to shape the city's smart future. Unlike the city's traditional power brokers, such as wealthy families or trade associations, it was this younger cohort that was invited to take part in formal partnerships or municipal advisory boards. Civic entrepreneurs offered their creativity and fluency with digital technologies as resources for the local government. They promoted an entrepreneur's "doer

mentality”—which they described as the impulse toward action and innovation—as a new form of civic responsibility.

Civic entrepreneurialism often took shape in more casual public gatherings where local ambition, entrepreneurial rhetoric, and municipal planning converged. One such moment came in December 2015, more than six months after the initial announcement of the smart city project, when the mayor’s office hosted a gathering at a downtown coffee shop. Organized by the office of innovation and titled “Urban Momentum: Where Conversation Meets Innovation,” city officials aimed to provide an update on the smart city project for residents. The announcement on social media encouraged people to “make [the smart city project] robust and move Kansas City forward.”⁴ I was busy typing field notes somewhere in midtown when I stumbled upon the news on Twitter (now X). I quickly boarded a bus. Once I arrived, several dozen Kansas Citians, mostly white and in their late twenties to early thirties, were already packed together in a semicircle. They faced a delegation from the mayor’s office that included an innovation officer, two data officers, and a public relations officer.

“We are playing around with the language. In fact, we are in the middle of switching to a good name other than the smart city,” one of the city officials announced as she opened the event. “Because this is something that is going to go on and on and on and will basically change the way that Kansas City operates.” Another official chimed in, emphasizing that the pilot was not about “putting up a bunch of sensors and collecting a bunch of data to make good decisions.” He enthusiastically added, “It is really about making your experience with downtown different than in any other city.”

City officials took turns explaining the various systems that would form the backbone of the smart city pilot: sensors installed along the new streetcar route, public Wi-Fi, interactive kiosks designed to both collect data and improve the experience of visitors downtown. Yet, they emphasized, the true potential of this transformation lay

not in the infrastructure itself but in “those who could be inventing solutions based on the data collected by sensors.” One of them declared, “You’re going to help drive that whole revolution in the way we experience downtown. And eventually, that will spread to other parts of the city as well.”

Over the next forty-five minutes, young entrepreneurs, creative professionals, and local business owners spoke about what they “wanted out of the smart city,” prompted by city officials eager for feedback. Words like innovation, communication, efficiencies, collaboration, and a brand-new experience of or in the city came up repeatedly. But underneath these optimistic projections was a noticeable vagueness. A few people tried to cut through this haze, asking specific questions such as “How would new software be tested within city government?” or “What could be done to foster more diversity in these public meetings?” In response, city officials nodded earnestly and promised to return with more detailed responses in the future. As the event wound down, two recurring themes stood out: The city was committed to involving residents in shaping the smart city and this initiative was more than just installing sensors.

Events like “Urban Momentum,” several of which I attended throughout my fieldwork, were framed as spaces for civic input on the smart city. They were open to all, but those who showed up, or those who could show up, were mainly from the city’s “creative class” and predominantly from the entrepreneurial community. Civic entrepreneurs who routinely showed up were enthusiastic about their newfound role in local politics. They seemed invested in the city’s future. But often these events were more than just forms of civic engagement. They also provided opportunities to court investors and major tech companies, both of whom welcomed the prospect of young residents working to align the city’s issues with their half-built products.

Anthropologist Lisa Messeri uses the term “technological terror” to capture how the production and consumption of technology

take on a distinct flavor depending on the local environment.⁵ Kansas City's particular technological terroir, in which entrepreneurial energy became a desirable form of civic engagement, speaks to a broader trend in urban politics. Civic entrepreneurialism, on the one hand, seems to confirm what critical geographers and urban studies scholars have observed about American cities since the 1980s: As federal investment receded and capital flowed more freely globally, cities have been compelled to vie, nationally and internationally, for investors, skilled workers, cultural spectacles, and tourists.⁶ The smart city, with its sleek façade, is just a high-tech variation of such urban entrepreneurialism. It is the kind of city that is "technologically led, corporately influenced, and tied to competitive models."⁷

On the other hand, the smart city departs from previous forms of urban entrepreneurialism by weaving the ideology of entrepreneurship in Silicon Valley with civic engagement to enroll residents into the emerging test bed.⁸ In addition to framing it as a growth opportunity, local governments pitch smartness to a new cohort of citizens and invite them to engage in municipal decision-making.⁹ Caught between the prototypes of tech companies and the persistent challenges of the city are civic entrepreneurs, who express a genuine concern for their city and seem, at least from the outside, to hold the key to unlocking the potential of smart technologies.

In the next section, I introduce the civic entrepreneurs of Kansas City, tracing how their entrepreneurial pursuits gradually merged with civic life and solidified their influence in local governance. Then I shift focus to the local government and explain how the civic, in turn, also became more entrepreneurial. Like many cities across the country, the mayor's office established an innovation office and intentionally pursued the entrepreneurial community in its various initiatives. The last two sections of the chapter document the ways civic entrepreneurs acted as intermediaries between the city and tech companies in order to transform a neglected downtown infrastructure issue into an experimental test bed for partially developed smart technologies.

MEET THE CIVIC ENTREPRENEURS

Driving down State Line Road, which divides the Missouri and Kansas sides of Kansas City, one might hardly notice the Google Fiber showroom. Despite its lavish interior meant to showcase everyday uses of the gigabit internet, the one-story red brick building barely stands out. Narrow, potholed streets nearby are dotted by modest one- and two-bedroom houses with lawns decorated with pennants and banners of local sports teams—KC Royals or Chiefs, mostly both. This area is called Spring Valley. Once a neighborhood known for its antique stores, it became Kansas City's first-ever Google "Fiberhood" in November 2012. It was consequently home to the "Kansas City Startup Village," a tech commune that emerged after a few local entrepreneurs set up shop in the neighborhood in order to be hooked up with Google Fiber. The Village, by late 2015, hosted more than two dozen local tech startups.

Most local entrepreneurs grew up in the nearby suburbs of Kansas City, with rare visits to the "urban core." During those visits, they recalled how one "could literally throw a rock and not hit anybody down the street" downtown. Tourists or business travelers were a rare sight, and most buildings stood empty. These young people wanted to escape their hometown fast in their formative years. "If you dreamed of doing anything innovative or progressive," a local entrepreneur in the Village told me, "You didn't see yourself here."¹⁰ However, the 2008 financial crisis temporarily shelved their dreams of moving elsewhere. The recession was at its peak when most of them graduated from college. Then, Google Fiber arrived in Kansas City, and these young people, mostly white men in their twenties, recognized the possibility to follow their dreams right where they grew up.

One of the Startup Village coleaders, Max, had a similar trajectory. He studied computer science at the University of Kansas and then worked in telecommunications and finance. His most recent position was as a tech developer at a startup in Boulder, Colorado.



Figure 2. Typical startup house in Kansas City Startup Village. Photo by author.

He eventually quit and decided to move back home. Max's house was among the first to have Google Fiber installed in Kansas City, a milestone he documented through a series of YouTube videos in 2012. Before long, his basement became a meeting point for local entrepreneurs who wanted to replicate the familiar Silicon Valley tale of garage-to-riches, this time with the advantage of superfast internet.

The first villagers liked to boast that nothing was intentional. Startup properties kept lining up within half a block, they recounted, forming what they touted to be “an organic, grassroots community.” Just six doors down from Max, another house called the Homes for Hackers hosted an ever-changing cast of entrepreneurs from across the country who received access to high-speed internet and up to three months of rent-free accommodation from the owner, Ben Barreth, a software developer.¹¹ As more people moved into these houses

to take advantage of the superfast internet and start businesses, the Kansas City Startup Village gradually assumed a collective identity.

After spending more time with these young men, I noticed that they saw their individual ambitions as inseparable from the city's aspiration to become a new Silicon Valley.¹² Max, for example, often described his daily "grind," such as networking at events or pitching his startup to investors, as a way of "giving back" to the city.¹³ It was common to hear from him and other entrepreneurs that "Kansas City [was] their second startup." In group conversations and during interviews, these entrepreneurs stressed their role as "the biggest champions of Kansas City." In contrast to their counterparts in the Bay area or East Coast, they repeatedly referred to "caring little about personal gain" in building their own startups.

Their businesses carried a social mission. At the very least, most local entrepreneurs saw their work as being in quiet opposition to the prevailing small-c conservative political culture of Kansas City and, to a less-visible extent, to Republican party politics. A nutritional support company, for example, worked with a local nonprofit to volunteer at community gardens and organize food drives. There was also an apparel business that prided itself on ethical practices, donating its products to women's shelters and health clinics. "Weaving purpose into profit" was a shared vision among these young entrepreneurs.

At the same time, despite criticizing local institutions such as school districts or local governments as inefficient and slow, many of these founders were eager to engage with them. "It is important to us to keep the business [in Kansas City]," one founder of a gov-tech firm suggested.¹⁴ Another said, "Everyone in the startup scene is genuinely interested in improving Kansas City because it is the right thing to do."¹⁵ It mattered to build something new in their hometown and make the city itself a product of their values.

Tying scrappy business ideas to a grand mission of changing the world is a notorious feature of the contemporary tech-startup culture.¹⁶ Were Kansas City's local entrepreneurs merely localizing this well-known Silicon Valley trope as they began their pitches with

“Imagine in Kansas City” and described how their business would make the city a better place? Perhaps. But in Kansas City—and many other cities across the United States in the mid-2010s—this enthusiastic preaching found an eager audience in local governments. The next section examines how municipalities embraced civic entrepreneurialism, folding Silicon Valley–inflected language and innovation practices into bureaucracies.

BENDING LOCAL BUREAUCRACIES TOWARD INNOVATION

On any early morning at Mildred’s, a local coffee shop on the corner of 18th and Wyandotte in the Crossroads, Kansas Citians rush in for a quick bite and sip before disappearing into the office buildings nearby. As the line of customers flows on, the counter and the tables are taken over by a few business meetings that are so loud the other patrons have to raise their voices to carry on a conversation. On one of those rush-hour mornings, I sat across from Hillary, then a city official who played a crucial role in Kansas City’s technology and innovation projects. Hillary first energetically walked me through how Kansas City had embarked on the smart city project. “It is the biggest thing I have ever done in my life,” she declared with a beaming smile, “It is amazing!” Then a touch of dismay momentarily clouded her face. She was afraid the city might become a failure, and other cities would later single them out by saying, “Don’t do what Kansas City did.” “I am going gray and losing a lot of sleep because of it,” she confessed. And then immediately added, “But it’s still totally exciting!”¹⁷

In any smart city project, it is almost cliché that municipalities are described as too eager to partner with tech companies. But a handshake between a mayor and a tech executive does not make a smart city. The actual work of sustaining such initiatives often falls to local bureaucrats like Hillary, who operate more like project

managers and hype the vision, manage crises, and smooth over conflicts. These city officials are often found at “innovation offices,” recent units within local government tasked with spurring a (usually digital) transformation within public agencies. They interface with companies, foundations, and local entrepreneurs to build partnerships. Across the United States, there are only a few dozen chief innovation officers, each tasked with a loosely defined mandate but all sharing a common guiding principle: to foster a culture of risk taking and experimentation.

Innovation offices are a product of early twenty-first-century governance. In the absence of political will and adequate public funding to tackle municipal challenges, local governments increasingly turned to innovation in a specifically techno-utopian, or what Meredith Broussard calls a techno-chauvinistic, sense: Only technology could facilitate creative transformation.¹⁸ These new offices were set up to deliver unconventional solutions and import entrepreneurial thinking into the public sector.¹⁹ “We’ve been designed to have entrepreneurial agility,” suggests Chris Osgood, who cofounded the mayor’s office of New Urban Mechanics in Boston in 2010. “Part of our role is to be experimental.”²⁰ Promoted by large foundations such as Bloomberg Philanthropies and federal government initiatives such as the Obama Administration’s “presidential innovation fellowship,” innovation offices represent the latest iteration of a long-standing desire to run government like a business. But this time it is modeled after a bootstrapping startup.²¹

The day-to-day reality for innovation officers, however, is more complicated. Their work is a tangle of uncertainty and civic boosterism; it involves the constant need to project momentum and a persistent fear of failure. Their attention shifts uneasily between public officials, who demand results and entrepreneurs, who often treat them with skepticism. Other municipal staff struggle to grasp what the innovation office tries to achieve, while external partners often dismiss this unit as an extension of an outdated, dysfunctional local government.

Pressed to explain why a focus on innovation in government is necessary, the innovation officers I interviewed resorted to platitudes like “the private industry has elevated everyone’s demand for service delivery.”²² They believed residents now expected similar access and speed from local governments. One innovation officer described their job as “asserting a rapid prototyping [of] ideas.”²³ If the city wanted to experiment with a platform for paying speeding tickets or sending out reminders to SNAP recipients via text messages, for instance, the office of innovation would step in to coordinate. “It helps to have this outsider person to take on the risky role of trial and error,” the same innovation officer explained. “The government is not built to manage [trial and error] so that’s why you need someone to have that concentrated role.”²⁴ If nothing else, innovation offices are wedged between those inside city hall pushing for change, usually a mayor or city manager, and the others, often staff, who resist it.

The budgets and teams at the innovation offices also pale compared to other municipal departments. In some cities, these are just one-person operations. Therefore, staff chase after federal funding or seek external collaborators to initiate new projects. Akin to a startup, innovation officers spend most of their time networking and fundraising with tech companies, foundations, academics, and local entrepreneurs. “My role was created with the goal of serving as an internal catalyst in the organization to create new ways of thinking about how we work, and often doing it in a very lean way,” one innovation officer described their job. “I don’t have any budget. I rely heavily on collaboration.”²⁵ Working in small teams with minimal funding, innovation officers find it convenient, and perhaps even necessary, to partner with local entrepreneurs.

Some city officials I met during my fieldwork, both in and out of Kansas City, took pride in claiming they were also “entrepreneurial” at city hall, which meant to signal their willingness to experiment with new ideas and collaborate with local entrepreneurs. Consider what then-Atlanta mayor Kasim Reed said in 2017 at the South by

Southwest Festival (an annual festival of tech, music, and film in Austin, Texas, which attracts as many engineers as music fans): “We used to make [decisions] alone with people that had almost no relationship to technology at all. Now, in every single meeting, someone is in the meeting saying someone can do it better with technology.”²⁶ Entrepreneurs are offered a seat at the table whenever the local government wants to apply for federal grants or launch advisory boards to oversee technology-driven initiatives.

In 2013, then-mayor Sly James appointed Kansas City’s first chief innovation officer, who was followed by a series of staffers serving in the office up until 2019. Acting like civic boosters, Kansas City’s innovation office routinely ran programs targeting the city’s local entrepreneurial community; it aimed to “give them a place to test their products” in the city.²⁷ As the idea of a smart city pilot gained traction, the small team at the office of innovation assumed a central role in spearheading the partnership between the private stakeholders and the mayor’s office. They served as the primary contact to field questions from city council members and residents at public meetings. Even when they did not fully know the ins and outs of how the pilot unfolded, which I will talk about more in the next chapter, they tried to respond to every query. They also routinely got together with the city’s entrepreneurial community in events like the one I described at the start of this chapter to seek out potential use cases for smart city data.

Innovation officers in Kansas City were careful to act as buffers against the risk and potential setbacks associated with trying out smart technologies. For instance, they spent many hours collaborating with the University of Missouri-Kansas City Law School to prepare for any possible privacy risks. “When someone comes to us and says, ‘I want to hang these things on your poles,’ we don’t have any guidelines to evaluate these projects,” an innovation officer suggested in an interview.²⁸ “I network very closely with a lot of our peers,” they continued. “There just isn’t a ton of precedent out there, so we’re kind of figuring it out as we go.”

The office of innovation is, at its core, a neoliberal response to the deepening crises in municipal governance, made worse by the steady erosion of public funds.²⁹ Faced with mounting challenges and dwindling budgets, city officials turn to local entrepreneurs and tech companies, hoping that novel solutions will emerge for old, seemingly intractable problems. Stripped of power and resources, cities cling to data and innovation as lifelines. And innovation officers become the public face of this new, knowledge-driven search. Between the opportunistic desire to repair infrastructural decay via digital upgrades and the rebranding of municipal offices as creative business partners, the smart city provided the ideal platform for the collaboration between city officials and civic entrepreneurs.

SMARTNESS COMES TO KANSAS CITY

Cisco's office in Kansas City was nestled in a wealthy suburb called Overland Park. Nearby loomed the headquarters of Sprint (now T-Mobile), a once-dominant telecom giant that originated in rural Kansas. The idea for Kansas City's smart city project, as Nathan, a senior manager at Cisco, recounted to me, arose out of an offhand conversation between him and another Cisco manager, exchanging ideas over pizza in a boardroom. At the time, Nathan managed Cisco's local public sector team. He was listening to a colleague complain about the company's local challenge: how to avoid some costly upgrades while still helping address Sprint's network issues, which were threatening to cost Sprint its customers. Knowing that Cisco's leadership was eager to roll out the new smart city program, he wondered if this infrastructural crisis could become an opportunity. "We knew every city in the country was going to go through this transition to become a smart city," he said, as if the trajectory was inevitable.³⁰ Sprint needed an upgrade, and Cisco needed a testing ground. After a quick deliberation, he and his colleague decided that a partnership between Sprint, Cisco, and the city government could be the solution.

Cisco's interest in smart urbanism can be traced back to late 2000s. In 2009, the company launched an urban development program (which later became "Smart + Connected Communities [S+CC]") and reached out to global cities to test networked technologies in energy efficiency and water management.³¹ The company's most visible smart city venture was in Songdo in South Korea.³² Cisco wired the city from the ground up on a former landfill on the northwestern coast of the country. The goal was to experiment with video conferences in all buildings, mobile phone-controlled residences, a customized public transit, and a waste management system that would eliminate trash cans on street corners.³³ In addition to showcasing and testing the potential of smart technologies in an urban setting, Cisco aimed to understand how local governance could become a management program enabled by a network of various devices.

The company then launched "Cisco Kinetic for Cities" (which later became "Cisco IoT Operations Dashboard") in 2017 as a cloud-based platform that would provide the smart city infrastructure for cities.³⁴ The platform aimed to aggregate and organize data collected from urban infrastructures and external devices. In that same year, Cisco ventured into offering advice and funding for financing cities' smart city experiments.³⁵ Seeking partnerships with municipalities, the company transformed its offerings; it would now "provid[e] both the technology architecture and the vision . . . for how [to] use this technology to change societies."³⁶ It was during this particular moment in the company's history that Nathan saw an opportunity for Kansas City.

Mayor Sly James was in his second term at the time. As I discussed in the previous chapter, his vision for the city hinged on what he called the "economic infrastructure of the twenty-first century."³⁷ "Entrepreneurs don't necessarily always have to produce a product," he reflected once. "I didn't see any reason why we couldn't do things a little bit differently in government. And by doing that, we hopefully encouraged an entrepreneurial ecosystem to develop and grow."³⁸

He prided himself on having a team that pursued many tech-driven initiatives and on being an entrepreneurial mayor.

It was a group of civic entrepreneurs who brokered the initial meeting between Cisco and the mayor's office. "We socialized a little bit" with the city's local entrepreneurial network, Nathan recalled. It did not take long to secure a meeting with the mayor and the city manager. Their pitch was straightforward: Kansas City was the perfect "Goldilocks city" for a tech experiment—just the right size, with experienced leadership eager to work with tech companies and to use data analytics in municipal services. The mayor needed little convincing. "Within ten minutes of telling [Mayor James] our vision," Nathan said, the mayor told Cisco he wanted to "go on this journey" with them.³⁹ He believed Kansas City jumped at their initial offer because the mayor's office was eager to "get as much data as [they could] to make decisions about the city."⁴⁰

Following this enthusiastic interest was a three-day workshop, during which Cisco managers sat down with each department head in city hall, listening to their daily frustrations and challenges. Nathan made the point that these meetings "did not have to be around technology." Cisco, he said, mainly wanted to understand the city's struggles. Early on, water infrastructure emerged as a possible focus. Kansas City's aging network of water pipes had been deteriorating for years, and city officials were looking for a way to launch a comprehensive repair and replacement program. But the idea quickly fell through. According to Nathan, "the technology was not quite there."⁴¹ Cisco's solutions were still a work-in-progress, and city officials, as he put it, were "not brave enough" to jump into that trial.

Other options were floated and dismissed, but soon the focus shifted to a more practical target: the streetcar line set to run through downtown. Construction of the two-mile route had already begun. "As we were having those discussions," Nathan recounted, "the big elephant in the room was, well, we are tearing up the main street, and if we're going to do something to the infrastructure and take our first step, does it make sense to start here?" One of the

city officials involved in the streetcar project admitted that the local government at the time was not “exactly sure what [the smart city] was going to mean.”⁴² But they were already digging up Main Street and laying down tracks, so all they had to do was to “have an extra slab to add conduits that would allow for fiber connectivity.”⁴³ Cisco, Sprint, and the local government thus settled on planning the smart city pilot around the streetcar route. The letter of intent was signed in May 2014, and the City Council approved the project the following year.⁴⁴

Critical scholars of technology often argue that efforts such as the smart city elevate innovation for its own sake, turning the pursuit of the new into a kind of fetish.⁴⁵ Yet, as Kansas City’s smart city initiative illustrates, the boundaries between innovation and caring for the city through repair can blur together in complex ways. Cisco’s initial motivation was to capitalize on a breakdown in one sector (telecom) and transform it into a business opportunity in another (government). The mayor’s office, in turn, opted to use an ongoing project, the streetcar line, to introduce and test smart technologies. As one Cisco executive explained, “being practical” was at the heart of their planning: City officials and other stakeholders prioritized what could be done sooner over trying to invent something entirely new.⁴⁶

This layering of old and new infrastructures was not just a work-around. It is the smart city vision. Tearing up roads for routine maintenance? Lay down new fiber optic cables at the same time. Replacing aging water pipes? Add sensors to the new ones. City officials and tech companies are able to sidestep the charge that test-bed urbanism is just speculative novelty, because often these interventions are framed as commonsense upgrades. But for smart city enthusiasts, urban infrastructures are not just a public good; they are a latent asset. “Monetizing [municipal] assets” is at the core of the smart city, Nathan explained to me.⁴⁷ “Think about the buildings, parking lots, or streetlight poles,” he continued. “Our role is to help cities to get the most out of every single one of those assets.” The city’s existing erosions, decays, and routine maintenance become

strategic entry points to package acts of urban care with the promise of innovation.

I heard a similar explanation from civic entrepreneurs who liked to wave their iPhones as a shorthand to describe what a smart city is. Neglected roads, decaying water systems, or even vacant real estate are potential sites of value extraction if they are layered with data-collection technologies. Crumbling roads that need immediate repair, for example, could be augmented with sensor technologies, which are deemed essential for autonomous vehicles. Streetlights, which require regular maintenance, could become a site for 5G cell towers. For cities that grapple with slashed budgets and a declining workforce, this vision—one that sees caring for neglected urban environments as an opportunity for data capitalism—is very appealing.

An infrastructural fix-cum-innovation may be good enough to pique the interest of a local government, but these initiatives need people to invent practical, locally relevant uses for these work-in-progress systems. Tech companies seek intermediaries to guide them through the city and its aging infrastructures. They rely on local champions who can spot which parts of the city are ripe for their half-formed products. If the ideology of civic entrepreneurialism is caring for the city through the incentives of data capitalism, its praxis depends on the everyday ingenuity of entrepreneurial residents who see themselves as solving problems for the city.⁴⁸

LOCAL ENTREPRENEURS IN SEARCH OF PROBLEMS

I first met Brandon in 2015, not long after I moved to Kansas City. He was in his early thirties, a local entrepreneur, and well-known within the local startup scene. Born and raised in a Kansas City suburb, the son of upper-middle-class parents, Brandon had been drawn to programming from an early age. As a teenager, he built computers and designed websites for his parents' friends. "It was a

great way to make money, and I was the only one that knew how to do it around here,” he recalled with a proud glimmer in his eyes.⁴⁹ One semester before he was supposed to graduate from the University of Kansas, he jumped ship for a startup and later joined a tech incubator and a coworking space downtown.

Brandon was one of the civic entrepreneurs, a cohort of primarily young white men who positioned themselves as disruptors of the city’s status quo. They frequently complained about “the old white people,” who, in their view, ran the city with a frustrating inefficiency. They spoke passionately about the city’s enduring inequalities, especially the social and spatial divides caused by racism and poverty. Often invoking their youth, but rarely reflecting on their whiteness, they aspired to do things differently than the “old white people” did. If the “old Kansas City” represented everything cumbersome and stifling, civic entrepreneurs like Brandon would be the ones to “get stuff done.” They were, in general, not fans of government and politicians. “I despise politicians,” Brandon once said, “because they don’t get shit done.” And yet, he and his peers frequently participated in the local government’s public-facing initiatives or sat at the table with tech companies and city officials. He was in fact one of the civic entrepreneurs who brokered the first meeting between Cisco executives and city officials.

Brandon explained that he was motivated by a simple observation: Most cities in North America, he believed, were afraid to jump into a smart city project because they did not know how to pay for it. “We knew about the issues Cisco was having at the time,” he recounted, referring to the infrastructural upgrades the company needed to complete for Sprint. But rather than focus on money or logistics at the first meeting, he proposed “flipping” the pitch. When they met with the mayor, Brandon recalled, they started by saying, “We want to understand what the problems are across this city. We don’t care what solutions are. We just want to know what your problems are because if we know the problems, we can go find technology to solve that or build it.”⁵⁰ He believed that inviting the mayor’s office to

explore the city's problems, instead of trying to sell them on gadgets, did the trick.

A smart city, by definition, thrives on problems, be they invented or real. Alphabet's Sidewalk Labs once had a website that opened with a series of dire declarations: "Growing cities face many challenges. Longer commutes. Higher rents. Fewer opportunities."⁵¹ IBM offered a similar catalog for its smart city program—"the complexities of intergenerational poverty, aging populations, addiction, abuse, unemployment, homelessness, rising health care costs and tightened budgets have exceeded the capacity of existing programs"—before proceeding to explain how big data analytics could help grapple with these "entrenched social challenges."⁵² Tech companies intentionally magnify the complexity of local governance, a maze of overlapping crises too complex for traditional solutions. Smart technologies, the industry liked to claim, could parse out these knotty challenges.⁵³

Brandon's flipped pitch drew from a similar idea by asking the mayor's office to lay out their problems. As I discussed earlier, this first meeting led to a three-day workshop at city hall. Once the decision was made to turn the streetcar route into a "smart corridor" with multiple pilots, Brandon's incubator was added to the public-private partnership as a "living lab." The idea was to lure local entrepreneurs into identifying urban problems that had yet to manifest and harness their creative capacity to solve them.⁵⁴ In addition to boosting the civic engagement of local entrepreneurs in urban governance, the living lab was perceived to be a potential boon for the local economy.

Sociologist Sharon Zukin observes that New York City's older elites once took an active role in shaping civic life, whereas the city's emerging community of tech entrepreneurs remain largely disengaged from local politics.⁵⁵ Despite their visibility and the growing interest from municipal leaders, the tech entrepreneurs' ethos of individualism and self-reliance, she argues, keep them from becoming deeply involved in local governance. In Kansas City, civic entrepreneurs like Brandon shared the same drive to build a thriving tech

economy in their hometown, but unlike their counterparts on the East Coast, they framed their work as part of a larger civic mission. The smart city project, in particular, gave them a sense of purpose, one that seemed to transcend mere entrepreneurial success. Brandon described his perception of civic contributions changing from “We can start businesses and create these little apps” to “We could fundamentally affect and change a city.” “For me, it’s a much bigger calling,” he said once. “I like being a part of something that is much bigger than myself.”⁵⁶

Civic entrepreneurs quickly became the celebrated face of the smart city initiative, at least in its early stages. They also took on a new role within the pilot project: rediscovering the city’s problems. Armed with what they called a doer mentality, they sought out ways to harness the potential of smart technologies for their hometown. They organized events with city officials and entrepreneurs from across the Midwest called “Smart City Summit,” “Demo Day,” and the “Innovation Workshop.” These day-long gatherings, often held in coworking spaces or municipal conference rooms, focused on swapping ideas, showcasing best practices, and identifying the risks and challenges of smart governance.

Some sessions served as informal stages for local startups to pitch their work-in-progress products in front of an audience. Others were structured around “design thinking” exercises that encouraged participants to reimagine public transportation or public safety systems using sticky notes and colored markers on whiteboards.⁵⁷ The mood at these events was rarely skeptical. Instead, it hovered somewhere between ambition and abstraction, buoyed by the idea that smart technologies might generate new capacities. Between the presentations and group exercises, civic entrepreneurs were exposed to a rotating cast of possibilities in the smart city. Ideas floated freely, unburdened by implementation. Most events wrapped up with relaxed networking over barbecue and local beer.

Beneath this constant cycle of exploration and brainstorming, there was also too much uncertainty about what the smart city pilot

would actually look like. At a meeting in November 2015 held at Brandon's incubator space, civic entrepreneurs gathered to hear more about the so-called living lab, a core component of the smart city initiative. They came with practical questions: What kind of data would be available to them? What should they do to have access? What about privacy regulations that could limit the use of data? Simon, a senior entrepreneur, attempted to address these questions in his usual rapid-fire, buzzword-laden style:

We are trying to figure out what assets are in place on the city side. But we should be able to grab this data, and we have the ability to vet and put it out there after passing a number of checks so that the community could use it. I don't know how people are going to mash up data. To learn about driving economic growth in Kansas City or changing mobility patterns? But when we put the data out there, we will be able to understand that completely. So, we're going to have to kind of step back and see what happens. What I expect is that the community will come up with clever uses and ask a lot of questions. And through those conversations, and through meetings like this, we will guide each other about how to use the data.⁵⁸

In moments like this, the smart city sounded less like a strategy and more like an open-ended improvisation, its promise propped up by the sheer enthusiasm of those in the room. As one event led to another, civic entrepreneurs seemed to embrace process over outcome. Their work became more relationship-oriented: showing up, exchanging ideas, and promoting Kansas City's smart city pilot.

City officials eagerly supported these gatherings, often making appearances and delivering speeches that extolled the critical role of local entrepreneurs in the city's vision of becoming a smart city. Characterizing these events as participatory, collaborative, and tech-forward, they celebrated them as a new model of civic engagement. The living lab, designed to facilitate public-private collaboration, was repeatedly invoked as a proof point: a space where local entrepreneurs could access city data, work with municipal agencies, and test prototypes in real-world conditions. The goal, at least rhetorically,

was to expand the scope of the smart city pilot and recast it as a broader civic experiment.

Even as civic entrepreneurs boasted about their doer mentality, these events rarely produced tangible results. At best, those who attended would showcase prototypes or “best practices” to an audience of funders and city officials. More often, they sat back, listening to city officials, hoping that something from those sessions would spark a creative idea. Some became more involved in local governance, joining federal grant-writing projects with the mayor’s office or partnering with the innovation office to test prototypes inside city agencies. Others, despite their aversion to politics and government, continued to show up, seeking not just collaboration or investment but, at times, a sense of purpose in the city’s evolving experiment.

CONCLUSION

When I first arrived in Kansas City, what surprised me most was how clearly both city officials and enthusiastic residents noted that the smart city was not a cure-all for their problems. Sure, there was genuine excitement about setting up a pilot downtown, but they repeatedly declared that the “social piece” mattered just as much as the technology. The smart city was more than sensors and data, they insisted. There was a collective embrace of the hype and hope around smartness, but not simply in the technical. This narrative contradicted the techno-solutionist view I had anticipated.⁵⁹ It revealed a more locally grounded story of ambition, constraint, and negotiation.

This chapter has shown that Kansas City’s smart city pilot was driven by a group of local actors, including entrepreneurs, city officials, and nonprofit leaders, eager to rediscover their hometown’s problems as opportunities for innovation. Young entrepreneurs saw the city’s crumbling infrastructures and underresourced municipal services as raw material for the next big startup. City officials welcomed the so-called innovative approaches and partnerships with

3 The Ignorant City

After trekking up the spiral stairs of Sprint Accelerator I walked through a long hall whose walls were adorned with black-and-white photos that highlighted key moments in Kansas City's telecom history. In tech parlance, an "accelerator" refers to short-term programs intended to jump-start new businesses with funding, contacts, and mentors in exchange for a certain amount of share in the startup. Sprint, then a Kansas City-based telecom company, started its own accelerator program in late 2013 to provide a workspace for aspiring entrepreneurs. Inside a renovated ice-storage building in the heart of the city's once-gritty Crossroads Arts District, there was now a coworking space for local entrepreneurs. Those who joined Sprint's accelerator program, and others who planned to, frequented this space to make connections and seek investment opportunities.

When I walked into the room for the "Smart City Kick-Off Workshop," I found myself facing a sea of long white desks, which sharply contrasted with the bright Sprint-yellow walls.¹ The event's title was projected prominently on the screen as two facilitators set up their

presentations and attendees swarmed the kitchen for coffee. We were three months away from the launch of the smart city pilot. The mayor's office and a civic group specializing in digital inclusion organized this workshop to discuss the city's anticipated transformation. Inside the room were a few dozen civic entrepreneurs, community organizers, academics, city officials, and residents who were either invited or signed up to receive updates about the smart city.

Our facilitators, one hailing from MIT Media Lab and another from Brooklyn Law School, took the stage to introduce the discussion topics: public safety, entrepreneurship, regionalism, education, and mobility. The smart city had the potential to disrupt all of these areas, they pointed out. Our goal was to conjure ideas to kick-start these disruptions. The facilitators instructed us to break into five groups, each responsible for tackling one of these areas in rotation. They then gave us three tasks: First, identify a particular problem in our designated area; second, "describe to grandma and grandpa" why this was a significant problem; and finally, develop a "prototype" to be quickly tested as a solution. As we dispersed to begin our small-group work, the facilitators left us with a piece of advice: "You need to be good storytellers," they stressed, "to come up with compelling ways to redesign the city." The whole setup reminded me of pitch meetings for brand-new startups.

Circled around the white desks, our laptops aglow with shared Google Slides, we settled upon "mobility" as our first topic of discussion. Following a round of introductions, our predominantly white group revealed itself as a collection of residents from the parts of the city where cars reigned supreme. Several of us were still familiar with the city's inadequate public transit though. A male tech entrepreneur recalled a collaboration with a community organization devoted to hosting coding camps "for underprivileged kids." "The big problem we discovered," he recounted, "is that those kids have no way to get to those classes." A young woman in the group got very excited about this connection between economic and physical mobility, "I'm so glad you brought this up," she exclaimed. "Let's go

there!” The entrepreneur proceeded with his story. In their quest to remedy the problem, the organization bought bus passes for the children from the local transit authority. But this well-intentioned plan faltered when bus drivers refused entry to the kids, suspecting their passes were not valid. A collective sigh of frustration rose from the group as we united against this unwarranted bias and settled on our pick for the first task: How to improve public transportation for people on the east side of Kansas City?

Many in the group found it relatively straightforward to explain, as though they were speaking to their grandparents, why this issue was important. Even those who resided in the suburbs could easily recognize that the city’s infrastructure was ill suited for public transportation. “We must build some ‘on ramps’ into the pipeline to keep the city going and thriving,” someone wrote on the shared Google document. “We need to reach all members of our community,” another noted in agreement. Then there was a pause for the next item was more challenging: How could we prototype a solution to this problem?

As a PhD student without a car, and the sole member of the group dependent on public transit, I decided to chime in. I began by sharing my struggles when traveling from east to west or shuttling between urban and suburban neighborhoods. I then suggested an idea for a solution: “Shall we talk about how to test expanding bus routes, extending hours, and maybe offering some free-ride programs?” My proposal was met with an unusual silence, which contrasted with the previous lively chatter and the fervor for improving public transit on the east side. I scanned the group, hoping to receive any reaction. But they continued staring at me with blank expressions. Though the silence likely spanned no more than ten seconds, it felt interminably awkward. Insecurity crept in and I wondered whether they struggled with my foreign accent and had not understood me.

Finally, the male entrepreneur who had sparked the initial discussion interjected, “Maybe we should prototype autonomous vehicles that could replace those inefficient buses on the east side.” Many

heads nodded vigorously, and faces lit up with excitement in response to this new idea. People leaned forward, eager to dive into a conversation about forging a “mobile corridor” of driverless cars in the city. “These driverless cars in public transit must offer free Wi-Fi to kids on the east side,” one participant chimed in while another exclaimed, “And definitely interactive tablets!” As some hurriedly jotted down these ideas, we noticed time was running out. The group could not discuss how this network of driverless cars (or driverless buses?) would connect with the rest of the city or whether they would complement or replace the existing routes. As the facilitators brought the first brainstorming session to a close, most in the group were pleased with our preliminary plan for a new kind of public transit, which offered extra facilities to connect young people on the east side.

How did a group of longtime Kansas City residents, having named a clear problem, land on a solution few of us even understood? Was it the “smart city” from the workshop’s title that subtly predetermined our menu of options? Was it because we were asked to prototype, which conjured a specific way of problem-solving? Or was it simply the persuasive sway of the tech entrepreneur who steered our conversation down a particular path? In any case, it was puzzling to me that we spent much of the session discussing autonomous vehicles despite knowing little about them or how they might actually fit into the city’s transit system. No one, moreover, questioned their inevitability. And no one cited examples of success or failure.

What I witnessed at the workshop was emblematic of a broader pattern. Uncertainty and ambiguity abound when launching unfinished hardware or software at scale. The sheer complexity of a pilot project makes it highly difficult for every party to track all the moving parts. Everyone operates with limited knowledge in the emerging smart city, including tech companies launching incomplete systems, city officials lacking technical expertise, and residents unable to grasp every detail. Even the machines are designed to process data without understanding context or consequence. Yet these knowledge gaps are rarely considered risks. On the contrary, most stakeholders

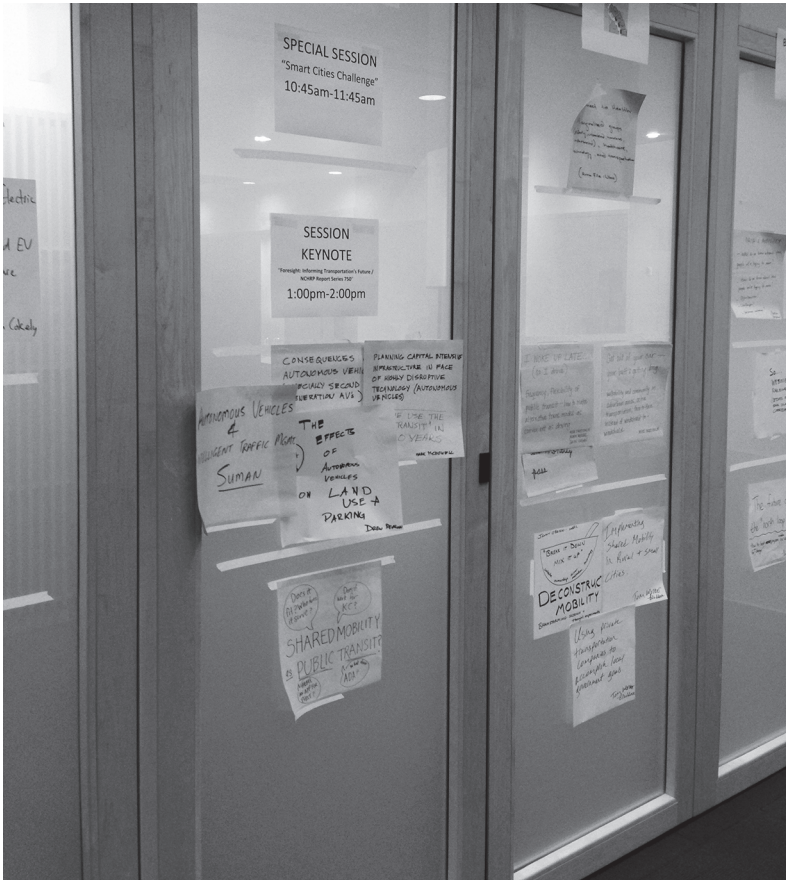


Figure 3. View from a design workshop on smart cities. Photo by author.

accept and sometimes even celebrate the deep unknowability of becoming a smart city.

This chapter examines the varieties of non-knowing and, in some cases, even unknowing that underline test-bed urbanism. If smartness implies “perpetual learning,” as Orit Halpern, Robert Mitchell, and Bernard Geoghegan suggest, for smart city enthusiasts, it also means embracing perpetual not-knowing.² My goal is to catalog

distinct states of knowledge (or lack thereof) in smartness. I will therefore use terms such as non-knowledge and unknowing to clarify different levels of understanding among smart city enthusiasts. Non-knowledge refers to actual gaps in knowledge that occur wittingly or unwittingly. Unknowing, or deliberate ignorance, as I will introduce later in the chapter, refers to (1) the way smart city enthusiasts embrace their ignorance regarding smart cities and (2) how, as a creative strategy, they can purposefully ignore what they already know. While I use the overarching term “ignorance” to describe different ways of not-knowing, I do not intend it to be pejorative or suggest that it always assumes an artful intent or strategic use.³ Nor do I aim to offer an exposé of smart city pilots by revealing how inadequately informed its stakeholders are.

The following pages show that city officials, tech companies, and civic entrepreneurs do not just acknowledge their scant knowledge, but they also boldly embrace it. Throughout these diverse practices of non-knowledge and unknowing, this chapter demonstrates how ignorance becomes productive in test-bed urbanism. Following Eve Sedgwick’s call to dispel ignorance as a fixed state pitted against facts and knowledge, I argue that cities’ efforts to acquire more knowledge via smartness often lead to a cycle of obscure understandings and intentional unknowing.⁴ Smart city enthusiasts—city officials, civic entrepreneurs, community groups, and tech companies—use ignorance not just to legitimate their techno-political interventions but also to obfuscate power imbalances among them.⁵

KNOWLEDGE VOIDS IN THE SMART CITY

Throughout my three years of fieldwork, I frequently encountered situations in which city officials appeared to be talking past each other, evading critical questions, or openly admitting their lack of expertise in certain areas. Also common was a noticeable reluctance among tech companies to share information with each other. These

firms either did not view themselves as genuine partners in the pilot or consistently remembered that they were, in fact, competitors. On some occasions, I even witnessed these companies withholding information from their municipal partners, whether knowingly or unknowingly. Knowledge gaps, or non-knowledge, in the making of a smart city were not merely incidental, but a central feature.

A repeated example of non-knowledge within the pilot revolved around Cisco's flagship product, which went through many different names over the course of its life cycle. The last iteration was called "Kinetic for Cities."⁶ Among the Kansas City cohort, however, it was referred to as "CDP," short for Connected Digital Platform. Cisco hailed CDP as a digital platform for harvesting data from diverse city systems and services and merging them into "a consistent and user-friendly format."⁷ Built atop a cloud infrastructure, CDP promised to aggregate the city's various datasets while "normalizing" them.

Normalization, a key step in data science, is a processing technique that scales different features and variables to a common range, thereby enabling all to contribute equally to machine learning processes. Imagine a smart city program that tracks real-time traffic data from various sensors located throughout the city. These sensors may collect information on traffic flows, congestion levels, or vehicle speeds, often with varying levels of accuracy or granularity. Normalization allows for the conversion of data from different units or forms into a consistent format, aligning them across various sources, identifying and rectifying inconsistencies or errors, and harmonizing different data to a common reference point.

This technical virtuosity of aggregation and normalization was CDP's strong suit. However, these techniques served merely as prologue. The mayor's office still needed to build analytical tools on top of the platform to dig insights out of the collected data. CDP provided basic reporting of numbers such as energy use on streetlights or the number of cars in traffic, but it did not generate insights that could prescribe how to manage streetlights or traffic operations. Either a team at city hall or another tech firm had to step in to build a

model, make decisions about relevant features, and train and review the model before starting to make so-called data-driven decisions.

For about a year leading up to the launch of the pilot, however, there was a noticeable misunderstanding among the stakeholders regarding the capacities of CDP (or even what it was). Many people at city hall spoke as though Cisco's platform included data analytics. My early field notes echoed what I heard from city officials and even some of the civic entrepreneurs who implied in our conversations that CDP would be the main resource for analytical insight. City officials struggled to describe this "platform which you cannot see" but seemed sure that it was going to offer deep insights. When I tried to consult Cisco's documents to find out more about CDP, I found them dense with technical jargon and far from user-friendly.⁸

A few months into my fieldwork, I finally confirmed that there was a collective misunderstanding about CDP. I also noted that it created recurrent, if mostly quiet and behind-the-scenes, tension among some of the stakeholders. For instance, I raised this misperception about CDP with a Cisco executive in our interview and he immediately got irritated. He launched into a rant about repeatedly reminding city officials that Cisco's product would not deliver complex data insights. "I remember sitting with [city officials] on several occasions saying, 'I need to be clear, we don't do analytics,'" he explained, "because [they] wanted to talk about it all the time and referred to CDP doing it."⁹ He recalled that it was only in April 2016, a month before the launch of the pilot, that "everything started clicking" and city officials stopped characterizing CDP as the main instrument for data analytics. Post-launch, they were careful to call it a "storage tool and basic analysis platform for raw data."¹⁰

Midway through our conversation, the Cisco executive's frustration gave way to a more sympathetic tone. "Maybe there was a miscommunication," he admitted, "because the underlying reason the mayor's office was so in from the get-go was around data." But this miscommunication was not simply a case of the mayor's office projecting wishful thinking upon a new platform. Nor was this lack

of understanding limited to CDP. City officials, civic entrepreneurs, residents, and even some tech partners were routinely confused about different aspects of the smart city pilot.

During a semipublic meeting at the University of Missouri-Kansas City in November 2016, law students peppered city officials and tech executives with questions about data governance in the smart city pilot.¹¹ A different senior Cisco executive calling in from the East Coast hesitated and stammered in response to queries such as “Where is the data cloud for the smart streetlights based?” or “Will the city’s open data portal be integrated with CDP?” She deferred to other stakeholders, who, she suggested, were the primary contacts for most of the questions raised by students. These other stakeholders were conspicuously absent from the meeting. Occasionally, she admitted that the project team had not yet discussed some issues, including the recurring question of how long the data collected during the pilot would be stored in CDP.

I noticed that whenever the Cisco executive could not answer a specific question, she deflected by reminding everyone that this was a pilot project. “We are rolling out the opportunity to collect data and collaborating and growing what that data looks like and how it will be relevant,” she suggested, for instance. “Once we determine what’s important and what we need to keep, then the policies can be determined. It’s a work in progress.” This pattern of deflection, which prioritized releasing incomplete systems in the present while hinting at the promise of learning and acting in the future, was also common among some city officials. I recall that at one of the early smart city advisory board meetings, in late 2015, a department head asked the staff from the office of innovation if they could share a comprehensive list of all the data they planned to collect in the pilot. With an exasperated expression, the staff member grumbled that they were asking Cisco about such a list “almost every day.”¹² They then pivoted and said, “[Cisco is] really focused on building [the smart city] right now.” Once the building part was complete, they implied, the company would share the list.

City officials' incomplete knowledge of the ins and outs of the smart city pilot was partly due to their limited proficiency in computing. When the mayor's office was toiling on a federal grant application on smart traffic, for example, a staff member incorrectly wrote that "smart streetlights emit Wi-Fi" in the pilot. It was a telling confusion because both smart streetlights and public Wi-Fi were part of the pilot, but they were distinct systems managed by different companies. The mistake was not personal. In fact, I repeatedly observed that there was always something technical or legal missing in how various stakeholders understood the pilot's infrastructure.

I began to see the circulation of partial or inaccurate information among city officials and civic entrepreneurs as a kind of infrastructural rumor. These snippets of (misinterpreted or incomplete) information were shared in an effort to make sense of a project they were never fully authorized to see in totality. Scholars who study rumor frame it as a kind of subaltern knowledge or as "articulations of the racial hierarchies of exploitation and mistrust" engendered by colonial bureaucracies or corporations.¹³ While I do not equate municipal governments with subaltern actors, the analogy helps clarify how uneven access to information structured the smart city pilot. Tech companies held sway over information access. The capacity of city officials and other stakeholders to grasp the project's scope and details relied on what these firms disclosed. In theory, the local government had the final authority concerning the use of smart city data, but in practice, the city was beholden to the whims of these companies. Their partial access led city officials to openly acknowledge what they did not know or to repeat the same handful of details over and over, filling in the gaps as best they could.

Not long after the pilot launched, for instance, the much-touted smart streetlights suffered a recurring malfunction. The LED lights, adorned with sensors designed to collect and report data, were not working consistently. The sensor-generated data could not be integrated into CDP, and the startup that supplied the sensors was unresponsive. Months passed with no resolution. The startup would go

on to be acquired by Verizon, who praised the firm in a press release as “a leading provider of internet of things solutions,” all while the mayor’s office continued waiting for the sensors to be fixed.¹⁴ A senior city official, the designated contact for this elusive startup, offered diplomatic reassurances in public meetings and explained that the company was merely “fine-tuning” the sensors. In internal conversations, his frustration was more obvious. He lamented that the sensors were not doing what they had hoped, despite being very expensive.

The local telecom partner responsible for providing public Wi-Fi was also very slow and inconsistent in sharing data with CDP. At one point, city officials received partial information in PDF format, which was too unwieldy to be integrated into any analytics program. Frustration mounted among other city stakeholders, who suspected that the telecom company was deliberately withholding the data. Public Wi-Fi metrics provided insight into the internet use of residents as well as the flow of downtown foot traffic. Many believed this commercial value explained the company’s reluctance to share. Meanwhile, data collected from the digital kiosks remained up in the air as well. Neither Cisco nor other stakeholders knew when (or whether) they would have access to this piece of the smart city.

These voids in knowledge, in addition to being a source of vexation among the stakeholders, were also visible in public meetings. When inquisitive residents sought updates on the pilot, city officials often found themselves in a predicament. They were to either admit their inability to pull information from elusive tech partners or employ equivocation to mask their ignorance. In private, city officials occasionally opined that the residents might not fully grasp the complexities involved in becoming a smart city. Kansas Citians, they implied, did not “know what they were asking for.” But an equal measure of frustration stemmed from city officials’ own inability to offer straightforward answers.

Ignorance endured as a hallmark of the smart city pilot, whether it was constructed by uncooperative tech companies or was merely a byproduct of temperamental software or hardware. This particular

form of non-knowledge, which constituted witting or unwitting knowledge gaps, occasionally caused tension. But most of the time, that tension remained offstage or was absorbed into a tacit consensus that having only fragments of information was simply how things worked. Next I turn to another form of ignorance in the pilot, one that turned into a civic performance and a deliberate creative strategy in planning the future smart city.

THE EXUBERANCE OF “WE DON’T KNOW WHAT WE DON’T KNOW”

One of the local news stories announcing Kansas City’s partnership with Cisco and Sprint mentioned how the mayor and the city manager boasted about the efficiency improvements anticipated as a result of the smart city pilot. But the story also noted that “no concrete estimates have been made on how much the city will save.”¹⁵ Kansas City had yet to establish a “defined blueprint.” Next, the article quoted then-Mayor Sly James, who said, “The city is blazing a new trail, so it doesn’t want to limit the possibilities of the project.”¹⁶ This refusal to constrain the project with clear metrics or concrete goals was not a strategy for hiding uncertainties about the pilot. It instead hinted at a civic performance, which embraced ambiguity as a sign of innovation.

In the yearlong construction phase leading up to the pilot’s launch, stakeholders met regularly to review logistical updates but rarely discussed what would happen once the technology went live. Nor did they explicitly address how to incorporate this new urban intelligence into policymaking. Yet the absence of a clear roadmap did not raise alarm. On the contrary, many city officials often appeared energized by the ambiguity, echoing the mayor’s commentary about embracing the unknown. When I asked the city’s communications director about what the local government aimed to achieve with the smart city pilot, he replied, “We don’t know what it’s going

to produce, but that's the exciting part!"¹⁷ He continued, "You can change so many things about what we do for service delivery. And we don't even know what some of that is." Rather than tempering civic excitement, the prevailing sense of uncertainty and the gaps in knowledge seemed to amplify it.

Take my chat with Brandon, the civic entrepreneur I introduced in the previous chapter, the one who helped broker the deal between Cisco and city hall. He and I were grabbing coffee between sessions of the May 2016 Gigabit City Summit, organized by some of Kansas City's civic entrepreneurs.¹⁸ The summit hosted representatives from more than seventy cities, including city officials, nonprofit professionals, and entrepreneurs. Brandon was frustrated that many attendees, especially those from municipal governments, were fixated on asking questions about the exact benefits of launching a smart city program. "[Those cities] have not been able to pull back the curtains and see that actually nobody really knows," he said.¹⁹ Then he proudly declared, "I literally have no idea what I'm doing. I can confidently say that I don't. But I know that not many other people do what I'm doing. And I'm in a place to seize opportunities and learn from them." After a brief pause, he concluded with, "All we have to do [as a city] is to say yes. That's it."

It may be easier for Brandon to embrace the unknown as he spends most of his time around entrepreneurs. For the entrepreneurial community and tech companies, the inherent uncertainty of a smart city pilot was accepted as a routine part of innovation. A Cisco executive, for instance, suggested that they "always described [the pilot in Kansas City] as 'We're kind of being Indiana Jones and going through the jungle.'"²⁰ He characterized the company's collaboration with cities in general as a journey. "To me, a journey is we don't know exactly what we're going to find," he explained. "We're going to head down this road, and we'll cross bridges when we get there." This adaptable and pragmatic approach to problem-solving and a willingness to accept failure is more common in tech circles where the mantra "fail again, fail better" is widely embraced.

A municipality is no startup, but Kansas City officials spoke with similar exuberance about what they did not know. Rather than trying to conceal their ignorance, they leaned into it. This performative and selective celebration of not-knowing served a strategic purpose: to mirror the confidence of Silicon Valley companies and to position the city as an attractive site for innovation.²¹ Framing the partnerships as a living lab, a pilot, or a test bed helped soften expectations and defer accountability. It signaled that the smart city initiative was not just about testing incomplete hardware or software. It was a quest for something spectacular that remained hidden in the city's data and discoverable only through continuous experimentation.

City officials in Kansas City took comfort in knowing that they were not the only ones venturing into the unknown by partnering with tech companies. Many collaborative experiments in test-bed urbanism occurred without fully understanding what was happening or what the ultimate outcome would be. Recall Kansas City's prior experience with Google Fiber, which was also shrouded in uncertainty from the start. Rather than being a mere contingency or unintended consequence, ignorance is an ongoing part of contemporary public-private partnerships.²² More than that, ignorance is celebrated in test-bed urbanism, whether it takes the form of knowledge gaps about work-in-progress sensors or of the enthusiastic embrace of uncertainty.

Such celebration of ignorance subtly, yet profoundly, led to an act of unknowing. As Donna Haraway suggests, "myth and tool mutually constitute each other" over time.²³ In Kansas City's smart city project, ignorance became both a discursive frame and a planning method. One example was the aforementioned smart city workshop in which participants cast aside ideas about improving the city's public bus system to focus on driverless cars. The following section introduces what I call deliberate ignorance, which describes how city officials and civic entrepreneurs pushed aside what they already knew, believing that this intentional suspension of knowledge might lead to breakthroughs in addressing long-standing issues.²⁴

CREATING THE BLANK SLATE

In the spring of 2016, a couple weeks after the smart city pilot launch in Kansas City, I met with Brandon again. We were at a coworking space downtown, mainly to catch up about the state of the pilot now that the construction phase was complete. I knew he was excited about not knowing what to expect from the smart city pilot, but still I had to ask him what the city could do with this project in the medium- or long-term. “For me, a smart city is,” Brandon began, then paused to pick up his iPhone from the desk. He waved it in the air, a gesture I had seen him do several times in local meetings whenever he wanted to describe the smart city. “I think about the city much like this thing,” he said.

First you have to make the smart phone, and that’s what we are doing now. We’re deploying sensors, you gotta create the hardware first . . . All this stuff is necessary so that we can then start collecting data. Now you have sensors and connectivity, Wi-Fi and all that. It’s like a utility. Then data is a new utility as well. Comes from that connectivity. Now that we have these city services basically that’s turned the city into a smart phone, we’ve got the connectivity, we’ve got the sensors that are collecting the data, how do we open it up? How do we flip it? That gives people the ability to create new solutions—which is the step two—now that we have some of those things, how do we extend it? Do we put out a better phone? Better camera sensor? Maybe we’ll use Snapchat and can do virtual reality, once we have better cameras in the platform, we’re able to do all these other things. Let’s put sensors on water pipes or intersections and now what can we do? That’s where the second phase comes in. What are the solutions? What are the applications that can be built on top of them? And then it is the third phase which truly gets into the social impact of it. Now that we’re doing all these things, now that the city is kind of upgradable, what’s next?²⁵

Brandon’s lengthy explanation of the three steps toward a smart city—moving from constructing the infrastructure to gathering data and then witnessing some kind of impact—is important. His priority was to facilitate smooth data collection and expand the network of

smart technologies. And he was careful not to name any specific local problems that might be solved. This was, again, very common among smart city enthusiasts. City officials and civic entrepreneurs often refrained from pre-matching the city's existing issues, regardless of scale, with the capabilities of cameras or sensors at hand. That was not just a timid tactic of avoidance or delay. For the project's stakeholders and enthusiasts, setting aside what they already knew about the city and its problems was a deliberate strategy to unlock what they considered to be the creative potential of the smart city.

In the lead-up to the launch of the smart city pilot, I repeatedly heard from stakeholders about their eagerness to uncover the issues plaguing their hometown. I kept wondering: Do they not already know Kansas City's problems? I remember a gathering in February 2016 with Brandon and two of his colleagues where they reiterated that the *raison d'être* of a smart city was to search for problems.²⁶ I asked them if they didn't already know what the problems were, and Brandon's business partner, Simon, jumped in to say that people need to better understand what they already know. "Everybody complains about parking," he continued, "but what is it that they complain about? Are they complaining about the fact that their big cars don't fit the size of existing parking spaces? Are they complaining about the time it takes to come downtown and park their cars? Are they complaining about the ways they pay for parking?" After a brief pause, he summed up, "How can we look at these problems differently? Like, smart problems, you know?" His eyes lit up with excitement as if he had had an epiphany right there. "I'd never thought about it that way before," he said. "The smart city does need smart problems!"

Many smart city pilots, like the one in Kansas City, unfold not on blank slates but within cities already shaped by political priorities, historical inequalities, and legacy infrastructures.²⁷ And yet, civic entrepreneurs and local officials approach these initiatives as if the city's problems still need to be discovered. Simon's suggestion that Kansas City needed "smart problems" is one example. Just like

Silicon Valley executives, fascinated by the idea of building a city from scratch, civic entrepreneurs and city officials make a persistent effort to see their hometown in a new light. This impulse to rediscover what is already known turns the city into a space where even long-standing complaints about parking, traffic, or infrastructure must be made strange before they can be made smart.

The appetite for identifying new problems, while putting the obvious on the backburner, also comes from a particular mindset often popularized by Silicon Valley. Called “first principles thinking,” it is an approach to problem-solving that encourages breaking complex issues down to their most basic elements, unburdened by assumptions, analogies, or historical context. The term originally comes from the field of physics, but in tech circles, first principles thinking is used as a creative strategy. By disregarding conventional explanations or tried-and-true remedies, tech entrepreneurs believe they open up space for radically new ideas. But in practice, this method often entails putting aside the underlying causes of systemic problems in favor of abstract reframing.

Google cofounder Larry Page invoked first principles thinking in his introduction to the company’s smart city initiative Sidewalk Labs. “It helps to start from first principles and get a big-picture view of the many factors that affect city life,” he said, in response to complicated urban challenges.²⁸ Rohit Aggarwala, former policy director of Sidewalk Labs, echoed this idea, praising technologists for problem-solving that centers on “essentials rather than on existing practice.”²⁹ Elon Musk, another prominent advocate, commends first principles thinking as a way to “boil things down to their fundamental truths and reason up from there, as opposed to reasoning by analogy.”³⁰ In this view, the pursuit of new ideas begins by discarding old knowledge. Historical understanding, lived expertise, and existing institutional practices are seen not as assets, but as obstacles.³¹

But it is also exactly this kind of simplistic thinking that causes Silicon Valley entrepreneurs to unveil with fanfare what they claim

to be a great novelty, only to realize that they have done nothing more than reinvent a mundane service. Take the example of a “commuter shuttle service” launched a few years ago by a ride-sharing firm, which was rightly mocked on social media for simply reinventing a bus. In addition to the industry’s fixation on novelty and fascination with the “charisma” of machines, their commitment to refusing to engage with what they consider to be the “baggage” of existing knowledge disconnects them and their products from reality.³²

Kansas City is not Silicon Valley. But civic entrepreneurs and city officials were enamored by a similar approach even though they did not directly frame it as pursuing a first principles strategy. Following his epiphany about “smart problems,” Simon gave another example. “Take public health,” he suggested. Merely reducing paperwork by using smart technologies would be too easy. He was instead keen on exploring “the different types of people or conditions” so that they could uncover less obvious connections across distinct issues. What struck my ears as verbal confetti got Brandon very excited. He enthusiastically agreed with Simon’s comment and suggested that as a programmer, the smart city pilot allowed him to see “the different parts of the city” with which he could play. To illustrate his point, he grabbed the candy jar nearby, scattered the mini candy bars inside on the desk, and exclaimed, “That’s what races my brain!” In this playful gesture, Brandon was treating the city like a system of modular parts: scattered, sorted, and recombined at will. This was first principles thinking in action. The deliberate dismantling of the familiar to invent smart problems.

On another occasion, a senior city official described their greatest challenge in the smart city project as figuring out what kind of problems to prioritize while “not going with the obvious thing.”³³ They commended the pilot for its promise to “see things in a different way” and to explore what they deemed an “unconventional” approach in local governance. Deliberately suppressing existing knowledge, setting aside prevailing conventions, and chasing after

the nonobvious was not just a rhetorical flourish or an attempt at obfuscating knowledge.³⁴ In addition to encouraging each other to adopt this mindset in planning the future smart city, city officials and civic entrepreneurs genuinely believed they were fostering a culture of creativity and exploration among themselves.

Rather than a politically motivated production of ambiguity, the smart city enthusiasts in Kansas City used deliberate ignorance as a means of discovery so that they could view the city's problems in a different light. Their naïve commitment to the nonobvious resembles the "hopeful ignorance" that Wendy Chun describes as having been a popular belief among technologists in the 1990s.³⁵ Those technologists believed that ignoring differences would overcome discrimination. In Kansas City, civic entrepreneurs and public officials similarly hoped that by breaking problems like mobility inequities or neighborhood disinvestment into abstract components, new solutions might emerge. But that required suspending what they already knew, at least temporarily.

Smart city enthusiasts did not place their hopes on autonomous vehicles or data analytics out of pure techno-utopianism. Nor did they ignore the communities that had long been excluded, or, in some cases, erased, by previous waves of urban development. On the contrary, these enduring inequalities always loomed over their plans. But clearing the slate, materially as well as strategically, required disregarding those facts for a while, at least until smart technologies could be framed as solutions. The pilot became a way to suspend, rather than confront, the structural roots of inequalities, such as the legacies of racial and class segregation, car-dependent urban planning, and hollowed-out public funds. They found it hard to deal with the complexity of this background, whereas starting from scratch, they believed, might open up an avenue that they did not consider before. Plus, this new strategy promised something more tangible, the chance to profit from the pursuit of these so-called smart problems.

THE PRIVILEGE OF IGNORANCE

In its most aspirational form, a smart city is imagined as a hyperintelligent urban environment where residents and their digital devices continuously generate real-time data, and decision-makers use the data to respond instantly and anticipate future problems. In contrast to this know-it-all city, however, ignorance is embedded in the design and implementation of smart city pilots. City officials and civic entrepreneurs often lack key knowledge about these large-scale projects. At times, they even suppress information and ideas that they deem traditional and commonplace. Most importantly, this ignorance is unequally distributed across the city.

As previously discussed, the stakeholders had varying levels of information about the pilot's progress. Tech companies typically knew more than city officials or civic entrepreneurs and sometimes withheld updates from others. While there was no explicit gatekeeping to exclude residents, the lack of a dedicated effort to invite and recruit a diverse group meant that participation often depended on time, resources, and proximity to existing stakeholders. In short, knowing enough about the smart city pilot was a sign of privilege. But so, paradoxically, was performing deliberate ignorance.

The vignette at the start of this chapter illustrates more than just a preference for novelty or an aversion to obvious solutions. It is also an example of intentionally and collectively suspending what people already know or, more precisely, assume they know. While smart city enthusiasts appeared to grapple with thorny problems in a creative way, they also avoided having harder conversations about structural issues. The shared enthusiasm to begin with a "clean slate" in a design workshop or nerd out over smart problems assumed that further understanding of racism, poverty, or disinvestment was unnecessary. In effect, many city officials and civic entrepreneurs believed they already knew enough about the city's history and present. But that knowledge was either bracketed or ignored as outdated, overly familiar, or unproductive. With its ostensibly new

ways of discovering, the smart city, its advocates believed, could identify fixable problems by reframing what they already assumed they knew.

The seemingly playful act of “not needing to know” (or what I called deliberate ignorance) reflected the smart city enthusiasts’ lack of experience with racism, poverty, and dependence on public welfare. But it also benefitted from the disavowal of these inequities.³⁶ The search for “smart problems” obscured how much city officials and civic entrepreneurs, who were predominantly white, male, and middle-class, actually knew about the problems they professed to fix. Sure, they recognized that the city was “divided,” that public infrastructure was flailing, and that political will for public investment was scarce. But beyond that, there was little effort to understand the lived experiences of the communities targeted by the pilot. This collective posture of deliberate ignorance ultimately intended to generate capital and provide the affective pleasure of discovering problems that were, in many ways, already known.

Scholars such as Jessie Daniels and Safiya Noble have powerfully critiqued the myth of color-blindness in Silicon Valley’s tech culture and have shown how it hampers discussions about race and racism in the design of digital technologies.³⁷ In Kansas City’s smart city pilot, a similar dynamic was at play but with a twist. It was the superficial recognition and assumed knowledge about racism or poverty that foreclosed the possibilities of further discussions. Echoing the critiques of Daniels and Noble, deliberate ignorance operated through the promise of working with computational tools and techniques. Smart city enthusiasts were more keen to embrace the excitement of uncovering novel insights than they were to rely on established knowledge or conventional approaches to problem-solving. Their celebration of the unknown and deliberate acts of unknowing conferred an aura of legitimacy on the project. The desire to conjure a clean slate and search for smart problems also afforded a kind of political and epistemic cover against deeper scrutiny or (unintended) harm.

CONCLUSION

The epistemological vagaries of the smart city pilot, from the unequal distribution of information to the celebration of ignorance and deliberate unknowing, contributed to the advancement of the smart city agenda throughout the city. In both internal meetings and public celebrations, a particular mode of problematization emerged, one that intentionally stripped away context. The assumption that smart city enthusiasts were already familiar with urban challenges became a convenient excuse to reframe them as hypothetical discoveries, presumed to emerge through the accumulation of data. Coupled with the framing of a test bed and the ideals of civic entrepreneurialism, this pervasive ignorance legitimized, in various ways, a project that was inherently uncertain and largely unknown.

The next chapters turn to what happened next. After the smart city pilot and associated projects were launched, it became clear that smartness was experienced very differently across the city. From the neighborhoods that were at the receiving end of these smart interventions (chapter 4) to the municipal offices that had trouble proving the worth of the pilot once it was up and running (chapter 5) to the overall group of smart city stakeholders who debated whether the pilot was a success long after it was quietly put aside (chapter 6), city officials, residents, and civic entrepreneurs variously reshaped and contested what it meant to be a smart city.

techies, as the city's budget was stretched thin and the political appetite for long-term solutions waned.

Civic entrepreneurialism, I argue, names this alignment between personal ambition, public service, and speculative possibility. Rather than expecting sensors and data analytics to solve their problems magically, city officials and local entrepreneurs saw their entrepreneurial drive as the linchpin of the emerging smart city. The pilot program gave the encouraging impression that the city and its issues might become sources of new business. Potholes, bus routes, or outdated zoning codes were soon reframed as "pain points," in the language of venture capital, markers of inefficiency that could be solved and optimized.

Over time, local entrepreneurs believed that merely showing up at coworking events, adopting the language of innovation, or performing entrepreneurial identity in city meetings was a service to Kansas City. Along with the city government's repeated pronouncements, they felt hopeful about turning Kansas City into a regional hub of innovation. They became invested in mining the city's existing spatial and social divides to identify problems that could be resolved by tapping into the potential of smart technologies.

Public conversations about the smart city's vague aspirations to fix those divides were rhetorically pleasant and politically safe. The façade of the smart city promised opportunity, and, if everything went well, maybe even equity. But other than tacking the project onto a sure-fire new streetcar line, there was not much clarity about what the city wanted to achieve once the pilot was up and running. That ambiguity shielded the project from criticism in its early stages. But it also created uncertainty for civic entrepreneurs, who struggled to turn abstract ideas into concrete actions.

This uncertainty would become a defining feature of the pilot. As we will see in the next chapter, various forms of ignorance and deliberate unknowing were central to how the smart city mobilized support, obscured power asymmetries, and reconstituted long-standing inequalities.

4 (Dis)Connecting the Smart City

In late 2015, the US Department of Transportation (USDOT) introduced a “smart city challenge,” inviting mid-sized cities to “use emerging transportation technologies to address their most pressing problems.”¹ The prize: up to \$40 million for the winning city.² Kansas City, one of seventy-eight applicants, advanced to the final round, along with six other cities, and was given three months to develop a full proposal. A familiar scene followed. Public officials, local entrepreneurs, and community groups huddled in conference rooms, much as they had in previous initiatives such as the Google Fiber rollout and the smart city pilot, to brainstorm how to connect smart technologies in transportation to their pressing needs.

This time, they claimed to have a sharper focus on the city’s segregated past and present racial inequities. Their proposal prioritized closing what city officials called “the opportunity gap” in neighborhoods east of Troost Avenue. Singling out Prospect Corridor as an area that was marked by “high crime, vacant and abandoned buildings, and pervasive hopelessness,” the proposal envisioned

transforming it into a hub similar to “downtown with cutting edge public transportation, economic development opportunities, and immense pride.”³ The plan was to use public Wi-Fi, smart street-lights, and mobility hubs featuring bike and car sharing, bus rapid transit lines, ShotSpotter technology, and educational facilities—signaling a commitment to “developing ladders of opportunity” on the east side.

Kansas City did not snag the top prize in the end, but this collaborative exercise convinced the smart city stakeholders that they were onto something big. The application became a springboard for what they called a second phase of the smart city, which would target neighborhoods east of Troost Avenue. They began to talk about this second phase of the pilot even before the first phase had been officially launched downtown.

This chapter traces how Kansas Citians grappled with making the smart city work—and not just as a technological infrastructure but as a civic and racial project. I examine smart city enthusiasts’ attempts to address the city’s racist inequalities and how residents and community organizations at the receiving end experienced these smart interventions. Throughout the city’s many tech-driven initiatives, “connectivity” emerged as a civic, not to mention ethical, imperative against the background of a city divided along racial, economic, and political lines. As the smart city pilot gained traction, public officials and civic entrepreneurs reinforced their commitment to making their hometown the nation’s “most connected” city through computational means. Yet the lived experiences of these smart interventions diverged sharply from their promises. Despite good intentions, I argue that the city’s deep-seated racist divides, both in discourse and material capacities, ultimately shaped and constrained the possibility of becoming an equitable smart city.

Kansas City’s inequalities trace back to historically racist policies in housing, education, and policing, particularly in neighborhoods populated by Black, brown, and immigrant residents.⁴ Troost Avenue, long the city’s racial dividing line, continues to separate

neighborhoods dealing with racism, housing insecurity, poverty, and multigenerational injustice from the rest of downtown and the affluent suburbs. Socioeconomic and spatial divides in the city remained stark, even as digital revitalization efforts took off in the early 2010s. As I discussed in chapter 1, Google made national headlines for “digital redlining,” especially in neighborhoods east of Troost, during the rollout of Fiber. By late 2015, as the smart city pilot took shape, the “digital divide” had become a pressing concern among city officials and civic entrepreneurs.⁵ At the same time, the Black Lives Matter protests in Ferguson, Missouri, just hours away, and the militarized police response were still fresh in the public’s mind. This broader political reckoning lingered in the background of smart city conversations.

Similar to Silicon Valley, where the ideology of postracialism and racial awareness coexist, smart city enthusiasts in Kansas City were aware of their hometown’s racist divides, while deflecting responsibility for the structural injustices underlying them.⁶ None of my interlocutors thought racism had dissipated in their hometown. On the contrary, the topic was very much alive, either explicitly or tacitly, in conversations around innovation, entrepreneurship, or the smart city. City officials, civic entrepreneurs, and even tech partners brought this awareness of the city’s longstanding inequities into their interpretation of what a smart city was and how it might operate.

Their interventions, however, mirrored the civic entrepreneurial strategies I analyzed in earlier chapters. They drafted a USDOT grant application to transform the city’s east side into another testing ground. They organized events like cookouts, which brought residents from different neighborhoods together, or created Facebook pages in the name of “uniting” the city. Their self-assured recognition of racism combined with their elision of political conversations was similar to the type of deliberate ignorance I discussed in the previous chapter. But this genuine desire to “connect” the city, especially by using smart technologies, backfired at each step, entrenching the very divides it sought to mend.

Many of these interventions touted in policy papers never saw the light of day, including the second phase of the smart city pilot. Those that were implemented, which largely focused on internet access, received minimal engagement from residents on the east side of the city. Black community organizers and business owners either just cautiously dipped a toe into these initiatives or opted out entirely. The terms “digital inclusion” and later “digital equity” abounded in the city during my fieldwork, but their scope was sorely limited, to the extent they ended up becoming racist framings unto themselves.

Over the rest of this chapter, I first chronicle the city’s digital inclusion initiative and how the dominant meaning of inclusion was collectively constructed and stabilized over time. I then zoom in on another federally funded pilot project in Kansas City’s public housing complexes to demonstrate the multiple and conflicting meanings of connectivity in the so-called smart city. Finally, the chapter presents interviews with Black community organizers and entrepreneurs to illustrate how the city’s smart initiatives failed to account for the lived experiences of communities of color, including their critiques of smartness, which they experienced as surveillance, and their definitions of inclusion.

THE LOOP OF DIGITAL INCLUSION

On a cold February morning, I got off the bus on Prospect Avenue on my way to what the mayor’s office called a “co-working day on digital inclusion.” We were meeting at the Lucile H. Bluford Public Library, named after Kansas City’s legendary civil rights activist, journalist, and publisher. At the bus stop, I noticed a young Black man curled up on a bench, covered in a thick, mustard-colored blanket. He seemed asleep. When I arrived at the library, the staff ushered me into a meeting room where many guests had already taken seats. One of the senior city officials was setting up his laptop while instructing the attendees to join a shared Google document to take

notes. Simultaneously, he was trying to hook up his smartphone to broadcast the meeting to the Digital Inclusion Facebook group.

As I settled down, making small talk with some of the attendees, I spotted the same man from the bus stop walking into the room. He grabbed the chair next to me. “Hi, I’m Jordan,” he said and asked if this was a breakfast meeting. There was no coffee or breakfast in the conference room, which was unusual, because the monthly meetings of the Digital Inclusion Coalition often had some coffee and even some snacks for us. But this was not one of our regular meetings and we were at a different library branch.

“We are going to talk about Google Fiber and public housing,” I said as Jordan nodded and scanned the room. “Is this about finding jobs in the city?” he asked. But our conversation was interrupted by the senior city official announcing that he was circulating a sign-up sheet to collect our e-mail addresses. He wanted to make sure everyone in the room could stay connected after the meeting. Jordan leaned again and asked, “What do you do if you don’t have an email address?” “You could leave your phone number instead,” I replied. “My phone was stolen in my last relationship,” he said. As I tried to come up with alternatives, we were interrupted again by the same city official who now asked us to stand up in front of the screen for a group selfie. We all got up, smiled for his camera, and returned to our seats. Jordan had left the room.

My brief interaction with Jordan brought to light all the contradictions of our meeting that day. We were gathering on the east side of the city, which was rare to begin with, but were still stuck inside a meeting room, isolated from the rest of the neighborhood. There were no new faces among us even though we were in a new location. The shared Google Doc was intended to mimic how the city, led by a group of civic entrepreneurs, had applied for Google Fiber several years ago. But very few, if any, civic entrepreneurs showed up at the digital inclusion meetings. Why were we trying to act like them? The selfies and the live-streaming aimed to showcase how interactive and tech-savvy the coalition was, but it was always the same person

who insisted on these gimmicks. At one point, a city official joked that all we needed at the public library was “unlimited coffee” to turn it into a coworking space. Why did we need a coworking space? Was the library not good enough?

The Kansas City Coalition for Digital Inclusion (KCDI) came together in 2015 as a collaborative group of local nonprofits, internet service providers, city agencies, and businesses.⁷ It started as a monthly meeting of a handful of advocates at the public library and expanded into a group of more than eighty organizations over time. Its mission was to bridge the digital divide in the city.⁸ The group gathered every first Friday at the library’s central branch downtown.

I attended twenty-one KCDI meetings between 2015 and 2018. A typical meeting started at 10:00 a.m. with around twenty people spread across the room. After the introductions and announcements, there was often some time dedicated to one or two short presentations to spotlight member organizations or guests who wanted to introduce themselves to the coalition. Occasionally, we broke into smaller groups to discuss how to raise awareness about internet access or broaden participation from the city. The meetings usually ended around noon with some members lingering to catch up or network, while others rushed to their next appointments.

Under the leadership of the KCDI, Kansas City hosted regional and national summits on digital inclusion. It attracted academics and civic groups from other cities eager to replicate its collaborative approach. The National Digital Inclusion Alliance, an organization focused on digital equity, routinely acknowledged the KCDI for being a good model of how to promote digital equity and inclusion at the local level.⁹ The coalition created a digital equity strategic plan that was adopted by the city council in 2017. The KCDI’s persistence and visibility elevated connectivity as more than just a technical necessity in Kansas City. Digital inclusion was a defining ethical imperative in the pursuit of a smarter and more inclusive city.

Even as the KCDI garnered praise from the local government and digital inclusion advocates nationwide, many within the group

grappled with the ambiguity of its objectives and effectiveness. Some members viewed the KCDI as more of a networking hub for non-profits than a catalyst for real change. Haley, one of the founding members, traced this to the group's origins, "when Google Fiber had to remediate the problem they created with their initial installation."¹⁰ She was referring to how Fiber's rollout plan, and the way it was publicly displayed on a webpage, created concerns about digital redlining. "With that came a pot of money," Haley recalled, and "all of a sudden digital inclusion became a thing that we were going to have to combat."¹¹ Another founding member, however, defended the coalition's seemingly vague goals. "We don't do the stuff that [a nonprofit] does," he suggested in an interview, "But we help [a nonprofit] do its job. We provide a framework to start measuring success in digital inclusion and give support for grant applications."¹² For some, this facilitative model was a strength, but for others, it reinforced the coalition's drift into merely a symbolic presence.

Despite sincere intentions, the coalition struggled to translate its digital inclusion goals into concrete outcomes. Some members described the meetings with terms such as "spinning plates."¹³ Haley attributed this inertia in part to Kansas City's civic culture, which she felt lacked the capacity to build collective action. She believed that the city did not know "how to do a movement." To illustrate her point, she mimicked the all-too-familiar outbursts of empty enthusiasm at the KCDI meetings: "We can do this!" Her voice then dropped to a more serious tone. "Yes, we can, but we have to let go from some institutional conventions and let things be messy and let multiple people drive and create a set of guiding principles."¹⁴

The coalition was certainly a façade to deflect critiques of digital redlining, particularly in the aftermath of Google Fiber's public scandal in 2012. And members genuinely tried to leverage the city's smart moment in order to spotlight long-standing inequalities in the city. Both statements were accurate, and that partly explained the coalition's struggles. In interviews with other regular members of the KCDI, one suggested that the coalition was "really bad at

finding the right problem to solve as a collective.”¹⁵ This more critical member, after a particularly aimless-yet-self-congratulatory meeting, reflected that they were trying “to feel empathy without [being] uncomfortable [about the divide]” or being confronted about the structural reasons why the divide existed in the first place.¹⁶ Yet those same core members, the ones who showed up month after month, rarely voiced such discomfort aloud.

The KCDI’s most significant accomplishment was the 2017 adoption of the Digital Equity Strategic Plan by the city council.¹⁷ The plan essentially enshrined the group’s existing objectives into municipal policy. Even though there was no immediate action attached to this recognition (i.e., no municipal funding), city officials loved tout-ing their commitment to digital equity in public meetings. I recall the first time the city’s new chief innovation officer visited a KCDI meeting. They regaled us with a story of their job interview with the mayor. When the mayor asked them about “innovation” priorities, their answer was swift: “Closing the digital divide.” They chuckled, “And next thing I know is that I’ve got the job.”¹⁸ The truth of the story mattered less than the knowing nods in the room. Closing the digital divide was the right answer.

This commitment to digital equity, however, was tied to a rather narrow understanding of what it means to be included in the smart city. Reducing the much larger issue of inclusion to a specific idea of connectivity, the coalition, along with the local government, pinpointed three primary challenges: internet access, lack of devices, and digital literacy. This narrative cast working-class communities of color, particularly those on the east side, as not only lacking the resources to connect to the internet, but also the motivation to be online. The latter point originally derived from a study conducted by Google Fiber in 2012; the company reported that in addition to affordability, they found “relevance” as another reason why residents did not have internet access at home. “They don’t think they need it,” a company representative reportedly suggested. “They don’t see

why.”¹⁹ This narrative of relevance and affordability repeatedly came up in city officials’ accounts of the so-called digital divide.

Media scholar Germaine Haleboua argues that the framing of internet access as a simple matter of relevance ignores the structural context that shapes digital practices and the very meaning of connectivity. In the particular context of Kansas City, it was not a lack of appreciation for the internet’s benefits that made residents view online access as a luxury, she suggests. For those struggling to keep a roof over their heads or put food on the table, “the internet looked a lot less relevant.”²⁰ But even if the city officials or the members of the KCDI recognized the problematic framing of relevance, they were still stuck on the narrative of a “digital divide,” which skewed the larger implications of what it means to be included.

Scholars in critical studies of technology have long critiqued what they termed a “deficit” model of digital divide.²¹ This framework cloaks responsibility in passive language and obscures the structural roots of inequalities. It presents the divide as a technical gap to be closed, not a product of systemic racism and historical disinvestment in communities of color. In doing so, it sidesteps the legacy of US policies that have long denied working-class Black and brown neighborhoods access to basic infrastructure and civic participation.²² Equally limiting, the deficit narrative erases the creative and political agency of Black digital users, who have significantly shaped tech platforms.²³ From building distinct online communication styles, not to mention communities (e.g., “Black Twitter”), to innovating new platforms and apps, Black cultural producers have provided many digital spaces with purpose, critique, and style.²⁴

This fixed meaning of digital inclusion, or “digital equity,” as it was later codified in city policy, loomed large as Kansas City launched and then tried to implement the smart city pilot. As I discussed already, the local government and smart city enthusiasts were eager to extend the pilot to neighborhoods east of Troost, even before they launched the first phase downtown. In so doing, they set out

to rectify a digital divide that they viewed as recent and solvable by simply coaxing communities of color to view the internet as relevant to their lives.

Similar goals animated the work of another smart city program when, in early 2016, the Department of Housing and Urban Development selected Kansas City to become a pilot for ConnectHome. A collaboration between public housing authorities and internet service providers in twenty-eight cities, ConnectHome aimed to bridge the digital divide by delivering the same trifecta of benefits that mirrored the KCDI's objectives: high-speed internet access, technical support, and digital literacy training, all directed at public housing residents.²⁵ Kansas City's Housing Authority readily joined forces with Google Fiber, which pledged to equip housing complexes with gigabit internet. Local nonprofits, eager to contribute, offered a combination of refurbished devices and training sessions in Google-renovated computer labs.

But, as I will discuss next, connectivity did not automatically translate into inclusion for public housing residents. Instead, ConnectHome revealed the multiple and conflicted meanings of building a "connected" smart city.

CONNECTHOME

On a sunny afternoon in March 2016, I took an Uber to Wayne Miner Court, a public housing complex on the east side of the city, to attend the second sign-up event of ConnectHome. It was a ten-minute ride from where I was working that day but taking the bus would have exceeded an hour and required two transfers. Once I got into the building, I followed the Google Fiber signs, some of which framed the entrance to the indoor basketball court, where the event took place. Two young white Google reps stood at the door in blue Fiber T-shirts, greeting each walk-in with a smile and logging their names on Apple laptops before handing out coupons for free food. A community

organizer had once described them to me as “Brooklyn hipsters.” He was not far off. Inside, the scene felt like a miniature tech expo. Local nonprofits, tucked away at tables, showcased a smattering of refurbished devices. I counted about thirty residents, most women and young children. Smartphones were ubiquitous, clutched in adult hands while kids tugged at them, eager to play. There was a separate play area for kids, while the food table served large foil containers of nachos. The real draw was the Google Fiber stand, manned by another pair of young white Google employees. Their job was to extol the virtues of Google Fiber, explain how ConnectHome works, and secure sign-ups from interested residents. When they were not eyeing the door for new arrivals, the young Fiber team, perhaps performing extra enthusiasm as part of their job, danced to the booming music.

Google Fiber had already wired up Wayne Miner Court, but each household still needed to sign up and invite technicians to activate their internet service. The handouts outlined the process: “Find the four digit number printed on a sticker on the network box, join the ‘Get Google Fiber’ Wi-Fi network on your smart phone or computer, visit fiber.google.com/getfiber, follow the steps to choose your plan and set up a Google Fiber account, pay a one-time 10-cent fee for the Gigabit Internet Plan, and connect.” Technicians, if invited, would be happy to help residents go through these steps, Google representatives explained.

After walking around and saying hi to a few people, I was interrupted by a young woman, whose gaze was fixed on a table nearby displaying Google Cardboards, a piece of cardboard shaped like a virtual reality (VR) set that worked with a smartphone app.²⁶ She was curious about what they were, especially for her daughter, so we picked one up to see how it worked. The daughter, a ten-year-old named Celina, was captivated. But there was something off with the app, so Celina and I decided to walk over to the Fiber desk to see if they could get the Cardboard working for us.

One team member, initially perplexed, summoned a colleague. The colleague flipped the smartphone nestled within the Cardboard

on and off, flashing a triumphant smile first, but then he struggled with putting the phone back in. Celina jumped in. She had already watched how the other guy took the phone out, so she skillfully put it back in the Cardboard. As we made our way to her mother, I asked Celina if she had a smartphone or computer at home. No. Internet connection? No. She had a computer at school but that was it. By then, Celina was tired of my questioning, fully absorbed by the Cardboard's preloaded VR animations.

Just as Celina moved on to showing the Cardboard off to her mom and friends, I said hi to a white woman in her seventies, whom I knew as a volunteer at one of the nonprofits focusing on digital inclusion. Mildred used to be a real estate broker, but now she taught computer skills and resume building to young people on the east side of the city. This was her first time at Wayne Miner Court and she wanted to see the new computer lab funded by Google Fiber. I took her to the lab while recounting my previous visit, when I had noted the eight gleaming devices displayed on the desks.

As soon as Mildred walked in, she noticed that those devices were not regular laptops; they were Chromebooks. They would only work with Google Apps, she informed me. Seeing the disappointed look on my face, Mildred offered a consoling pat on the arm: "There are still many things people could do on Chromebooks," she said, "especially if they only use the computer for internet access." On the way out, we ran into Celina again. After I introduced her to Mildred, Celina asked what kind of classes she could take at the lab. "I want to be able to fix computers when they break down," she said. "You just gave me a brilliant idea," Mildred replied, she was going to offer computer maintenance training to residents at Wayne Miner Court.

ConnectHome in many ways illustrated exactly what a digitally included city should look like, as imagined by the proponents of the smart city and members of the KCDI. A public-private partnership (Google and the Housing Authority) brought resources to public housing residents. Nonprofit organizations bolstered their efforts by providing training sessions. Residents attended the sign-up events,

asked questions, and were open to hearing what Google and the nonprofits would offer. Celina's curiosity demonstrated not only digital savvy, but also an eagerness to do more.

However, the project also laid bare how limited, not to mention limiting, this model of inclusion was. A computer lab with only eight Chromebooks was not enough. Cardboard cutouts, intended as gimmicky lures, were not backed up by concrete plans to foster deeper and lasting engagement. ConnectHome seemed content to promote a technological future without truly committing to people's potential.

Still, the Housing Authority and members of the KCDI were delighted to have this program in Kansas City. "These folks are getting the very best of the best," announced Rachel Merlo, Google's then-community impact manager in Kansas City, as she presented the ConnectHome initiative at a monthly KCDI meeting. She asked the coalition members to step in with more literacy trainings and funding to support the distribution of refurbished devices. "And building awareness among residents is really key." She concluded, "This is really free, we are not going to charge at any point and residents need to know that. All they need to do is to open Google accounts."²⁷ Another nonprofit leader pointed out that the ConnectHome was an opportunity to measure how the combination of access, devices, and training could make a difference in the lives of residents who were digitally connected. That is the kind of information funding organizations ask of us all the time, he added, and now the coalition members could figure out some answers.

A few weeks after the launch of ConnectHome, however, rumors circulated that resident sign-ups lagged behind expectations. The exact numbers were unknown because Google Fiber did not share this information with the public. My attempts to talk to Rachel Merlo during my fieldwork continually failed. The Housing Authority also declined to reveal the figures. My only recourse was to visit public housing complexes by tagging along with public officials on their routine trips. While I managed to chat with a few residents here and there, formal interviews also required permission from the Housing

Authority. Still, I was able to conduct semistructured interviews with residents who were hand-picked by public officials (and very likely Google).

“Some residents do not even answer the door sometimes,” a Housing Authority official observed in one of my tag-alongs, “or just open [the door] only an inch and talk through the chain.”²⁸ He then explained, “When somebody from the Housing Authority knocks on the door, people assume there’s a problem.” But this mistrust, I noticed, ran on both sides. The computer labs, funded through the ConnectHome initiative, were often locked when we visited the housing complexes. Gaining access involved tracking down someone with the key. Residents’ ability to use the labs freely or come and go as needed was restricted.

The relationship between residents of public housing in the United States and their landlord (the housing authority) is far more complex than the typical tenant-landlord dynamic in private housing. Daily life unfolds under a constant gaze, with random inspections, several security cameras, and frequent police patrols. Giving up on privacy and acquiescing to invasive monitoring, not to mention exhausting questioning, are the prerequisites for basic assistance.²⁹ Especially for low-income Black women, who are overrepresented among the poor in the country, and immigrants, public housing is “not a home,” as sociologist Cayce Hughes argues, but a site of pervasive surveillance.³⁰ During tenant council meetings, I witnessed residents providing excruciating detail, justifying a specific prescription purchase or explaining an absence from an employment program. They had to provide these details to retain existing benefits or seek additional support. Combined with the constant threat of evictions, surveillance makes public housing much less secure for residents.³¹

Google’s partnership with the Housing Authority only amplified these anxieties. A public official bluntly recounted residents’ responses during and after sign-up events:

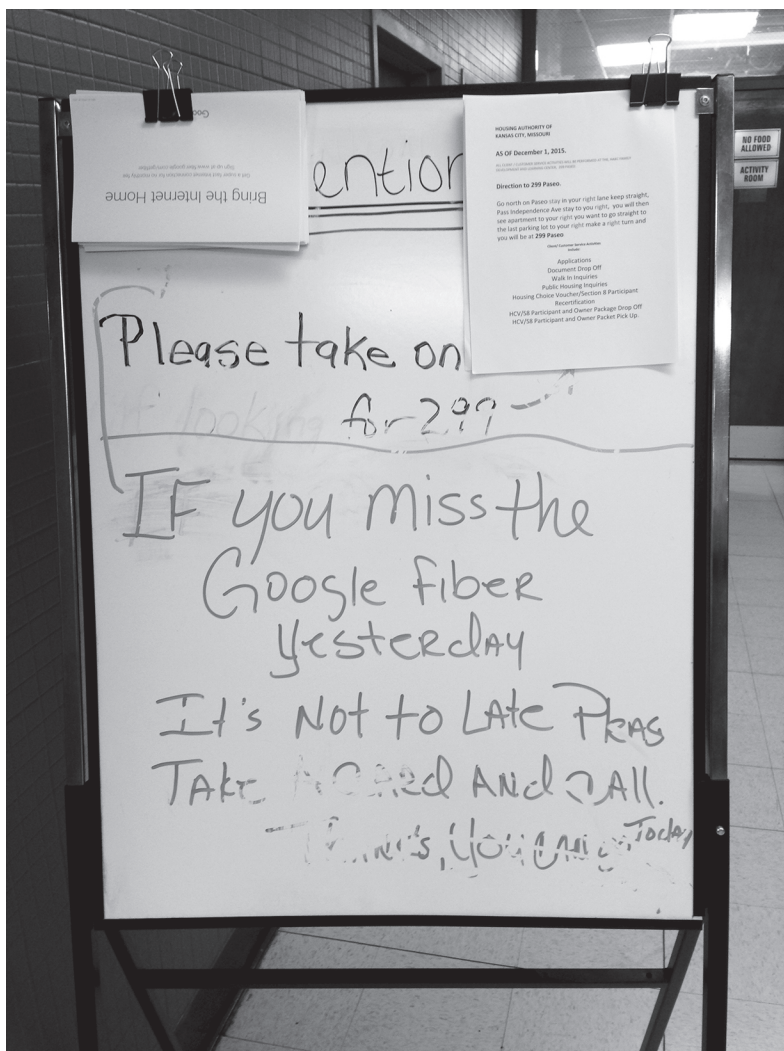


Figure 4. Google Fiber announcement in a public housing complex. Photo by author.

Even though we've [launched ConnectHome] in several communities, they're constantly saying, "I don't want it because I don't want anybody spying on me. I don't want anybody to be in my home." They literally think we have cameras on there. Monitoring their day-to-day activity, that we're trying to find something on them, even though they have nothing to hide.³²

During my brief conversations with residents, they voiced similar concerns. "I don't want to have that box on the wall," one resident declared when I asked her why she did not want to sign up for the free internet. Another resident questioned why this so-called premium connectivity was freely available: "Why is [the internet] free? Is [the city] spying on us?" she asked. Others were worried that Google would share information with the Housing Authority, not to mention other public agencies. Residents had an intuitive sense of that old axiom, "If a [tech] service is free, you are the product." These suspicions about digital connectivity and surveillance were not unfounded, as recent studies document that internet access may be actively policed by social institutions.³³

Kerrin, a public housing resident I interviewed courtesy of the Housing Authority, acknowledged similar tensions.³⁴ Our conversation began with her love of the internet, which fueled her passion for crafts and crocheting and even opened her eyes to the lucrative possibilities of Etsy shops. She let me in on one of her internet security secrets, which was to rename her Wi-Fi connection "kcpd surveillance" to make sure nobody else tapped into her line. Then, she immediately shattered the illusions of the digital divide in her community, at least as viewed by the local government and the KCDI. "A lot of people have internet access one way or another," she chuckled. "They may not have computers, but they have the internet or at least data." She understood why some of her neighbors were skeptical of the "free" internet. "If it's free, what's coming with it?" she asked. And even though she used Google Fiber, she was still upset that the computer labs were not available to residents except for trainings. "I

can't be in there by myself," she said, rolling her eyes. "Somebody else has to be there with me."

Google did not explicitly comment on resident concerns, but some of the company representatives at sign-up events were aware of these complaints. One Google representative acknowledged residents' worries that Google might be "spying on them" or "tracking them and wanting to know everything about them."³⁵ "If you think about it, Fiber is a very young business," they explained. The company was also learning how to reach out to people. They then shared plans to hold office hours at the lab on Tuesdays and Thursdays "to show people how to use Google products."

However, ConnectHome was never the foolproof model of digital inclusion it was made out to be. Built on the assumption that access, devices, and training alone could fix the digital divide, the program overlooked how connectivity was tied to surveillance, distrust, and structural inequities. As scholar Seeta Peña Gangadharan argues, smart technologies are inherently "privacy-poor, surveillance-rich."³⁶ And public housing residents were keenly aware of this fact. While city officials and civic entrepreneurs occasionally discussed privacy in the context of the smart city, they rarely focused on the expansive gaze of public institutions or tech companies. Public housing residents, however, understood that connectivity and surveillance were two sides of the same coin in the digital city.

Given the history of surveillance that poor and racially minoritized communities have long experienced in the United States, the widespread mistrust of ConnectHome among working-class residents of color in public housing should not have come as a surprise.³⁷ Nevertheless, this concern did not register, at least conspicuously, among city officials or members of the KCDI. As the city's smart city enthusiasts geared up for planning the second phase of the pilot program on the east side, they continued to overlook these very real concerns.

ENDURING DIVIDES

On February 3, 2016, while the then-US Housing Secretary Julián Castro launched the ConnectHome program at the West Bluff public housing complex, I was sitting in the office of Nadine, the director of a venerable nonprofit dedicated to after-school programs on the east side of Kansas City.³⁸ In a career spanning more than two decades, Nadine had a long list of credentials as a nonprofit leader, an educator, and a community organizer. “They’ve been texting me all morning,” she complained, pointing to her phone. “Are you coming? Are you coming?” she mimicked, referring to the press conference.³⁹ Her assessment of ConnectHome? “Throwing crumbs to the peasants,” she offered with a sigh. “And it’s just getting old, you know, keep coming to the meetings.”

Nadine’s critique echoed a sentiment I heard often from Black community organizers and civic leaders on the east side. The local government or other civic organizations, such as the KCDI, reached out to them for the optics, but the ideas they shared at those meetings were rarely incorporated into decision-making. Philip, a Black leader of a nonprofit put it this way: “Usually, what happens is they get in these deals, they formulate and allocate where they’re going to have the resources, who’s going to lead it. And then if they have to, as a necessary evil at the tail end, they bring in the people in the community.”⁴⁰ For many community organizers on the east side, the city’s approach to digital inclusion felt not just woefully inadequate but hollow. They were convinced that neither the KCDI nor the municipality truly knew the east side. Most of the usual suspects who showed up at smart city meetings or digital inclusion conversations rarely crossed east of Troost Avenue.

On the infrequent occasions when the KCDI meetings were held outside of downtown, organizers still observed a lingering disconnect. “Okay, you’ve moved the meeting from the library downtown to the Prospect, but then when you look around the table at the meeting, there’s nobody from the community there. You just have to meet

with the community,” Philip contended.⁴¹ “And then you say, ‘Well, you can’t get people from the community to participate.’ But do you invite them?” A different organizer who worked with Philip underscored the superficiality of the city’s efforts toward digital inclusion by adding, “Inclusive is not finding one person that you’ve taught how to open up email and send an email with an attachment.”⁴² According to Nadine, even this lack of knowledge was intentional: “They can say, ‘I didn’t know.’ They can plead ignorance or just lack awareness, but if they really want to crack [digital equity], even if they knew about it, what were they going to do?”⁴³ Her observation reminded me of smart city enthusiasts’ celebration of deliberate ignorance.

Nadine’s organization, focused on K–12 tutoring, grappled with the repercussions of the digital divide firsthand. “Now some of the testing is done on computers, but our kids are not used to that so they’re getting further behind while other kids are wired to do all of those things,” she explained.

At some schools, the kids are not allowed to take the computers home. You go ten miles to the left, then the suburban kids get computers and two upgrades a year. Everyone’s on Apple. And if it was their child that was getting left behind, they would advocate like the mother bear going up against a pack of lions. We don’t just want computers. We don’t want the refurbished stuff. We need Macs too.

After a frustrated pause, she concluded, “We are truly maintaining the segregated city.”⁴⁴

The dominant framing of digital inclusion was not simply a discursive move; it also continued to mirror and reinforce the city’s historical racial and spatial divides. The east side was, from the beginning, marked as a zone of digital divide. Surely, the area was disinvested and required civic attention. The Kansas City School District had shrunk drastically in recent years, with shuttered buildings like abandoned elementary schools becoming the homes for nonprofits like the W. E. B. DuBois Learning Center, which offered

academic tutoring and tech training.⁴⁵ Connecting for Good, another tech-focused nonprofit, found refuge inside the renovated Linwood Presbyterian Church.⁴⁶ But while the east side shouldered the digital inclusion efforts, the west side buzzed with innovation and entrepreneurial programs.⁴⁷

The smart city pilot took root downtown, nestled alongside the new streetcar route on the west side of Troost Avenue. Dotted with coworking spaces, artisanal coffeeshops, and the new digital kiosks up and down Main Street, the mayor's office was showcasing its future tech plans in an area that was already in the midst of gentrification. The Startup Village, to which many tech entrepreneurs flocked right after Google Fiber's arrival, resided just north of the Plaza, a district known for its fancy stores and restaurants but also for the harassment of young Black people by police and private security.⁴⁸

Nadine pointed out the stark spatial divide underscored by the lack of connection between her organization and the Sprint Accelerator, the haven for young, mostly white tech entrepreneurs: "Our buses are designed to move people through and past the city. Not to get people to connect. How to get to Sprint Accelerator from here? There's no buses, is there? And if there is, how many blocks away?"⁴⁹

Despite these community organizations' efforts to craft a new narrative, the gap between them and the rest of the city's understanding of digital equity continued to widen. Philip's organization, for instance, had several programs to foster computer and robotics design skills. It also aimed to forge ties between young people and Black leaders in the tech industry. "Everybody is chasing bells and whistles and the next, latest, greatest technology," Philip said. "Why not get them ready to adopt the skills? So that when you bring all the bells and whistles in and you need somebody to run, they're able to do what you can't do."⁵⁰ What is at stake, according to him, was a "true economic mobility" for working class communities of color. "Just because [the city] brings connectivity does not mean that the industry will want to hire people," he noted pointedly. "If the industry is not invested in this, people still cannot get a job or a career."⁵¹

These initiatives, however, remained on the sidelines as the KCDI kept promoting internet access, devices, and digital literacy training as its core goals.

Black community organizers, such as Nadine, Philip, and other leaders and volunteers that worked on the east side, held a far more expansive vision of digital inclusion and equity. They refused to reduce the needs of residents on the east side to a mere checklist of internet access, computers, and basic digital literacy skills. Connectivity did not simply mean getting low-income residents of color on the internet or out of the neighborhoods. They instead aimed to create spaces where residents could learn from those who were more experienced in the industry and beyond, thereby adopting a breadth of knowledge and skills that would expand opportunities, not confine them to a narrow range of tasks or jobs. What the city framed as digital divide, they saw a living legacy of the city's racist disinvestment in their neighborhoods, schools, and communities.

It was not just nonprofit organizers who were frustrated with the city's rhetoric of connectivity. Many Black entrepreneurs, especially those connected, however loosely, with civic entrepreneurship and the smart city, were also critical. Take Veewiser Dixon, who had caught local news attention for his vision of "a Black Silicon Valley blooming south of the Jazz District."⁵² Dixon already had a strong track record of successful businesses across Kansas City. Inspired by the city's tech-centric revitalization attempts, he was determined to put the east of Troost on city officials' and civic leaders' radar. "Kansas City has a vision to become a startup city and attract companies like Google and Amazon to move here," Dixon explained to me when I met with him for an interview. "Why don't we position our neighborhood with the same vision?"⁵³ His plan, however, had a crucial twist: "We would bring along everything that comes with technology and you don't have to be so tech-savvy to get involved with it."

Dixon's proposal involved a mix of educational opportunities, new housing, and locally owned businesses in the neighborhood, including a much-needed grocery store. "Anybody that lives in the area

should be exposed to entrepreneurship and innovation,” he declared, reaching for a hefty binder on his desk. “Not only from just KC Digital. We want to build not just software but also want to do the brick and mortar. Go down the street, see brick and mortar stuff as well as all the geek stuff.”⁵⁴

The binder for his “Enterprise Village” was chock full of plans and promises. It included maps, agreements, and letters of support from local businesses, community groups, even politicians. Some of those letters dated back to 2011, others were as fresh as the day before our interview. Dixon’s eyes sparkled as he walked over to the giant map plastered across his wall, his finger rolling over the locations he envisioned for a grocery store, a coffee shop, an engineering school, and an event center for entrepreneurs.

The project had been in the works since 2008, so I asked Dixon about the hurdles he had faced. He sidestepped the question at first with a kind smile: “I call those obstacles opportunities.” After some prodding, he gave me a careful but firm response: “The corporate community has to be fair in distributing the wealth back to the people who are supporting them,” he said, “other than just tokenism.” “You can give me a donation but what does that do to really solve anything?”⁵⁵ His primary challenge was access to capital.

In November 2019, three years after our interview, *The Kansas City Star* reported that Dixon’s concept had evolved. In the updated version, “all references to a Black Silicon Valley [were] gone.”⁵⁶ By then the city’s smart moment had already passed, along with the language of tech-driven transformation that once gave his vision political traction.

Younger Black entrepreneurs in the city were more forthcoming about the gap between the city’s rhetoric and reality regarding equity and innovation. Lex, a Black entrepreneur in the Startup Village, spoke frankly about the dual challenge of securing funding as a minoritized entrepreneur and the availability of funds for businesses like his. “I don’t see any more money going into Black incubators,”

he said. “Latino entrepreneurs are still all fighting for scraps. There’s no big fund that I’ve seen created for women-owned businesses, minority-owned businesses, multicultural businesses.”⁵⁷ The burden of these identities, Lex went on to explain, was a double-edged sword: “When you get identified as a purely minority incubator, your money just drops.”

Having made his way through the circuit of digital equity meetings and innovation summits over the last few years, Lex was intimately familiar with the hypocrisy undergirding these initiatives. Diversity, he observed, was code for white women. People of color were a distinct minority in those spaces, and their voices rarely carried weight. Even at the Startup Village, Lex recounted, “when we started having our Black friends show up here and had more cars out, we noticed an increase in KCPD presence in the parking lot.” My eyebrows shot up. “It always happens,” Lex sighed in response.

The disconnect between civic rhetoric of inclusion and the lived experience spilled into public view in the summer of 2020. Olivia Williams, a young Black entrepreneur from Kansas City, published a searing blog post for the Kauffman Foundation, one of the city’s most prominent champions of entrepreneurship.

The post’s title, “I’m a young, Black Kansas Citian planning to move—KC, why should I stay?,” echoed the concerns of many young Black community organizers and entrepreneurs I spoke with in my fieldwork.⁵⁸ Urban development in Kansas City, she wrote, often resembled a high-end renovation project, one focused on sterile, modern spaces catering to a specific demographic: white, middle- to upper-income residents. She yearned instead for a city that demonstrably “values its Black population.” Beyond hollow gestures, she demanded concrete action: to “empower [the city’s] low-income communities directly” by channeling resources and volunteer support.

As I will discuss in the following chapters, the smart city pilot and other tech-centric urban initiatives, championed by both the local government and civic entrepreneurs, had sputtered out by the

time Williams's post hit the web. In their wake, far from connecting the city, these initiatives seemed to have deepened the long-standing divides.

CONCLUSION

In January 2016, just as city officials were finalizing the USDOT smart city proposal and preparing to launch ConnectHome, a documentary by Michael Price entitled *Our Divided City* aired on local PBS. It laid bare the rising tide of homicides and the stark lack of basic public services on the east side of Troost Avenue.⁵⁹ Mayor Sly James, seemingly stung by the portrayal, published a blog post shortly thereafter outlining the city's past efforts and future plans for these neighborhoods.⁶⁰ Budget proposals earmarked for urban renewal and code enforcement were touted alongside the "digitization of the Prospect Max bus route, supporting Wi-Fi and information age kiosks that will enable citizens to engage with their city government"—a nod to the city's burgeoning bid for the federal smart city challenge.

Not everyone on the east side of Troost thought this was a good idea, however. Some residents were critical of the city's fixation on smart technologies, which, they argued, was a sideshow, distracting from the far more pressing issue of disinvestment in their neighborhoods. "I live on 28th and Van Brunt," a resident said. "I know I can't shop in the neighborhood. I need to take the bus to get to grocery stores. What the hell do I care about getting something on the east side in a driverless car?"⁶¹ Another resident called out the proponents of the smart city, both in government and among civic entrepreneurs, for painting a techno-optimistic future that glossed over the varied consequences for residents. "There's a lot of people in this town who are perfectly content to talk about driverless vehicles all day long," he scoffed, "with no regard to how many people it may put out of work."⁶²

Fueled by a desire to “bridge Kansas City’s racial divide,” a gaggle of civic entrepreneurs at the Startup Village set up a Facebook page called “Our United City” after the documentary aired. Their mission? To host monthly cookouts and bring entrepreneurs and community organizers on both sides of the city together. Led by a team of white and Black, predominantly male entrepreneurs, these cookouts aimed to spark conversation among Kansas Citians from diverse backgrounds. The initial gatherings drew a modest crowd of a few dozen residents, garnering local media attention.⁶³ The group was described as having “no agenda but to bring people together.” They believed that a shared passion for entrepreneurship and for changing the city was a good start for building relationships. “Every important change starts with relationships,” one of the Startup Village leaders was quoted in the news as saying. “But until you get a little uncomfortable and have people to talk to about that, we’re not going to change.”⁶⁴

Set against a new wave of Black Lives Matter protests during the summer of 2016, simmering disagreements soon arose within the group about how to address the city’s persistent gun violence and the police response. Some members, frustrated by the group’s perceived inaction, pushed for attendance at political rallies and neighborhood protests. One civic entrepreneur, acknowledging the limitations of a Facebook group, still considered their original idea could be “a small first step for people that haven’t lived the pain.” He then added optimistically, “Ultimately, the hope is to get more passionate people to the table. And who wouldn’t want to attend a free cookout with a bunch of tailgate games and awesome people!”

“Our United City,” the Facebook page as well as the monthly gatherings, died down in less than a year. Its earnest desire to unite the city via casual gatherings of entrepreneurs and social media conversations was a perfect microcosm of how smart city enthusiasts grappled with the city’s long-standing divides, which were shaped by legacies of racism and disinvestment. As with the cookouts, the smart city initiatives promised connection—and delivered a set of

genuine attempts at that—without an honest reckoning with the past, not to mention a clear-eyed political agenda that confronted police brutality, gun violence, and concentrated poverty in the present. The efforts toward connectivity were imbued with hope but failed to contend with the lived realities of those who had long been excluded from the city. The knowledge and creativity of working-class communities of color were consistently ignored in the process of trying to build the “most connected” city.

In the next chapter, I discuss how city officials tried to make the smart city pilot work in another way, one that traded the promise of digital inclusion for the allure of predictive insights. They turned to the data collected from the pilot to forecast needs, uncover hidden connections across complex urban problems, and find solutions to issues that had long plagued the city. Yet, as they worked through the numbers, city officials and civic entrepreneurs found that the so-called smart predictions merely confirmed what they already knew. The predictive models reflected back the city’s well-known divides, leaving city leaders grasping for answers that no data, no matter how sophisticated, could provide on its own.

5 Spinning Wheels

At academic conferences, when I reach the part of my talk about Kansas City's smart city pilot and introduce the pothole predictor, I can usually count on a laugh. The contrast, after all, is obvious: a buildup of grand promises, visions of radical transformation, and untapped insights, followed by the launch of something as unremarkable, as ordinary, as a pothole predictor. The guffaws are a recognition that the audience, whether initially enchanted by the smart city or skeptical from the outset, must reckon with the disconnect between what was promised and what ultimately arrived. However, the joke, if it is one, overlooks something we ought to take seriously: the work of translating vague promises of smartness into municipal action. Behind every smart city pilot are trials, errors, and recalibrations to make prediction plausible via slow, uneasy adjustments.

This chapter picks up after the launch of the smart city pilot. It examines how municipalities figure out what to do with smart technologies that are no longer theoretical but operate in the real world. Drawing on nearly a year of observations and interviews with city

officials and other stakeholders, I trace the process of converting the smart city's data into practical solutions, or what Oscar Gandy Jr. calls "actionable intelligence."¹ I argue that the persistent challenges of the city, the ones local knowledge has already accounted for, remain unsolved while city officials and tech partners spend months trying to transform urban life into a predictable form. As they work through iterative trials and quiet recalibrations to prove the value of smart technologies, what ultimately emerges is not breakthrough discovery but confirmation of what they already know.

Up until the launch of the pilot, as we have seen so far in the book, smartness in Kansas City existed more vividly in the imagination of city officials and civic entrepreneurs than in reality. They envisioned a city where novel urban data could be parsed to reveal unexpected insights, and long-standing problems could be solved through precise data collection. The hope was to integrate prediction into local governance, making the city more efficient and anticipatory.² But once the pilot was launched, these aspirations quickly met the reality of half-developed technologies, including frequent glitches and the friction that comes with trying to embed new systems within the existing structures of city hall. City officials found themselves navigating misaligned expectations. They faced growing pressure to justify their initial investment, just as the limits of urban data began to weigh on their efforts.

The pothole predictor, which made its debut in 2017 with great fanfare, demonstrated how prediction might be integrated into local governance. In Kansas City, city officials, who had begun the pilot without clear objectives and with a performative embrace of uncertainty, were, with the pothole predictor, eager to address a persistent, practically inevitable problem. Ask any urban planner or city official in the United States, and they will tell you that this is the kind of tool, if it works, that could become invaluable for municipalities. Its launch allowed smart city enthusiasts to claim a victory, small though it was, after months of trying to balance the technical complexities of predictive models with various political expectations inside city hall.

Yet the pothole predictor also stands as a telling example of the limitations of predictive tools in local governance. From the way it was developed and tested to how it was rolled out in the wild, the pothole predictor gained traction so long as it echoed the patterns officials had grown accustomed to recognizing. Its success depended on aligning with preexisting assumptions and institutional expectations. Far from offering novel ideas or surprising solutions, prediction reproduced what was already known. Smartness, in other words, became a kind of technological circularity, in which prediction was a mirror not a map. Meanwhile, the city's problems remained firmly in place.

In the rest of this chapter, I first discuss how city officials grappled with the challenge of making the smart city both visible and predictive. I show that they framed local knowledge through the lens of sleek dashboards, rendering the city's data in ways that felt cutting-edge and coherent. But making smartness legible was not enough. City officials were also eager to project predictive capacities within municipal decision-making. They wanted to demonstrate that they could anticipate and solve problems before they arose. Prediction in local governance, however, turned out to be as much a political challenge as a technical one. The models had to align with organizational expectations, reinforce political legitimacy, and produce results that seemed actionable. Efforts to embed prediction into municipal agencies made smartness legible but not transformative.

DIGITIZING THE CITY INTO A DASHBOARD

In early November 2016, almost six months after the official launch of the smart city pilot, I attended the monthly meeting of the Smart City Advisory Board. Appointed by the mayor in August 2015, the board consisted of city officials from various municipal departments, a city council member, the IT director of the Kansas City Police Department, and a few local entrepreneurs. The executive director

of the Kansas City Streetcar Authority chaired the board.³ The group often met on the eleventh floor of city hall and oversaw the implementation of the smart city pilot. The meetings were open to the public, but participation from residents was usually minimal, with more empty chairs than attendees. Apart from myself—referred to as “the researcher from New York”—there were typically one or two residents present to follow the board’s monthly discussions.

The board meeting opened, as it always did, with pleasantries and an update on the streetcar.⁴ Then, the chair of the board inquired about a comprehensive summary of the data collected from the pilot thus far. “We might be missing a lot of utilizations,” a board member interjected. “We are using bits and pieces of it, but it is not broadly organized.” There was a collective curiosity in the room over exactly what data had been amassed and where it was being stored. There was also a tacit urgency to figure out the utility of the smart city data and “the change the city was trying to accomplish,” as one board member put it. The implied question was clear: How were the experts at city hall supposed to work with the smart city data when even the board members did not have a coherent grasp of it?

The chief innovation officer nodded to each commenter, acknowledging the concerns in the room. He then described what he called the ongoing battle to stabilize data flows. It had been difficult to receive datasets from the tech partners with “anything close to consistency.” The office of innovation was working on a “public presentation” of the smart city data, he announced. Eager to share the first prototype with the board, he fumbled with his laptop, connecting it to the screen behind the boardroom table. As he did, his words sped up and he launched into a lengthy description of the new data platform:

INNOVATION OFFICER: We are putting together a platform which integrates the data we’re getting from the streetcar line, sensor data, along with publicly available [data], and putting all that into algorithms which ask, “Are we making progress on enforcement issues, economic development, education, or efficiency? There

is still, even around this table, not a good understanding of the data that is being collected from the system. Your question, "Are we actually maximizing the use?" There probably are some creative applications that haven't emerged yet.

CHAIRMAN: Right but making an attempt to capture the types of data that are being collected or could be collected from the system is fundamental to what [the smart city] is about. Thinking about alternative applications, ways to use that information . . . We've got sensors, car movements, lights, pedestrians, and potentially parking. We know we've got traffic light and power consumption. There are some things that we know are being generated. Is there a way to put that into an abbreviated—

INNOVATION OFFICER: —a dashboard?

CHAIRMAN: Even just a list of here's some of the outputs that the system does or could generate as a basis for understanding what it is.

INNOVATION OFFICER: It is in development. [His eyes, at this moment, were fixated on the big screen as he was still trying to make the interactive visual work.]

BOARD MEMBER: I'd like to see, here's the set of data that we're using and then this is how it relates to the activity we have going on, and here's the change in that thing we're trying to accomplish.

CHAIRMAN: [Nodding] Yeah, here's the benefit, here's the conclusion, here's the problem, here's the data that's being generated, and here's the result of that.

INNOVATION OFFICER: By February we should have that. [He emphasized the last word in an effort to show that he did indeed understand what the board members were demanding to see.]

BOARD MEMBER: There are good minds around this table. You're talking about parking, well that's Campbell's life [Manager of Parking Services at City Hall]. When you talk about sensors collecting data on parking,

well bring him to that, ask him what his thoughts are, what has he looked at?

INNOVATION OFFICER: It's coming . . . We've given [the data analytics company] sixty days to work on the problem of enforcement. We figured we'd start with people who are actually dying, start from such problems, and work our way forward. Eventually, we'll get to parking. And then we've also got your kiosk data.

Juggling the demands of answering questions from the board and attempting to work through the dashboard map on the screen, the chief innovation officer eventually let out an exasperated "Come on now!" Then he admitted, "I guess it is not working right now," and redirected his attention from the screen to the board members. "It was working early this morning." Unfazed, the board shifted its focus to another topic. The chief innovation officer quietly abandoned the map-scrolling effort.

A glitchy map on a big screen is a routine spectacle in local government. So are city officials speaking past each other in meetings. But this particular back-and-forth marked a distinct phase in the smart city pilot when the stakeholders were dealing with the aftermath of launching a test bed amid excessive hype. Once the pilot was up and running, it became clear that the launch was not the end but rather the start of a new phase.

Prelaunch, the smart city was largely abstract, akin to what science and technology scholars describe as a socio-technical imaginary.⁵ It presented a vision, not to mention a performance of a desirable urban future, but these ideas existed primarily in corporate presentations, municipal press releases, grant applications, and design workshops. The Smart City Advisory Board, for instance, had dedicated many meetings to discussing the construction progress of the pilot and the potential benefits of a smart city. But they rarely addressed the specific ways these technologies would be utilized later. I was used to hearing from city officials that the pilot had "a good deal of aspiration, not a whole lot of definition."

The problem was not a lack of data savvy at the mayor's office. The DataKC team, a trio of dedicated data officers, regularly tracked and reported on municipal metrics, both internally and in public meetings. But the real-time data from the smart city pilot was markedly different than the resident surveys and longitudinal analyses that monitored the city's progress against annual objectives. The new flux of information was constant but also inconsistent and difficult to interpret. As previous chapters have shown, what the city hoped to solve through urban data was also too broad or too vague to offer any clear direction.

I recall Kansas City officials attending the 2017 Summit on Data-Smart Government at Harvard University. In a room full of public officials, academics, and industry representatives, one stood up and said, with a touch of humor, "We now have data from [our smart city pilot]; please tell us what to do with it!"⁶ The line got a laugh, but the need was real. They wanted ideas from other cities to figure out how to match the data at hand with city hall's daily operations. Internal discussions raised questions like, "Now that we can detect someone parked too long on Main Street, should that information be forwarded to somebody in city hall?" and "Where should the data go when we detect a speeding vehicle?" The smart city was useless unless it could be effectively integrated into local government. But they did not know where to begin.

The office of innovation ultimately enlisted a local data-analytics firm to help make sense of the pilot data and explore potential applications. The firm's first proposal was simple: Build a dashboard.⁷ As I discussed in chapter 3, Cisco's CDP was not designed to make smart city data accessible or shareable with the public. The new firm proposed a real-time interface that could visualize pilot data, such as traffic flows, pedestrian movement, and parking availability. The idea was to display information and invite civic entrepreneurs to come up with new insights about the city.

The dashboard also promised something more far-reaching: the potential to consolidate the city's other "data assets"—that is, to

merge the existing municipal datasets with the information gathered in the smart city pilot. Much data exists in government agencies “in theory,” the data-analytics firm noted, but “whether or not it is actually usable is another story.”⁸ The dashboard, they argued, could bring those latent possibilities into view.

The office of innovation enthusiastically embraced the dashboard idea. After the advisory board meeting, when the dashboard failed to load, the chief innovation officer emailed stakeholders a link to the prototype and a few slides. One of the slides showed a “KCMO Data Lake,” an extensive plan to pool together the city’s internal datasets, smart city data, studies conducted by individual agencies, commercial datasets, and other surveys. In a later one-on-one meeting, the chief innovation officer walked me through the slide. The goal, he explained, was to digitize “the wisdom of a lot of our city employees who are just flat-out brilliant and who intuitively know all the things that are going to happen to the city over the next couple of months.”⁹ The dashboard was not just a static placeholder to visualize data from the smart city pilot. It was a dynamic repository to unite the disparate knowledge scattered across municipal agencies.

The Data Lake intended to resonate with what smart city enthusiasts frequently criticized: working across departmental silos in local governance. The lack of communication and the isolated workflows were a familiar lament. “The water guy is only worrying about water; the police department only cares about public safety,” the chief innovation officer told me during our chat.¹⁰ By pulling together diverse forms of knowledge and bridging departmental divides, the KCMO Data Lake aimed not only to make municipal data more accessible but also to prompt a shift in how information circulated inside city hall.

As the slide above illustrates, the anticipated payoff of the Data Lake was a “future state” in which new forms of knowledge were also generated. By seamlessly uniting diverse streams of municipal data, the dashboard was expected to reveal connections that might otherwise remain hidden, much like the “smart problems” described in chapter 3. City officials and the data-analytics firm saw the platform

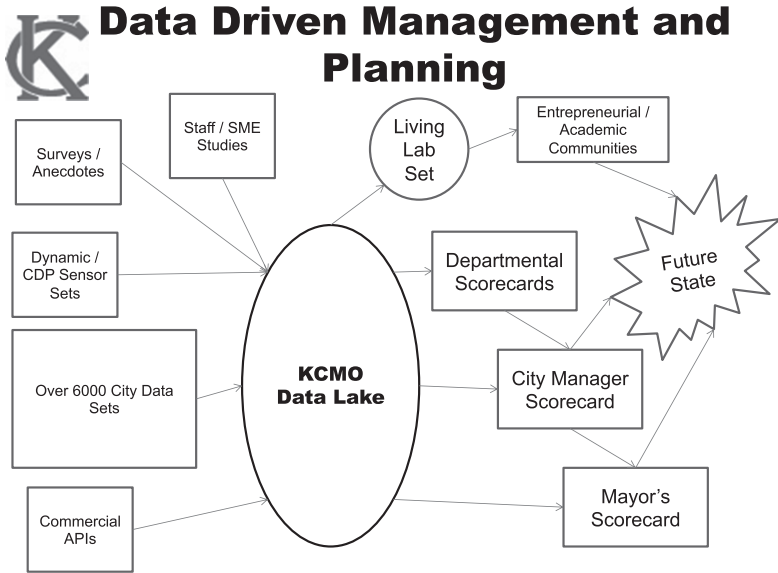


Figure 5. KCMO data-driven management and planning.

as a means of discovery, uncovering correlative, and even causal, connections between seemingly separate problems. It was this capacity to predict, and to subsequently prevent, future problems that lay at the heart of the smart city, and it is this promise of prediction that I turn to next.

FROM DOING THINGS RIGHT TO DOING THE RIGHT THINGS

Behind every smart city initiative lies the desire to cultivate a new capacity within city hall, one that can anticipate and address problems before they fully emerge. By using computer models that detect patterns in datasets and evolve through machine learning, city officials hope they can shift from being reactive to proactively predicting

problems. The first step in this process is data collection, which Kansas City officials believed they were doing through the smart city pilot. What follows data collection is the demanding and ongoing task of data work, which includes organizing, reviewing, and deciding how to train and test statistical models.¹¹

Much of the existing literature on data work emphasizes the labor of workers rendered invisible by the systems they help uphold. This is the kind of labor that is not only unseen but, more often than not, undervalued, even exploited.¹² While some of that behind-the-scenes grunt work was present in Kansas City, there was also a steady back-and-forth between city officials and data analysts at the firm. In addition to processing, cleaning, and routinizing datasets, they continually negotiated how to formulate questions and where to seek new or complementary sources of information.¹³ Together, they puzzled over how to come up with a predictive model that was both statistically rigorous and palatable to the local government.

To illustrate the depth of this kind of data work, let me refer back to my chat with the chief innovation officer during which we reviewed the slides he circulated among the smart city stakeholders. “We should look at the city as a set of multivariable equations,” he said, while moving on to the second slide. City hall, he believed, had long been preoccupied with “doing things right,” by tracking municipal performance through preselected indicators. A smart city, he asserted, aimed to harness data to “do the right things” by identifying correlations and patterns across municipal datasets. He then provided a series of examples, “What is it that I am doing in water services that may impact education? Or what is it that I am doing in public works that may impact crime? If I look at the repair rates of streetlights and correlate the number of functioning streetlights to crime rates, is there something there? You know, from a public works perspective, maybe I should prioritize streetlights before roads because there is a public safety impact associated with that.”¹⁴

As I continued to jot down notes, he delved deeper and brought up the concept of “mobility” and its varying conceptions. “If you

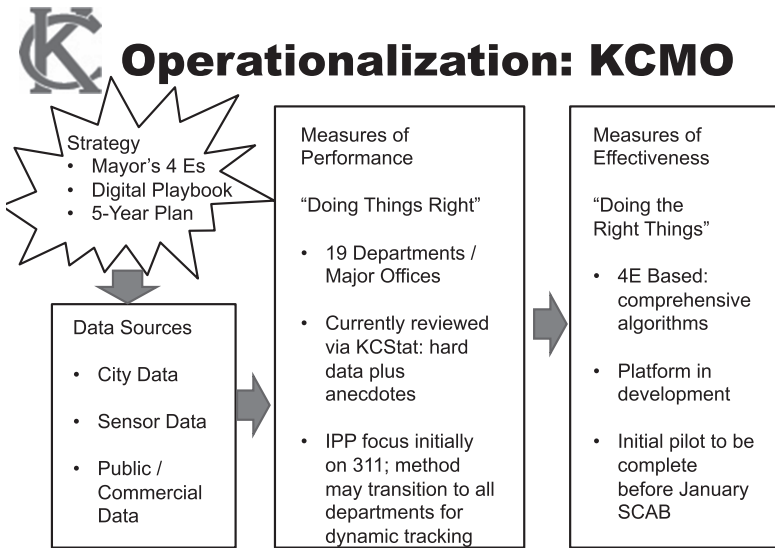


Figure 6. KCMO operationalization.

talk to the transportation authority, [mobility] refers to buses or bus routes. But if you talk to someone from the Full Employment Council, they'd give you a speech about education and opportunities. And if you talk to the digital inclusion folks, they would think about mobility in terms of how someone might access jobs." His point was clear. The office of innovation and the local data-analytics firm wanted to use the dashboard's design as an opportunity to sift through diverse datasets, search for patterns, and hopefully isolate a correlative relationship across seemingly different issues.

But turning this vision into a working model proved difficult. The promise of prediction through repetition requires large, clean, and consistent data. A model must be trained and tested to confirm that its predictions hold up. The looming risk is always spurious correlations, which are patterns that appear statistically significant but could mislead city officials and prompt them to act on faulty assumptions. What the city needed was more than abstract questions or

intuitive theories. It needed usable, structured data that could support modeling efforts.

As noted already, Kansas City's smart city pilot routinely struggled with data that were neither consistent nor sufficient. Real-time data, the core promise of the entire project, quickly became a struggle. The sensors were prone to recurring glitches, while data received from the partner tech companies arrived in an unusable form. The data-analytics team tried to turn to historical records from municipal agencies to complement the pilot data, but that was not an easy task either. "This little data is not really helping," city officials and data analysts would mutter as they pored over scattered ideas, seeking a path forward.

The office of innovation and the local data-analytics company worked on a smart traffic plan, for instance, when the city became one of the seven finalists of a competitive federal grant discussed in the previous chapter. The aim was to bridge the east-west mobility divide. For the analytics firm, this was an opportunity to tap into real-time traffic data from the pilot, draw on parking sensor information, and even purchase third-party data from ride-sharing companies. But the glaring gap was public transportation, specifically, bus passengers, the very people who would potentially gain the most from a smart traffic plan. City officials and analysts scrambled to find relevant datasets: how long residents spent on buses, how far they traveled to reach work or a grocery store, etc. They even reached out to me at one point, hopeful that a PhD student might have some answers. But the local data just was not there. A traffic plan that ignored public transit could not meaningfully address the city's mobility challenges. The city quietly shelved the project and moved on to another idea.

Beyond the technical hurdles of gathering enough data to train and test predictive models, the data-exploration phase also ran up against the internal politics of city hall. The chief innovation officer, prone to referencing his military past, liked to point out the contrast between the army and local government. "In the army, you have

the resources you need, and people are always busy planning and fighting the war,” he would say.¹⁵ But in municipalities, governance was less structured and more fragmented. Resources were scarce, and city officials were too busy putting out the metaphorical fires at city hall to focus on long-term planning, no matter how urgently the future loomed.

And then, of course, there was the politics. Even if the team managed to design predictive models, getting municipal departments to adopt them was another matter. “All 19 departments have a sway in different areas, and the power is much more distributed across the enterprise,” a city official explained to me. “And then there are the city council members who change alliances or change priorities in the budget.”¹⁶ At city hall, getting anything done often felt like a negotiation. Every move was subject to competing interests and shifting resources. The dashboard and predictive models, uncertain novelties to begin with, only added to the challenge of securing buy-in from municipal agencies.

The office of innovation, in collaboration with the local data-analytics firm, turned to Mayor James’s “4Es” policy agenda—education, efficiency, employment, and enforcement—as their guiding framework to navigate the internal politics. By aligning the city’s technological initiatives with the mayor’s political priorities, they believed they could win broader support from municipal staff and work with them to train, test, and validate different predictive models.

One early prototype was a machine-learning model to predict which properties were most likely to become vacant. If it proved reliable, the model could streamline code enforcement and check off two policy goals at once. Another was a neighborhood efficiency index that would use data from 311 calls, hazardous building reports, and pending permits to rank areas by level of need. The team continued to gather data, build other prototypes, and refine existing ideas with feedback from the mayor’s office.

Sociologists Marion Fourcade and Jeffrey Gordon argue that as state institutions increasingly rely on data and prediction, policy

strategies might be shaped more by the availability and affordances of data than by traditional priorities.¹⁷ In Kansas City, one might have expected city officials to follow this trajectory, prioritizing easily quantifiable problems or focusing on issues where predictive models promised technical precision. But as the office of innovation and the local data-analytics team cycled through projects, such as vacancy prediction, a neighborhood inefficiency index, or a smart traffic plan, they found themselves grappling with different challenges.

Translating complex, existing problems into algorithmic models was not easy.¹⁸ Not every municipal issue could be addressed by data or machine learning. Parsing an existing challenge into a set of variables was anything but straightforward. Prediction was not merely a quest for technical accuracy; it was a deeply political process, shaped as much by institutional constraints as by the contentious politics around these issues. Whether the several prototypes were shelved due to technical shortcomings, political resistance, or simple inertia was not always clear. But in the end, it was the pothole predictor that was deemed the most reliable and the most ready for implementation.

DREAMS VS. REALITY: THE POTHOLE PREDICTOR

Kansas City's data-exploration and model-building phase dragged on for nearly a year, but in February 2017 the mayor's office was ready to launch an interactive dashboard called "SmartKCMO." Building on the prototype the chief innovation officer had failed to demonstrate at the advisory board meeting, the dashboard provided live updates on traffic movements and showed available parking spaces as well as the movement of the streetcar downtown.¹⁹ During the launch, city officials and the data-analytics company emphasized that this was merely the first step. Next, they planned to connect this ostensibly seamless, real-time communication to

municipal operations, allowing, for instance, the adjustment of “bus services to real-time rider patterns.”²⁰

Almost six months after SmartKCMO went live, the office of innovation introduced another novelty out of the smart city pilot: a pothole predictor capable of forecasting the number and locations of future potholes citywide.²¹ The announcement praised the model for blending a wide range of variables, such as “the number of freeze-and-thaw cycle, traffic counts, bus route, and pavement condition,” into predicting the city’s future potholes.²² “We’re directing [municipal staff] to where they need to look, so they don’t have to check every street all the time,” a data analyst explained to me later in an interview.²³ The model reportedly touted an accuracy rate of 80 to 85 percent, which, data analysts described as “good enough” for such models.

Considering that the city had been mulling over several prototypes for nearly a year, how did this unassuming pothole predictor leap ahead of other projects already in progress? When I posed this question, one city official responded bluntly: “The mayor wanted to see something with a definitive ROI [return on investment], so we did potholes.”²⁴ The return on investment, in this case, was not a fiscal calculation. It was a shorthand to indicate a potential increase in municipal efficiency, the kind of gain that could, in theory, be converted into dollars saved, even if the numbers remained elusive. It also signaled something more politically expedient: a visible, tangible win for the mayor’s office that would not elicit much pushback from the rest of the city.

It was no coincidence that the winning project focused on the public works department and the city’s maintenance and repair budget. While the data-analytics company and the office of innovation were working through predictive prototypes, Kansas City had just launched a sprawling infrastructure initiative called “GO KC.” Approved by the city council in April 2017, GO KC was an \$800 million plan to finance street, sidewalk, and flood-management repairs. It was also the largest general obligation bond authorization in the

city's history.²⁵ For smart city enthusiasts at city hall, this high-profile, well-funded project presented an opportunity. If predictive analytics could be folded into GO KC, the smart city agenda could finally demonstrate its value in solving an urgent, visible problem. That would be a win-win for the mayor's office.

When I met with the chief innovation officer soon after the launch of the pothole predictor, he told me that the mayor's office expected a 20 to 40 percent savings in road repair budgets, covering more than six thousand miles. But the real win, he insisted, was pushing a municipal agency (public works) to become more data driven. Staff at public works were eager to test the predictive model in the field, physically inspecting the predicted potholes and verifying the pothole predictor's accuracy. "If I can get public works to become more data-centric," the chief innovation officer enthusiastically explained, "then that is 40 percent of the discretionary budget of the city and that would be a huge transformation."²⁶

For Kansas City, the pothole predictor's potential was therefore impressive on both quantitative and qualitative accounts. It promised cost savings and operational efficiency. It was hitched to an already-approved, citywide initiative, and boosted the city's data-driven approach to local governance. The pothole predictor also lent credibility to the broader smart city effort and gave the data-analytics firm a concrete win as its first contract neared expiration. Having been launched without a defined problem, the smart city pilot ultimately needed a politically palatable program to maintain the appearance that this new kind of urban data could deliver value. GO KC offered the resources, visibility, and political cover the pilot had long lacked.

However, even without a project such as GO KC, a pothole predictor would likely be embraced because it is the kind of intervention smart city technologies handle best. It is an attempt to address a symptom of urban decay rather than confront the root causes. Unless cities undergo a radical transformation, such as shifting toward investing in public transit, lessening car dependency, and

reorganizing urban density, the pothole problem will persist. By promising to predict where future potholes would form and allowing city officials to address them before they become eyesores or sources of complaint, the pothole predictor offers a neat, if superficial, solution. It takes a long-standing structural issue and reimagines it as something that could be managed with the right data. As a result, the pothole predictor conveniently sidesteps the more difficult, and political, question of why the roads are crumbling in the first place.

In Kansas City, the appeal of the pothole predictor also lay in how easily it fit into existing institutional routines. The office of innovation worked closely with public works to develop and refine the pothole predictor. The data-analytics company tested its model in real time, feeding results back to the city, while city officials could reassure themselves that everything was under the careful oversight of public works. This iterative cycle of testing and validation, however, just ended up confirming what was already known. Once it was launched in the field, the model's predicted potholes were reportedly the same ones that city officials already flagged in departmental discussions, service requests, and the tacit knowledge of city workers. The predictor thus validated existing expertise rather than transform it.

The limits of this model became even harder to ignore during a crisis. In early 2019, Kansas City was pummeled by an unusual number of freeze-and-thaw cycles, and pothole reports skyrocketed to over two thousand in the first two months of the year, nearly four times the amount reported in all of the previous year. Already short staffed, city crews could not patch potholes fast enough, leaving many residents frustrated. In the midst of "the pothole war," Kansas City quietly tossed out the pothole predictor. The decision was tucked into a longer news report, accompanied by a brief comment from a city spokesperson: "The pilot program identified locations that the city already knew needed repair."²⁷ For all its promises, the smart solution offered little beyond a statistical touch on what the city was already doing. In the end, prediction had circled back to the obvious.

STATING THE OBVIOUS

Around the same time as the pothole predictor, Kansas City officials introduced a Digital Equity Map, another prototype layered onto the SmartKCMO dashboard. At a monthly meeting of the Kansas City Digital Inclusion Coalition (KCDI), a city official presented the new tab, which was introduced shortly after the city council passed the Digital Equity Act. Unlike the other prototypes, the map was not predictive. It relied on datasets from the Federal Communications Commission (FCC) and the US Census Bureau to demonstrate internet access block by block.²⁸ The goal was to visualize disparities in internet access across the city.

It was, however, still overlaid with real-time public transit data—a feature that aimed to underscore the intertwined experiences of internet access and physical mobility. “In our economically distressed neighborhoods,” the city official who shared the map said, “residents are smartphone-dependent for internet access and transit-dependent to get to work and education.” Moving his cursor on the screen to show internet speed variance across telecom companies in each neighborhood, he added that the city was committed to “sync the digital equity and smart city efforts” and to keep the digital divide from widening as the city became smarter.

The correlation between income levels and internet access was already well known to any member of the KCDI. It was, in fact, the reason why the coalition came together in the first place. So when the city official opened the floor for feedback, I asked what this map revealed that we did not already know. His answer wandered. He cited other cities where residents had noticed discrepancies between the advertised and actual internet speeds. This map, he believed, could inspire similar initiatives in Kansas City. His long response veered away from my central concern: Was this just another exercise in restating the obvious?

Our exchange, however, sparked an unexpected wave of enthusiasm among the coalition members. For the first time in a long while,

people in the room began to speak up, suggesting potential uses for the map. “As a leader of a community nonprofit that serves urban core areas,” one member said, “it helps me to know that there is a visible comparison between poverty and [internet] speed.” Another suggested that the map could provide valuable information to guide decision-making: “It is not our intention to get involved in political discussion about right or wrong, but it is helpful to get some information about the broadest array of options available to some of these neighborhoods.” Someone else brought up St. Paul, Minnesota, where the city claimed internet service providers were cherry-picking where to invest, whereas this map showed that companies in Kansas City still prioritized low-income neighborhoods. The map, to my surprise, was a hit among KCDI members. A few months later, it received praise from Harvard’s Data-Smart City Solutions initiative for “its ability to reveal insights on the far-reaching influence of internet connectivity.”²⁹

Was the Digital Equity Map truly improving internet access or simply pointing out the inequities that community members already knew well? Or was the model linking vacant buildings to crime—a project that was ultimately shelved—offering fresh insights or simply reinforcing outdated, not to mention flawed, assumptions about urban decay? These questions point to a recurring issue. As with the pothole predictor, these prototypes were not exposing hidden patterns so much as reaffirming what public officials and agencies already believed to be true. Predictive tools did not upend business as usual; they served to validate institutional knowledge.

How did we end up here? I suggest that part of the answer lies in the city’s need to demonstrate a clear return on investment from the smart city, not to mention the political pressure underlying this ambition. Although city leaders touted that the smart city data would tell them what to do, they inevitably relied on their own expertise and the mayor’s approval to guide the design. The chief innovation officer, for instance, once described a potential tool that would tie vacant buildings to crime: “[The data-analytics firm] put crime data and abandoned buildings together. Because what [KCPD officials]

told us was wherever there's abandoned buildings, that's where crime is."³⁰ In this example, the merging of indicators was not born from the data, as smart city enthusiasts liked to claim. It came from the police department's assumptions, which the model was then built to reflect. "How we redefine the city's problems as multivariable pieces," the chief innovation officer acknowledged, "is going to get extremely political."³¹ The data-analytics company would draft a model and then it would be handed off to the mayor: "[The mayor] will look at it and ask how we came up with these numbers, and we'll show him the details of the equation, and he will say, 'You need to prioritize more on these concerns than others', and we'll make changes."

I do not know if every prototype followed this cycle, but the fact that city officials believed that this should be the process was telling. The aim was not to substitute politics with numbers but to inject some amount of science into dealing with politics. The numbers were not meant to disrupt but to reassure, to start a conversation that, as city officials knew, would ultimately be shaped by political considerations.

The yearlong experiment with predictive prototypes in local governance, culminating in the case of the pothole predictor, also tells a larger story about what it means to make smartness work for the city. Faced with the urgency to show concrete results and the fear of public failure, smart city enthusiasts gravitated toward familiar, safe topics and data patterns that would not confuse, provoke difficult questions, or challenge assumptions. By validating local wisdom through the lens of smart data, they tried to project a sense of progress and control, hoping to reinforce the perception that they were on the right path. Until, inevitably, they were not.

CONCLUSION

Despite the trial and error involved in building predictive models to demonstrate the value of smartness, the city's persistent problems

remained unsolved. The celebrated promise of data-driven insights served to dress up the obvious or to reinforce long-held assumptions with layers of numerical authority. The dashboard, for instance, which was intended to digitize the city's collective wisdom, reflected the messy realities of governance. Predictive models reliant on big data faltered, tripped up by datasets that were neither large nor clean enough to support accurate forecasting. Far from smoothing over political rifts, each data-driven effort merely underscored their depths. Without the commitment of municipal departments to turn predictions into action, the models were left adrift.

Kansas City's experience with the smart city pilot underscored that, no matter how well curated, data alone could not solve problems. If the smart city enthusiasts were no closer to addressing the problems that municipal knowledge had already anticipated and adapted to, was the smart city a failure? Not quite. In the next chapter, I discuss the great length city officials and civic entrepreneurs in Kansas City went to frame the pilot as anything but a failure.

6 Avoiding the F-word

Unlike the ballyhooed launches, most smart city pilots meet their ending not with a bang but with a whimper. Occasionally, a spectacular scandal erupts, laying the project's flaws bare for public consumption. Think Toronto's Sidewalk Labs project, whose design and political process were so egregious that the pilot imploded before it even began collecting data.¹ But this is usually the exception, the cautionary tale splashed across headlines. Far more common is the quiet fade-out, a slow descent into obscurity that barely registers in public conversation. In Kansas City, too, the smart city pilot stopped neither suddenly nor spectacularly. Its slow, agonizing unraveling stretched out for almost two years.

As mentioned in the previous chapter, the pilot's most-prized outcome, the pothole predictor, was quietly ended in early 2019. The city's various other tech-focused initiatives either slowed down or were shuttered one by one between 2019 and 2021. During those two years, I eagerly waited for a moment of collective reflection from city officials or civic entrepreneurs, perhaps even a reckoning with the city's venture

into test-bed urbanism. That expectation proved to be futile. The F-word (“failure”) remained stubbornly unspoken by the city’s public officials—whether they were still on office or not—and civic entrepreneurs. This chapter asks: How does the allure of smartness endure in the face of crumbling pilot programs? How do stakeholders negotiate success and failure as smart city pilots are reduced to websites frozen in time or ones that greet visitors with the dreaded Error 404 pages?

In what follows, I document my search for a public conversation around failed test beds (or lack thereof) and what it means to conclude smart city pilots without accounting for what worked and what did not. I draw on data collected remotely as a global pandemic kept me away from Kansas City after my fieldwork ended in late 2018. I continued to maintain contact with many of my interlocutors, however, via email and phone or Zoom calls. I followed them on social media, listened to their online talks and interviews, and even attended some public meetings once virtual gatherings became commonplace in 2020. Municipal reports and local news also helped me stay up to date with the evolving narratives of smartness.

Kansas City is no exception among cities that end smart city projects without uttering the F-word. Take Columbus, Ohio. After securing the \$40 million USDOT grant for the Smart City Challenge—the one for which Kansas City was a finalist—Columbus spent almost five years trying to roll out smart technologies for public transportation.² In the end, the project lagged on nearly every metric, but the final report still deemed it a success.³ After reporting on Columbus’s efforts and how the city spent the money, a *Wired* article concluded that “Columbus officials insist the Smart City project was not a failure.”⁴ Or consider San Diego’s much-touted smart streetlights initiative; once held up as a model by Kansas City officials, it later fizzled out on multiple fronts. In addition to its failure to deliver on its original promises of “civic empowerment and sustainability data,” the project morphed into a police surveillance system that intensely targeted neighborhoods with predominantly working-class communities of color.⁵ Local organizing and public outcry in 2020 forced

a suspension of San Diego's smart streetlights, but after a few years of a lull, the city council greenlit their reactivation in August 2023.⁶ Even when the failure of a smart city project was made undeniably evident by local communities, smartness found a way to ostensibly redeem itself and come back into public life.

Based on the unremarkable, slow-motion collapse of Kansas City's smart initiatives, I chronicle the efforts of city officials and civic entrepreneurs to carve out a murky space between triumph and defeat. I call this liminal space "nonfailure" to capture how smart city enthusiasts interpreted and narrated these public experiments even after they folded. Nonfailure reflects the way my interlocutors, both in public statements and private conversations, never definitively acknowledged the pilot as a failure. It captures smart city enthusiasts' enduring ambivalence, a reluctance to name it as such, while also acknowledging the impossibility of calling the smart city a success.

Nonfailure is not some PR wizardry orchestrated by city officials or tech companies. It is baked into test-bed urbanism, in which such tech-centric pilot programs in public are designed to remain nestled in that nonfailure zone: neither a spectacular disaster nor a clear success. But nonfailure breeds a troubling lack of accountability. Without grappling with unfulfilled promises, the wasted public funds or the opportunity costs, municipalities remain vulnerable to the tech industry's shape-shifting.⁷ Framed as experimentation, the risk for cities is rarely outright failure but rather a continual hovering just above it. Instead of crashing or succeeding, these speculative projects are perpetually about to deliver and rarely accountable. And as quickly as one pilot fades from memory, another test bed might arrive with the next company rolling into town and peddling new hype.

THE SLOW DEMISE

Two years after the launch of the pilot, the smart city was still favored among most city officials. In early 2016, when the city was a finalist

for the USDOT grant, there was already talk of a second phase. But it was not until the summer of 2018 that the mayor's office issued a new Request for Proposals (RFP) for the next phase of the smart city. Was the first phase of the pilot so successful that the city was now moving to expand it? The local newspaper's reporting presented an ambivalent answer. When pressed about how the smart city had "actually improved lives," a senior city official trotted out a few metrics: free downtown Wi-Fi that lured more than two million visitors (visitors who, one is to believe, would not have come otherwise), a website displaying available parking spots downtown, and "improved traffic light timing" that shaved 37 seconds off the average commute. None of these numbers screamed huge success. Even the RFP mentioned that the ad revenue from the digital kiosks was much lower than initially projected.⁸ The city's case for success sounded conspicuously modest.

However, the municipality deemed the pilot sufficient enough to "validate the concept" and justify continued investment. A local news article offered a more tempered take and concluded that the smart city was still "more of a promise than a game changer."⁹ Yet this very ambiguity fueled city officials' resolve to expand the pilot. After all, if the ultimate goal was to become "the world's first true smart city,"¹⁰ the current scope of the pilot, they believed, offered little chance of substantial impact. The answer, in their view, was to scale up the pilot. (As discussed in chapter 4, the second phase never got off the ground).

The proposed next phase, similar to the discussions two years previous, turned its attention toward the east side of the city. The plan was to implement a network of sensors, connectivity, and data analytics along Prospect Avenue. The initial ideas were, again, very ambitious.¹¹ Free Wi-Fi, for example, would bridge the digital divide. ShotSpotter technology, which used acoustics sensors, would detect and presumably speed up police response to gunshots. Touchscreen kiosks would display job opportunities. In contrast to the initial pilot, the second phase of the smart city at least mentioned some

keywords that signaled more substantial goals, such as bridging the digital divide, attending to gun violence, and focusing on economic mobility. But it was still trying to solve problems by ostensibly throwing more tech at them, most of it half-baked, if not outright useless.

On the very first day of 2019, while the city was still reviewing the proposals in response to the RFP, *The New York Times* published a feature story about Kansas City, splashing it across the national stage as a test bed for Silicon Valley. Headlined “In High-Tech Cities, No More Potholes, but What About Privacy?,” the article covered the city’s experiences from Google Fiber to the smart city program.¹² Mayor Sly James, Sprint executives, and a chorus of city officials were quoted outlining what Kansas City had done so far and how they planned to extend these interventions to the east side. Their narrative framed the Prospect Corridor as a neighborhood of high crime and vacancy and ripe for a “smart” makeover. A toolbox of technologies was cited in the news, again, as a solution: air quality sensors, water leak detection meters, surveillance cameras, and a gunshot detection system.

A surprising detail in the article, however, was a note of caution from then-city council member Quinton Lucas. Expressing concern about “all the surveillance,” particularly focused on the east side, Lucas asked: “Is this going to accrue to the detriment of young Black men?” He was, at the time, running for mayor. Once *The New York Times* story began to circulate, Lucas amplified the message on his Facebook page: “We welcome Kansas City’s work as a ‘Smart City,’” he remarked. “We also have to make sure we build an equitable and transparent (e.g., competitive bidding) smart city as well.”¹³ As the project was poised for a new expansion and with a mayoral election looming, the stakes got a lot higher. Lucas’s comment pierced the celebratory bubble around smartness in the city. It was a rare public display of skepticism, a call to consider the consequences of this headlong rush.

Just two weeks after the national spotlight on Kansas City’s smart aspirations, a local news story announced the end of the city’s Startup

Village. You may recall the Village from chapter 2, a neighborhood full of civic entrepreneurs who flocked to the area, which was not too far from the Google Fiber showroom, once the company rolled into town. After more than five years of local and national visitors, rotating startups, and many networking events featuring beer and barbecue, the Village was now done. The headline declared, with a touch of spin, that “KC’s Startup Village, a Google Fiber inspiration, is gone. But it wasn’t a failure.”¹⁴ The reporting was a sober review of what the city failed to gain with Fiber (“never did turn the metro into a tech paradise”) and Google’s waning interest in Fiber as a whole. It even quoted a local upholsterer who called out civic entrepreneurs: “What were they actually producing,” he scoffed. “An idea?” A civic leader tried to romanticize the Village as a “laboratory” that gifted the city with a cohort of “entrepreneurial millennials.” Some civic entrepreneurs pointed to a few startups that managed to secure investor dollars, allowing them to graduate to other parts of the city. But the larger momentum, the collective belief in Google Fiber and tech startups as a transformative force, seemed to have dissipated. The Village, like the broader vision it represented, had simply run its course.

As if on cue to underscore the flimsiness of Kansas City’s tech aspirations, Google Fiber announced its swift departure from Louisville, Kentucky, around the same time, in February 2019, leaving behind a trail of frustrated customers and broken promises.¹⁵ The company had been testing what was dubbed “nano-trenching” (or “shallow-trenching”) in Louisville, a cost-cutting initiative that involved burying fiber optic cables in trenches mere inches deep. Predictably, fiber cables kept popping out regularly and sparked numerous complaints.¹⁶ Google offered a mea culpa on its blog, couching the fiasco as a learning experience: “Innovating means learning, and sometimes, unfortunately, you learn by failing,” the company suggested, and announced its plans to “turn off the network” in Louisville.¹⁷

Google Fiber’s decision in Louisville did not directly affect Kansas City. But local frustration with the company’s shaky infrastructure

was already feeding a broader dissatisfaction, especially after a recent winter storm.¹⁸ Fiber subscribers had endured outages for days, and their calls to Google's subcontracted repair crews went unanswered. Even though the company's local manager tried to address residents' complaints, she declined to share basic information about "the number of employees [in the city], the size of the company's fleet, the number of contract crews in place or the number of customers the company has," as local media reported. It became obvious that Google was unprepared to repair and maintain its network in Kansas City.

The Google Fiber debacle, a one-two punch of the Kansas City freeze-out and the Louisville exit, received some critical commentary among Kansas Citians on social media. A local journalist, for instance, lampooned the lofty promises of the city's leaders in the aftermath of Fiber's arrival: "[Local leaders] made it seem like Kansas City would become Jetsons while the rest of the world would remain Flintstones," he quipped. "I'm not sure that happened." City officials and a dwindling band of smart city enthusiasts on social media attempted a feeble defense in response, clinging to the tattered remains of Google Fiber's reputation as a provider of high-speed internet access.

The back-and-forth discussion online soon shifted to the smart city project. One comment mentioned *The New York Times* article from a month earlier: "Probably the most ironic thing is the idea that high-tech cities can prevent potholes, and yet any drive through Kansas City right now would show otherwise." By that point, many residents had given up on the pothole predictor. When the local government quietly ended the program, the public responded with shrugs rather than outrage.¹⁹ One resident, who had praised Google Fiber at the start of the conversation as "an investment to the city that the whole country wanted," was singing a different tune by the end. "Smart cities are overrated," they declared. As I watched this discussion unfold on my screen, it was not clear whether residents finally began to pay attention to the projects or whether they were just voicing criticism more loudly. Either way the public mood seemed to be shifting.

What sped up the smart city project's demise was not the changing public reaction, however. As Mayor James's term approached its end, many members of his administration were about to depart. This included the city manager and the chief innovation officer, who, at the time, was the one-person show running the pilot program at city hall. In June 2019, Quinton Lucas, the former city council member who was vocal about the risks of expanding the smart city pilot, was elected to be the city's next mayor. The following day, the municipality halted the bidding process for the smart city's next phase. Nearly a year after it was first announced, the RFP was dead in the water. The new administration replaced the office of innovation with an "emerging technology board." It was a public acknowledgment that Kansas City was retreating from its aggressive pursuit of smartness.²⁰

Overall, 2019 opened on a high note for Kansas City's smart city pilot with a write-up in *The New York Times* announcing the city's ambitions to expand the project. But it concluded with a blog post penned by the CEO of one of the partner tech companies in the smart city pilot, titled with brutal honesty, "The End of Smart Cities."²¹ The post was an indictment of the entire smart city movement—not necessarily directed at Kansas City. "No one ever really knew what smart cities were, what they included, or what the tangible benefits were," the post read. It was all a hustle, "primarily led by vendors selling solutions in search of problems." The post circulated among the city's smart city enthusiasts, but, again, it sparked no public outcry. I expected that the local government, now under new and skeptical leadership, might respond. Or maybe civic entrepreneurs would come to the defense of smart cities, as they did with the end of the Startup Village or the criticism of Google Fiber. Neither happened.

BETWEEN SUCCESS AND FAILURE

In a podcast appearance in the spring of 2019, a former senior city official offered an account of Kansas City's efforts regarding smartness

in three acts. Act 1: Google Fiber, a high-speed internet infrastructure. Act 2: “Validating” the smart city project by setting up the pilot program. Act 3: “Expanding those benefits throughout the remaining 316 square miles of the city.”²² “I would have really liked to have seen that completed before I left,” he sighed before adding a kicker: “City procurement is its own worst enemy in a lot of cases.” Without skipping a beat, he began to describe his new postgovernment gig: He started a consulting firm that helps cities improve procurement processes, especially as they gear up to partner with tech companies.

At the time, I was no longer living in Kansas City and was mainly following the next steps of the pilot via social media and news alerts. As I listened to the interview, I thought, well, the pilot at least yielded one success story (a new business). It remained unclear, however, whether this ex-official considered Kansas City’s smart city pilot a triumph or a cautionary tale. Given the subsequent meltdown of the bidding process, one might lean towards the latter. Yet to say he thought it was a failure would be inaccurate. There was no admission of defeat and no discussion of wasted resources in his interviews. But beyond this one project, his faith in the smart city remained unshaken, so much so that he set up a whole new consulting firm to help other cities.

This ambiguity over the conclusion of the smart city pilot was common among my interlocutors. Instead of definitive declarations of success or failure, civic entrepreneurs and city officials accounted for the pilot in a liminal space. It was neither a triumph nor a complete disaster. Every report and interview about the smart city initiative instead buzzed with the same explanation: the pilot “validated” the smart city. But what did that mean? Did the local government demonstrate its own ability to pull off a pilot program and consider it a success? Or did city officials and civic entrepreneurs expend four years to validate what tech companies had been developing? Were there any merits to this kind of validation? If yes, what were they? A project that started with no tangible goals, perhaps unsurprisingly, ended with no way to measure success and lent itself to the nebulous zone of “nonfailure.”

The most definitive coda to Kansas City's smart city saga arrived in the late days of 2020, as a contentious presidential election and an ongoing pandemic consumed the nation's attention. Cisco, the tech giant that led the smart city pilot, unceremoniously announced the shuttering of its entire smart city product line worldwide.²³ This news, I thought, would have sparked a public soul-searching, a reckoning with the city's ambitious, and ultimately unfulfilled, foray into test-bed urbanism. But much like the previous year's muted response to the pilot's setbacks, Cisco's news did not elicit much interest. Local news outlets remained silent, and the city government offered no official updates.

Stepping into the void once more were former and current city officials, along with civic entrepreneurs, taking to social media to weigh in on the smart city. One former city official shared Cisco's news and added a thread of reflections, starting with praising the importance of partnering with big tech companies. "Unless you have a specific purpose and an operational agency for counting things in the right-of-way," they suggested, "it is hard to get value from [the smart city]." Another city official chimed in, highlighting the need for a "driving force, a real answer to the question 'Why?'"—an answer powerful enough to compel active management." One civic entrepreneur celebrated the pilot for being a "real push to explore the untapped potential" in the local government's public assets. Another emphasized the need to align the industry's intentions with city priorities and capacity. A city official praised the initiative for propelling city hall "farther and faster into using data" but gave no concrete examples.

I appreciated that a few commenters gestured toward what might have been, offering some rough analysis. But these were not the hard-learned lessons from a comprehensive postmortem. Nor did they have the dramatic flourish of the blog post from a year ago, the one that pronounced the end of smart cities. The desultory exchange on social media shied away from assigning responsibility, identifying specific failures, or acknowledging lost opportunities. The new

administration in the mayor's office was no different. Policy documents described the previous administration's smart city pilot as a "success," as if simply getting the pilot off the ground was enough. But they failed to acknowledge that the expansion plans had fallen through.²⁴ None of the current or former city officials would go as far as celebrating the successes of the smart city pilot. Tangible outcomes were conspicuously absent, but the F-word was still not mentioned.

The persistent avoidance of calling out failures or reckoning with the project's aftermath contrasted starkly with the early days of the pilot. I recall city officials being very candid about the early hiccups, such as the technical hurdles, the breakdowns, and even the internal resistance at city hall. Stumbling is par for the course in public experiments. Plus, failure carries a certain cachet in the tech industry, as a mark of risk-taking and commitment to perpetual reinvention.²⁵ While the price of failure is steeper in government than in Silicon Valley, there was still some transparency about the pilot's glitches and shortcomings, both prelaunch and in the immediate aftermath.²⁶ The city's chief innovation officer liked to remark that they had failed a bunch of times, but they had also learned from those failures.

Anthropologist Catherine Alexander argues that open-ended public experiments in science and technology enable the "suspension of absolute failure" as a series of breakdowns are constantly recalibrated by different stakeholders.²⁷ Bruno Latour's classic book, *Aramis, or the Love of Technology*, similarly investigates the downfall of an experimental design and research project for a rapid personal transit system (RPT) and comes up with several contradictory explanations to explain why the initiative ended up as a defunct piece of machinery.²⁸ While it may be easier to deal with the missteps or mistakes of experimental projects in anticipation of an eventual success, it is much harder to parse out how and why failure happens if such projects do not conclude as expected. This may help explain the city officials' initial transparency about the pilot's shortcomings and their subsequent silence as the project drifted away. But how to explain their stubborn refusal to call the pilot a failed attempt at smartness?

Anthropologist Gökçe Günel, who researched Abu Dhabi's Masdar City, finds her interlocutors in a similarly confused state regarding the project's success or failure.²⁹ As they developed and lived with experimental clean technology infrastructures, they keep talking about the "potentiality" of the project rather than settling on a definitive conclusion. This space of possibility, she argues, allows the project's stakeholders to make peace with the uncertainty inherent in such initiatives. Günel then takes up this potential and examines how the project's stakeholders negotiate or manipulate it, thereby exposing the material and conceptual incompleteness that characterizes public experiments in science and technology. Her analysis spotlights the presences ("potentiality") that made it possible to litigate the success or failure of such projects.

I suggest that the absences matter just as much. In Kansas City's case, it was not the presence of potential, but the absence of a public scandal, that helped the stakeholders craft this in-between space of nonfailure. Consider how a former city official described the smart city pilot, long after he left government, first for a job at a tech company and then to lead an innovation office in another city: "I would love to tell everybody that we were just super smart, and we were able to figure all this stuff out that we got done," he quipped with a wry chuckle. "The reality is, we were really, really lucky and had some very fortunate mistakes that we were able to capitalize on."³⁰ This sentiment resonated at a public forum, where another ex-official, dispensing advice on smart cities, emphasized "avoid(ing) something really bad happening" when testing out smart programs. In these accounts, failure is not merely a missed target; it is a spectacle demanding derision and scrutiny. "Fortunate" mistakes do not pile up to become failures; but "something really bad" could spell a messy public unraveling.

The smart city pilot was not a failure because it managed to avoid a public scandal that might have exposed the municipality and other stakeholders to local and national media. I similarly recall what a former city official suggested in an interview, shortly after the pilot

agreement was signed: “The biggest fear I have is that I don’t want to be the case study that we go back to and say, ‘Oh, don’t do what Kansas City did.’”³¹ As long as the pilot’s shortcomings remained under the radar, its quiet fizzle as a nonevent for outsiders, city officials believed they could avoid the F-word. In the absence of a public scandal that would turn the city into a cautionary tale, the local government was able to cling to the narrative of a nonfailure. In this skewed definition, the mere existence of a smart city pilot was the sole metric for success.

THE TEST BED AS A NONFAILURE ZONE

Smart city enthusiasts in Kansas City of course had a vested interest in not admitting failures. “[U]nlike success, which tends to promote celebration, complacency, and passivity,” argues Arjun Appadurai, “failure invariably provokes puzzlement, diagnosis, and the search for a remedy.”³² And those were exactly what city officials, tech companies, and even civic entrepreneurs wanted to avoid. A public record of the oversights, bureaucratic inertia, and squandered resources would have invited unwelcome scrutiny and consequences for those responsible. A narrative of nonfailure instead left all the stakeholders of the pilot off the hook.

This aversion to failure is particularly pronounced within public institutions, whose access to funds depends on projecting a steady competence. Unlike tech firms, local governments cannot pivot freely. They cannot turn failure into a kind of mythical origin story, in which mistakes become proof of risk-taking and lead to eventual triumphs. A failed pilot project could jeopardize eligibility for the next federal grant, the next public-private partnership, or the next public experiment with a tech company. Stepping away untainted from a pilot project, or at least staying in the nonfailure zone, becomes a form of institutional self-preservation. It is almost a precondition for local governments to keep trying new ideas in public spaces.

It is important to note, however, that nonfailure was not simply a communication success. The lack of a disastrous scandal or mistake is built into the very design of smart city pilots. Through the framing of experimentation, city officials and even tech companies can carefully calibrate the scale of work-in-progress technologies, such as sensors, cameras, kiosks, or even public Wi-Fi, to make sure the inevitable failures do not escalate into full-blown public scandals. Scholars argue that scale and techno-optimism often work in lock-step to shape a seductive narrative of success.³³ Or as anthropologist Nick Seaver aptly puts it, for tech start-ups, “scale is not a matter of size—it is a kind of promise.”³⁴ In smart city pilots, the scale also allows for keeping smart technologies, which are almost always a work-in-progress, on a manageable level that allows for everyday glitches but prevents public failures.

Tech companies like Cisco or Google prefer to roll out a pilot program in multiple cities but at controlled scales—instead of testing their software or hardware across an entire city. A local municipality finds it safer to launch multiple smart initiatives and demos in different neighborhoods instead of a citywide initiative, which would require a longer review process and a more political discussion. By constantly manipulating the scale for these fledgling, and often poorly developed, smart programs, city officials, tech companies, and even civic entrepreneurs manage to stay in that liminal space between success and failure. As long as mistakes, risks, and oversights remain small enough to avoid a public meltdown, the F-word is easily avoided.

This, in turn, perpetuates a self-reinforcing cycle: Cities and tech companies could churn out a steady stream of “successful” pilots—that is, they do not publicly fail while they extract money and positive press.³⁵ The mere launch of sensors or cameras easily morph into the sole measure of success, leaving actual outcomes as an afterthought. Wrapped in the convenient language of tests, labs, or experiments, such projects achieve the deflection of public scrutiny, at least for a while. Only when the pilot gets scaled up and its flaws

become evident to local publics does it become a problem. Then the initiative is conveniently shelved until the next pilot of another half-developed prototype comes along. Smart cities are sustained, not undermined, by their nonfailures.

CONCLUSION

In the fall of 2022, a Kansas City resident tagged the city's 311 account on social media to complain about the digital kiosks downtown. "These smart city media kiosks along the streetcar route are in terrible shape," the note began. "Some don't work, others have screen display issues, and they are all rusting out. It's not a good look for the city. They need to be removed and give some sidewalk space back to pedestrians." Another resident immediately replied, "I can't remember the last time I saw one that works." By that point, the kiosks no longer signified the smart city. They had faded into the urban infrastructure as just another piece of municipal hardware. Still, I was not used to seeing such pointed and public criticism of the pilot in Kansas City.

Yet the rusted frames of digital kiosks, abandoned and decaying, called attention to themselves in a way other traces of the smart city pilot did not. The dead sensors on streetlights and the reappropriated cameras were not as visible in the everyday life of a city. The kiosks, by contrast, offered a perverse comfort for critics of test-bed urbanism: a visible relic of a once-optimistic urban future that had quietly nonfailed. They spoke to the realities of technological promises, not through smooth, seamless operations, but through glitches and decay. They insisted on the failures and actual operations of technology.³⁶ And perhaps for city officials, they served as a non-functioning but still-present artifact that required no real reckoning.

But this visibility—this perverse comfort—does not translate into a deeper confrontation with broader questions of what cities gain (or lose) while they embrace public experiments with smart technologies. As remnants of a pilot project, they linger in civic life without

truly challenging the larger narrative of test-bed urbanism. They help sustain an account that avoids naming failures and engaging with the moral and legal consequences of rolling out half-developed technologies on the ground.

This willful distancing becomes even more critical considering how many half-developed prototypes and how much software are quietly adopted by public agencies, then folded away without a whisper about their impact (or lack thereof) on local governance. Combined with the revolving door of public service, there is a systematic loss of institutional memory. No one remembers the lessons from these flops. The cycle repeats, and the city moves on, as if the failures never happen at all.

Conclusion

“This thing is very nebulous in some ways, but then at the same time it is very concrete. The plan is to implement 171 streetlights, hang 122 cameras, get all the analytics functioning, and get twenty-five kiosks installed by X day. I can show you what my timeline and dependencies and stuff are,” Ray said, and paused before adding, “but that’s not necessarily what you’re asking for.”¹ Ray was a key figure in the smart city pilot. He oversaw the construction project, shuttled between vendors and municipal agencies, mediated conflicts, and kept the project on track. I saw him at every meeting about the pilot, always standing slightly off to the side and quietly taking notes. When I finally spoke with him one-on-one, I asked him what he thought the city hoped to do with smart technologies. The question, Ray said, landed in a “gray zone.” It was too ambiguous to pin down, too dependent on whom I asked. “If you want to talk philosophically, I’m all ears.” “But,” he added, “I’m going to do it off the clock because what I have to do is to get this thing done. I don’t need policy questions; I just need to get it done.”

He was not being dismissive; he was being realistic. Ray's job was to meet deadlines and oversee crews, not define meaning. But that split between logistics and purpose captures a central tension at the heart of Kansas City's pilot and this book. The smart city was both nebulous and concrete, driven by tangible deadlines but adrift when it came to intention. City officials, civic entrepreneurs, and tech executives all spoke with a sense of urgency, as if the success of the smart city depended on launching it alone. Conversations fixated on the number of sensors downtown or the Wi-Fi coverage area, leaving aside the more basic question: To what end?

What does it take to bring the tech industry's pipe dreams down to earth? In this book, I used Kansas City's experience with the smart city to better understand the politics of test-bed urbanism, in which urban spaces transform into experimental zones for half-formed technologies. I have argued that the answer lies not just in technical capacity or corporate power but in local decisions, structural constraints, and civic desires. The dominant narratives of technoutopianism or corporate overreach miss something crucial: how smartness is taken up, negotiated, and reinterpreted on the ground.

When I arrived in Kansas City in 2015, what I found was not blind faith in innovation but a pragmatic grasp of opportunity. City officials and civic entrepreneurs often referred to failing infrastructures, disinvested neighborhoods, and a desire to connect parts of the city long ignored. Smartness became a kind of civic shortcut: a flexible, underdefined concept that allowed different stakeholders to project their own goals onto it. The companies brought work-in-progress technologies and offered cities a chance at trying something new while taking their histories of neglect and desire for connection seriously.

It also helped that smartness never cohered into a singular promise. It was not a "charisma machine."² Even within the tech industry, the smart city was mostly a vague, shape-shifting concept cobbled together from a set of digital tools already in circulation: sensor networks, cloud computing, and big data analytics. This was an

in-between era, post-Web 2.0, pre-AI. The prevailing proposition was to bring data out of the ethereal internet and into the street. Cities emerged as both an ideal site and scale for layering traffic lights, utility poles, or buses with surveillance apparatuses and seeing what value might accrue. If nothing else, the smart city gave the tech industry a rationale to bind public institutions, such as transit agencies, utility companies, or school districts, to proprietary cloud platforms and justify building new data centers. Beyond that, no one could quite say what the smart city was or what it was supposed to do.

Despite the uncertainty, city officials, nonprofits, civic-minded local entrepreneurs, and even universities eagerly signed on. Though it was the peak of Silicon Valley's symbolic capital, this civic enthusiasm was not just ideological, it was also structural. Stretched thin after the 2008 financial crisis, public institutions were searching for new lifelines. The tech industry remained one of the few expanding sectors of the economy. In Kansas City and elsewhere, young, entrepreneurial residents spoke of the smart city as a burst of civic possibility, a chance to turn their hometown into a startup. For municipal agencies and nonprofits long constrained by budget cuts, bureaucratic inertia, and intensifying political divides, the technocratic promise of data-driven experimentation was hard to resist.

As more traditional policy solutions stalled or lost support, the smart city also promised a new workaround to optimize services, automate inefficiencies, and discover unexpected ideas, all without having to reopen the long-standing battles over public investment, taxation, or equity. Think about the distinction between expanding public transportation and piloting autonomous vehicles to overcome spatial divides in the city. The former requires debates about redistribution and consensus building, the latter, only a willing vendor. Public officials and civic leaders wanted to believe that the smart city might do what traditional policy no longer could.

Still these exuberant yet slightly vague visions did not translate into deeper questions on the ground, the ones Ray called "philosophical," as the smart city pilot rolled out. To the contrary, city

officials and civic entrepreneurs embraced their ignorance about what smart technologies might actually achieve once installed. They also willfully set aside what they already knew about their own hometown. The motivation was to render the city a blank canvas for experimentation and let computational methods drive the discovery rather than to rely on lived experience. But for all their faith in test-bed urbanism sidestepping traditional politics, they still had to reckon with the very constraints they thought they could overcome.

Smart city enthusiasts hoped that the new streams of data would illuminate hidden truths about the city. But the disjointed numbers from the pilot were too sparse and inconsistent to power the machine-learning models they had planned to use. And even if they were able to build something technically legible, it still had to be politically safe and actionable. When Kansas City finally achieved all three goals and launched the pothole predictor, the result was underwhelming. Predictive local governance ended up confirming the obvious, not anticipating the unknown.

Beyond a patchwork of smart technologies assembled for public display, there was not much impact to document by the end of various smart initiatives in Kansas City. Digital inclusion advocates, who had tried to seize the city's smart momentum, found themselves returning to the same work they had been doing long before. Residents in public housing, skeptical of the free gigabit internet they had not asked for, were left with unmet needs and a missed chance at more urgent investments. When the buzz faded, the civic entrepreneurs moved on. The city officials who had championed the project transitioned to new jobs, buoyed by their association with Kansas City's brief moment in the tech spotlight.

For some critics, this was all too predictable. The pilot was the quintessential example of what Thomas Frank once called "Cupcake Land": cities that brand themselves into relevance, prize aesthetics over substance, and cultivate a civic culture in which people expect their hometown to be perpetually brand new.³ In its twenty-first-century form, cupcakes arrive by drone and each click produces a

monetizable data trail. Hosting experimental tech becomes a new form of urban boosterism meant to signal inclusion and renewal, but rarely delivering either. In Kansas City, smartness did not improve urban infrastructure, nor did it close racial or spatial divides.

Today the branding has faded. The smart city is more associated with surveillance and stalled pilots than connectivity and innovation. But if we do what my interlocutors consistently avoided and call smartness a failure, we miss the point. As urban divides, fictions, and frictions persist, those disparities are likely to animate the next search for promising technocratic solutions. The hunt for high-tech fixes continues precisely because cities remain deeply unequal. Whether branded as AI, a digital twin, or the quantum city, the next wave of experimentation will likely follow those same fault lines.

In the meantime, many glitchy tools and techniques of the smart city are now quietly institutionalized in local governance. Sensors, cameras, dashboards, and data analytics remain embedded in various municipal operations. Tech companies continue to assume quasi-public roles. Algorithmic systems assign students to schools, dictate the order of fire inspections, or distribute welfare benefits. Occasionally, public scandals expose the discriminatory effects of these systems, even when they are concealed behind proprietary software.⁴ But more often municipalities press forward with tools they struggle to fully grasp or control.

By tracing these efforts from inside city hall, vendor presentations, public housing complexes, and pilot project spreadsheets, this book has offered a method for seeing how test-bed urbanism works: messily, unevenly, and through political choices we have yet to acknowledge. It is at the intersection between the scripts of smart technologies and the lived experiences of residents and city officials that we can begin to understand the consequences of trying to build smart cities. While it is hard to know where the smart city is headed, we can at least identify some of the enduring shifts and plan what we should do differently next time.

FROM TEST BED TO TEMPLATE

Looking back on Kansas City's pilot and other cases of test-bed urbanism since 2015, a few broader shifts come into focus. For one, the smart city's supposed insulation from privacy concerns obfuscated a more consequential shift from privacy to privatization. For years, proponents insisted these systems relied on environmental data, not personal information. While the distinction was shaky, it was rhetorically useful. But the real stakes in the smart city were not only about what data were collected. They were also about who owned data infrastructures, who profited from their operations, and who controlled the terms of local governance once digital infrastructures became a condition of access to public services and municipal decision-making. I recall city officials and civic entrepreneurs expressing relief that privacy was not a concern, but they seldom paused to consider what that reassurance was obscuring.

The smart city is a structural transformation that solidifies the role of tech companies as intermediaries in local governance. Through smartness, tech firms, small and large, seek to embed themselves in public infrastructures and capture value at every step.⁵ They do not just digitize bureaucracy or streamline city services; they monetize each interaction between residents and the state. Take PayIt, a Kansas City–founded platform that facilitates payments for parking tickets, utility bills, and court fees. Every transaction generates revenue for the city and a cut for the company. This is not mere privatization in the traditional sense of outsourcing public services. These proprietary layers, built atop public infrastructure, continually recast civic life as a stream of data assets. Everyday activities such as paying a bill or accessing transit are transformed into data that are measurable, extractable, and profitable.

To be clear, the shift I have described from privacy to privatization does not mean that surveillance concerns were unfounded or irrelevant. On the contrary, the most profitable and durable applications of smart technologies have not been in optimizing municipal services

or making city hall run like a tech startup. They have been in policing, surveillance, and border enforcement. From predictive policing software to license plate readers, from facial recognition systems to biometric databases, the security state has been further localized thanks to smart technologies.⁶ Consider ShotSpotter, whose audio sensors purport to detect gunfire in real time. The company's data have been widely criticized for inaccuracy and bias, not to mention for overpolicing working-class communities of color in cities.⁷ Or take San Diego where smart streetlights originally marketed as tools for efficiency and innovation were later rerouted to police departments as surveillance infrastructure. What failed as public service returned as so-called public safety.⁸

As the heavy-handed version of smartness has come into view, the idealism of the civic tech moment has dimmed. The dashboards once designed to democratize urban governance have gone out of fashion. In their place are seamless apps, smoother payment systems, and quieter forms of classification. City officials say residents want municipal services to operate like Amazon Prime—that is, fast, slick, and frictionless. But behind the interface lie the same neglected infrastructures, the same bureaucratic bottlenecks, and the same underfunded institutions. The early smart city at least pretended to believe in liberal ideals such as transparency, participation, even fairness. Today's version includes fewer promises, cleaner tools, and a business model that finally knows what it is selling.

How do we respond to these challenges? There are two points worth emphasizing. First, we must push back against the idea that municipalities and local publics are powerless against tech companies. In recent years, several cities have walked away from partnerships or canceled tech contracts after audits and civic pressure revealed public funds were spent on flawed or harmful prototypes.⁹ Local governments can ask harder questions before rushing into contracts. They can enact regulation. And they can absolutely say no.

Second, any new tech or data initiative in local government must be evaluated not just on what it promises to optimize but on the

lived experiences and harms it may reproduce.¹⁰ Emerging technologies that promise precision often encode neglect. That is particularly pertinent with smartness, whose market incentives and ideological promise rely on leveraging the city's deep-rooted divides. The smart city thrives on urban inequalities, not as an unintended consequence, but as a structural feature. Unless cities interrogate the tech industry's promise to fix those divides, these interventions will only reinforce them, while maintaining the appearance of efficiency and progress.

The real question is not whether new technologies can solve the problems cities face but how they alter our understanding of what problems are worth solving, for whom, and with what consequences. The smart city worked, at least for a while, because it offered civic entrepreneurs and public officials a seductive frame for reimagining local governance amid political dysfunction and infrastructural decay. But the path to more equitable cities does not begin with smart tools or even data. It begins with stronger commitments to public investment, democratic accountability, and political imagination.

Notes

INTRODUCTION

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CHAPTER 1. BECOMING A TEST BED

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CHAPTER 2. TECHNOCRACY ON A HILL

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CHAPTER 3. THE IGNORANT CITY

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CHAPTER 4. (DIS)CONNECTING THE SMART CITY

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Index

- Abu Dhabi, Masdar City in, 141
actionable intelligence, 110
Aggarwala, Rohit, 77
AI. *See* artificial intelligence
Alexander, Catherine, 140
algorithmic systems, 150
Alphabet, Sidewalk Labs by, 6, 56
Amazon Prime, 152
American Midwest, 4
Appadurai, Arjun, 142
Apple, 101
application, for Google Fiber, 28, 29
Aramis, or the Love of Technology
 (Latour), 140
artificial intelligence (AI), 121, 122, 149,
 150
autonomous vehicles, 106; mobility solu-
 tion of, 63–64, 74; public buses com-
 pared to, 148; unknowing about, 74

Baltimore, CitiStat in, 25
Barreth, Ben, 44
Bay Area (San Francisco, California), 9
bias: of bus drivers, 63; class, 34

Bistate Innovation Team, 30–31
Black community, 86, 105
Black cultural producers, 91
Black Lives Matter, 85, 107
Black men, surveillance of, 134
Black Silicon Valley, 103, 104
Black women, in public housing, 96
Bloomberg Philanthropies, 47
Broussard, Meredith, 47
Browne, Simone, 174n37
budgets, pothole predictor savings for, 124
Burrell, Jenna, 157n19
bus drivers, bias of, 63
buses, public, 63, 74; autonomous
 vehicles compared to, 148; first
 principles thinking reinventing, 78;
 to Sprint Accelerator, 102

Castro, Julian, 100
CDP. *See* Connected Digital Platform
Census Bureau, US, 126
Chambers, John, 7
Chromebooks, 94
Chun, Wendy, 79

- Cisco, 9, 72, 139; Chambers on, 7; on civic entrepreneurialism, 39; civic entrepreneurs and, 39, 52, 55; Kansas City Council working with, 38, 53; Overland Park office of, 50; project scales of, 143; "Smart + Connected Communities" platform of, 1–2, 38, 51; on streetcar line, 52–53; UMKC meeting about, 69; unknowing embraced by, 73. *See also* Connected Digital Platform
- "Cisco IoT Operations Dashboard," 51
- "Cisco Kinetic for Cities," 51
- Cities Technology Center (Dublin, Ireland), 7
- CitiStat, in Baltimore, 25
- city ad revenue, 178n8
- city officials, 46, 139; CDP misunderstanding of, 68; at civic entrepreneur gatherings, 59; ignorance of, 148–49; in innovation offices, 47; local entrepreneurs working with, 60, 163n3; non-knowledge of, 66, 70, 71; in public-private partnerships, 157n19; on smart streetlight sensors, 71; unknowing embraced by, 74
- city problems: data solving, 110, 128–29; first principles thinking for, 77, 78–79; ignorance about, 80–81, 82; with parking, 76; pothole predictor side-stepping, 124–25; of public health, 78; search for, 76–77
- city procurement consulting firm, tech companies working with, 138
- civic aspirations, 22
- civic boosterism, 47, 49
- civic entrepreneurialism, 14–15, 46, 60; Cisco and Sprint on, 39; through data capitalism, 54; James fostering, 51–52; technological terroir of, 42; "Urban Momentum" gathering for, 40–41
- civic entrepreneurs, 46, 139; Cisco and, 39, 52, 55; conservatism opposed by, 45; Digital Inclusion Coalition mimicking, 87; gatherings of, 40, 41, 57–58, 59; Gigabit City Summit organized by, 73; ignorance of, 149; public-private partnership engagement of, 39–40; in Startup Village, 43–44, 44*fig.*, 45; tech entrepreneurs compared to, 56–57; unknowing embraced by, 73
- Civic Entrepreneurship* (Leadbeater and Goss) (1998), 163n3
- class: bias, 34; inequalities, 15, 17
- Cleaver, Emanuel, 33
- cloud infrastructures, 8
- coding camps for underprivileged kids, tech entrepreneurs on, 62–63
- color-blindness myth, in Silicon Valley, 81
- Columbus (Ohio), 131
- computer labs, of ConnectHome, 94, 95, 96, 98–99
- computer maintenance training, 94
- Connected Digital Platform (CDP), 115; data analytics misunderstanding about, 68; non-knowledge about, 67–69; normalization performed by, 67; UMKC meeting about, 69
- ConnectHome, 106; computer labs of, 94, 95, 96, 98–99; Google Fiber partnering with, 92–93, 97*fig.*, 98–99; non-profits on, 100; for public housing, 92, 97*fig.*, 100; surveillance concerns with, 98–99; transparency challenges with, 95; Wayne Miner Court sign-up event for, 92–94
- Connecting for Good, 102
- connectivity, 16, 84, 102, 147
- conservatism, civic entrepreneurs opposing, 45
- corporate overreach, 147
- coworking space, Lucile H. Bluford Public Library compared to, 88
- Crossroads Arts District (Kansas City), 18, 19, 28, 61
- "Cupcake Land," 149–50
- Daniels, Jessie, 81
- dashboard, 115, 117, 117*fig.*, 152; innovation officer on, 112–14, 116; popularity of, 176n7; Smart City Advisory Board on, 112–14; SmartKCMO, 122–23, 126
- data: city problems solved with, 110, 128–29; dashboard for, 112–14; dependency, 8; extraction, 7; of living labs, 58; mayor's office on, 68; normalization of, 67; for predictive models, 119–20;

- public works driven by, 124; social divides reflected in, 108; telecom company withholding, 71; utilization of, 112
- data analytics, 7–8, 16; CDP misunderstanding about, 68; pattern identification in, 118; traffic plan from, 120
- data capitalism, 8–9, 54
- data collection: of Cisco, 69; on parking, 113–14
- DataKC team, 115
- Data Lake, KCMO, 116, 117*fig.*
- Data-Smart City Solutions initiative, of Harvard University, 127
- “Demo Day,” 57
- Department of Housing and Urban Development, US, 9; grant from, 131, 133; mistrust of, 96. *See also* ConnectHome
- Department of Transportation, US (USDOT): grant from, 9; “smart city challenge” of, 83
- design workshop, 65*fig.*
- digital divide, 85; illusion of, 98; segregation maintained through, 101, 103; smart city second phase on, 133–34; along Troost Avenue, 91–92, 100; working-class communities of color and, 91
- digital equity. *See* digital inclusion
- Digital Equity Act, internet access highlighted by, 126
- Digital Equity Map: on internet access, 126; KCDI discussing, 126–27
- Digital Equity Strategic Plan, Kansas City Council adopting, 90
- digital inclusion: critiques of, 100; Google Fiber’s efforts at, 35; ignorance around, 101; loop of, 86–92; racist framing of, 86; working-class communities of color regarding, 90. *See also* Kansas City Coalition for Digital Inclusion
- Digital Inclusion Coalition, 16, 87
- Digital Inclusion Facebook group, 87
- digital redlining, of Google Fiber, 31–35, 38–39, 85, 89
- digital Rust Belt, 9–10
- discrimination scandals, 150
- diversity, 80, 105
- Dixon, Veewiser, 103, 104
- driverless vehicles. *See* autonomous vehicles
- economic development, of Florida, 28–29
- economic mobility, connectivity relationship with, 102
- education, efficiency, employment, and enforcement (“4E” policy agenda), 121
- Emerging Technology Advisory Board (Kansas City), 180n24
- “The End of Smart Cities” (blog post), 137
- energy efficiency, 7
- Enterprise Village, Dixon on, 104
- entertainment district, 23–24
- entrepreneurial citizenship, 164n8
- epistemological asymmetries, 15
- equitable cities, 153
- ethnographic field work (Kansas City), 9, 11, 13*map.*
- Facebook: Digital Inclusion group on, 87; Lucas on, 134, 179n13; “Our United City” page on, 107
- Federal Communications Commission (FCC), 20, 126
- Ferguson, Missouri, 85
- financial crisis of 2008, 24, 36, 43, 148
- first principles thinking: for city problems, 77, 78–79; of Silicon Valley, 77–78
- Florida, economic development plan of, 28–29
- “4E” policy agenda. *See* education, efficiency, employment, and enforcement
- Fourcade, Marion, 121–22
- Frank, Thomas, 149
- Full Employment Council, 119
- funding: government, 6; for innovation offices, 48; for minority incubators, 104–5
- Gandy, Oscar, Jr., 110
- Geoghegan, Bernard, 65
- Gigabit Challenge, 30
- Gigabit City Summit (2016), 73
- gigabit internet, 20
- Global Entrepreneurship Week, 1–2
- goals, smart city, 146

- “GO KC” (infrastructure initiative), 123–24
- Google, project scales of, 143
- Google Cardboards, with VR, 93–94, 173n26
- Google Fiber, 16, 74; billboard, 19, 19fig.; ConnectHome partnering with, 92–93, 97fig., 98–99; digital inclusion efforts of, 35; digital redlining of, 31–35, 38–39, 85, 89; grassroots support of, 27–28, 29, 32–33; internet access study by, 90–91; Kansas City chosen by, 9, 14, 19–31, 36–37; *The Kansas City Star* on, 24; in KCK and KCMO, 22, 25; “KC’s Startup Village, a Google Fiber inspiration, is gone. But it wasn’t a failure” on, 135; LinkNYC initiative of, 34; in Louisville, 135, 136; media coverage of, 23; *The New York Times* on, 20, 134; power asymmetry of, 27; segregation reproduced by, 35; showroom, 43; sociology of, 37; surveillance concerns about, 98–99
- Google Fiber Space, 31–32
- Google KC, 28, 29, 30, 32
- Goss, Sue, 163n3
- government funding, 6
- grants: from US Department of Housing and Urban Development, 131, 133; from USDOT, 9
- grassroots support, of Google Fiber, 27–28, 29, 32–33
- Great Recession. *See* financial crisis of 2008
- Günel, Gökçe, 141
- gun violence, gunshot detection system for, 133, 134, 152
- Halegoua, Germaine: on Google Fiber, 32, 34; on internet access, 91
- Halpern, Orit, 21, 65
- Haraway, Donna, 74
- Harvard University: Data-Smart City Solutions initiative of, 127; Summit on Data-Smart Government at, 115
- Homes for Hackers, 44
- Hughes, Cayce, 96
- IBM. *See* International Business Machines Corporation
- ignorance, 167n3; of city officials, 148–49; about city problems, 80–81, 82; of civic entrepreneurs, 149; deliberate, 74, 75–79, 81, 85; around digital inclusion, 101; of first principles thinking, 77, 78–79; hopeful, 79; privilege of, 80–81; public-private partnerships characterized by, 74; Sedgwick on, 168n4; of smart city enthusiasts, 15–16, 66, 75–76
- “I’m a young, Black Kansas Citian planning to move—KC, why should I stay?” (Williams), 105–6
- inequalities, 60, 79; class, 15, 17; deliberate ignorance of, 81; reproduction of, 152–53; technocratic solutions to, 150. *See also* racial inequalities
- information technology director (IT director), 111
- infrastructure, 147; cloud, 8; data capitalism using, 54; “GO KC” initiative for, 123–24; old and new, 52–54; privatization of, 26, 151; for Sprint, 55; urban, 15, 155n7
- “In High-Tech Cities, No More Potholes, but What About Privacy?” (*The New York Times*), 134
- innovation officers, 48, 50; on Cisco’s data collection, 69; on dashboard, 112–14, 116; on data analytics, 118; privacy risks addressed by, 49
- innovation offices: city officials in, 47; Emerging Technology Advisory Board replacing, 180n24; funding for, 48; of local governments, 46–50; neoliberalism of, 50; public-private partnerships facilitated by, 49; on traffic plan, 120
- “Innovation Workshop,” 57
- institutional memory loss, nonfailure accompanied by, 145
- International Business Machines Corporation (IBM), 7, 56
- internet access: Digital Equity Map on, 126; Google Fiber’s study on, 90–91; Halegoua on, 91
- iPhone, 75
- Irani, Lilly, 164n8
- IT director. *See* information technology director

- Jackson, Shannon, 26
- James, Sylvester (Sly), 134; ambiguity embraced by, 72; civic entrepreneurialism fostered by, 51–52; “4E” policy agenda of, 121; *The Kansas City Star* on, 25; KCMO mayor, 24–25, 49, 51–52; *Our Divided City* response of, 106; term end of, 137
- Kansas City (US). *See specific topics*
- Kansas City, Kansas (KCK), 22, 25
- Kansas City, Missouri (KCMO): Data Lake, 116, 117*fig.*; Google Fiber in, 22, 25; James mayor of, 24–25, 49, 51–52; operationalization, 119*fig.*
- Kansas City Coalition for Digital Inclusion (KCDI), 91, 100–101, 103; ConnectHome support of, 95, 99; Digital Equity Map discussed by, 126–27; Digital Equity Strategic Plan initiative of, 90; National Digital Inclusion Alliance acknowledging, 88; non-profits networking through, 89
- Kansas City Council: Cisco working with, 38, 53; Digital Equity Strategic Plan adopted by, 90
- Kansas City Police Department (KCPD), 105; IT director of, 111; vacant building and crime input of, 127–28
- Kansas City Power & Light (KCP&L), 23
- Kansas City Royals, World Series Championship won by, 19
- The Kansas City Star*: on Dixon, 104; on Google Fiber, 24; on James, 25
- Kansas City Streetcar Authority, 112
- Kauffman Foundation, 30, 105
- KCDI. *See* Kansas City Coalition for Digital Inclusion
- KCGigIdeas.com, 30
- KCK. *See* Kansas City, Kansas
- KCMO. *See* Kansas City, Missouri
- KCPD. *See* Kansas City Police Department
- KCP&L. *See* Kansas City Power & Light
- “KC’s Startup Village, a Google Fiber inspiration, is gone. But it wasn’t a failure” (Montgomery), 135
- “Kinetic for Cities.” *See* Connected Digital Platform
- kiosks, digital, 133, 180*n*24; complaints about, 144; relics of, 144–45
- knowledge, subaltern, 70
- knowledge gaps and voids. *See* non-knowledge
- Latour, Bruno, 140
- Leadbeater, Charles, 163*n*3
- LinkNYC, Google Fiber initiative of, 34
- Linwood Presbyterian Church, Connecting for Good in, 102
- living labs, 38; data as part of, 58; public-private partnerships for, 56, 58
- Lo, Kevin, 32
- local entrepreneurs, 54–59, 60, 163*n*3
- local governments: army compared to, 120–21; innovation offices of, 46–50; nonfailure in, 142; tech companies’ relationship with, 56, 151, 152; technoutopianism of, 47
- Louisville (Kentucky), 135, 136
- Lucas, Quinton: on Facebook, 134, 179*n*13; mayoral election of, 137; on surveillance, 134
- Lucile H. Bluford Public Library, 86, 88
- Mac computers, 101
- machine-learning, 121, 122, 149, 150
- Masdar City (Abu Dhabi), 141
- mayor, 128; on ambiguity, 72; James serving as, 24–25, 49, 51–52; Lucas elected as, 137
- mayor’s office: on data, 68; new administration in, 139–40; RFP issued by, 133; Smart + Connected Communities partnerships with, 1–2
- media coverage, of Google Fiber, 23
- Medin, Milo, 26
- Merlo, Rachel, 95
- Messeri, Lisa, 41–42
- methods, 14; of ethnographic field work, 9, 11, 13*map.*; positionality and, 12
- Mildred’s (Kansas City coffee shop), 46
- minority incubators, funding for, 104–5
- mistrust: of ConnectHome, 99; in public housing, 96, 99, 149; of US Department of Housing and Urban Development, 96
- Mitchell, Robert, 21, 65

- mobility: autonomous vehicle solution for, 63–64, 74; different interpretations of, 118–19; divide, 120; economic, 102; “Smart City Kick-Off Workshop” discussion on, 62–64; unknowing about, 74
- municipal austerity, 36
- municipal decision-making, predictive models for, 111
- municipal departments, divides between, 116, 121
- Musk, Elon, 77
- “nano-trenching,” of Google Fiber, 135
- National Digital Inclusion Alliance, KCDI acknowledged by, 88
- Negroponte, Nicholas, 21
- neoliberalism, 4, 36, 50
- New Urban Mechanics (Boston, Massachusetts), 47
- New York City (New York), 34
- The New York Times*, 136, 137; on Google Fiber, 20, 134; “In High-Tech Cities, No More Potholes, but What About Privacy?” article in, 134
- Noble, Safiya, 81
- nonfailure, 138, 144; institutional memory loss accompanying, 145; in local governments, 142; scandal relating to, 141–42, 143; tech companies enabled by, 132
- non-knowledge, 72; about CDP, 67–69; of city officials, 66, 70, 71; tech company information sharing and withholding generating, 70
- non-profits: on ConnectHome, 100; Connecting for Good, 102; KCDI networking venue for, 89; W. E. B. DuBois Learning Center, 101–2
- normalization, of data, 67
- Obama Administration, presidential innovation fellowship of, 47
- opportunity gap, in Prospect Corridor, 83–84
- optimization, 6
- Osgood, Chris, 47
- Our Divided City* (documentary), 106
- “Our United City” Facebook page, 107
- overpolicing, of working-class communities of color, 152
- Page, Larry, 33, 77
- “pain points,” 60
- “Paint the Town Green” Google Fiber campaign, 33–34
- pandemic, 9, 131, 139
- parking: city problems with, 76; data collection on, 113–14
- Paseo Boulevard (Kansas City), 18
- PayIt, 151
- Peña Gangadharan, Seeta, 99
- people of color, 105
- “Playing to Win in America’s Digital Crossroads” (Bistate Innovation Team), 30–31
- podcast, on three acts of smart city, 137–38
- policy: “4E” agenda for, 121; smart cities compared to, 148
- positionality, 12
- potentiality, 141
- pothole predictor, 17, 109, 110–11, 122; accuracy rate and ROI of, 123; budget savings from, 124; circularity of, 125, 149; end of, 130, 136; urban decay masked by, 124–25
- power asymmetry, 27, 60
- predictive models, 117; circularity of, 111, 125, 126–28; data for, 119–20; for municipal decision-making, 111; shortcomings of, 108. *See also* pothole predictor
- presidential election (2020), 139
- presidential innovation fellowship, of Obama Administration, 47
- Price, Michael, 106
- privacy, 151; innovation officers addressing, 49; of smart technologies, 16, 99
- privatization, of infrastructure, 26, 151
- privilege, of ignorance, 80–81
- Prospect Avenue (Kansas City), 86, 133
- Prospect Corridor (Kansas City): opportunity gap in, 83–84; “smart” makeover of, 134
- public health, city problem of, 78
- public housing, 12; ConnectHome aimed at, 92, 97*fig.*, 100; mistrust in, 96, 99,

- 149; surveillance in, 96, 99; Wayne Miner Court, 92–94
- public-private partnerships, 171n1; city officials in, 157n19; civic entrepreneurs engaged in, 39–40; of ConnectHome, 94; ignorance characterizing, 74; innovation offices facilitating, 49; for living labs, 56, 58
- public works, data driven, 124
- racial dividing line, of Troost Avenue, 84–85
- racial inequalities, 15, 16, 17; awareness of, 85; smart city enthusiasts addressing, 84
- racist framing, of digital inclusion, 86
- rapid personal transit system (RPT), 140
- redlining, 10, 31–35, 38–39, 85, 89
- Reed, Kasim, 48–49
- Request for Proposals (RFP), 133, 134, 137
- return on investment (ROI), 123, 127
- RFP. *See* Request for Proposals
- ROI. *See* return on investment
- RPT. *See* rapid personal transit system
- San Diego (California), 131–32, 152
- scandals: discrimination, 150; nonfailure relating to, 141–42, 143; Sidewalk Labs, 130
- S+CC. *See* “Smart + Connected Communities” platform
- Seaver, Nick, 143
- security state, 152
- Sedgwick, Eve, 66, 168n4
- segregation, 4, 10; digital divide maintaining, 101, 103; Google Fiber reproducing, 35
- sensors, 75, 180n24; parking data collected with, 113–14; for ShotSpotter technology, 133; for smart streetlights, 70–71
- ShotSpotter, 133, 152
- Sidewalk Labs (Toronto, Canada): by Alphabet, 6, 56; first principles thinking for, 77; scandal, 130
- Silicon Valley, 7, 8, 23; Black, 103, 104; color-blindness myth in, 81; failure in, 140; first principles thinking of, 77–78; growth pursuit of, 20, 21; prototypes of, 35; reinventing the wheel, 15; symbolic capital of, 148; urban boosterism of, 24; Web 3.0 of, 26
- smart cities. *See specific topics*
- Smart City Advisory Board: on dashboard, 112–14; members of, 111–12
- smart city enthusiasts, 3, 4, 11; computational discovery privileged by, 15; ignorance of, 15–16, 66, 75–76; racial inequalities addressed by, 84
- “Smart City Kick-Off Workshop”: mobility discussion at, 62–64; at Sprint Accelerator, 61–63
- “Smart City Summit,” 57
- “Smart + Connected Communities” platform (S+CC), 1–2, 38, 51
- smart corridor, for streetcar line, 52–53, 56
- smart governance, gatherings discussing, 57
- SmartKCMO dashboard, 122–23, 126
- smart streetlights, 118, 180n24; city officials on, 71; in San Diego, 131–32, 152; sensor malfunctions of, 70–71; surveillance using, 131
- smart technologies: “privacy-poor, surveillance-rich,” 16, 99; rejection of, 16; social divides resolved with, 60
- social change theory, 163n3
- social divides: data reflecting, 108; smart technologies resolving, 60
- social media, 144. *See also* Facebook
- social missions, of Startup Village, 45
- sociology, of Google Fiber, 37
- socio-spatial divide, 102
- socio-spatial history, 10
- socio-technical imaginary, 114
- Songdo (South Korea), 6, 51
- South by Southwest Festival (Austin, Texas), 48–49
- South Korea, Songdo in, 6, 51
- Special Weapons and Tactics (SWAT), 174n48
- Spring Valley (Kansas City), 43
- Sprint, 9, 38, 72; on civic entrepreneurialism, 39; headquarters, 50; infrastructural upgrades for, 55; Smart + Connected Communities, 1–2; on streetcar line, 53
- Sprint Accelerator: in Crossroads Arts District, 61; public buses to, 102;

- Sprint Accelerator (*continued*)
 “Smart City Kick-Off Workshop” at, 61–63
- Startup Village (Kansas City), 102, 107;
 civic entrepreneurs in, 43–44, 44*fig.*, 45; end of, 134–35; Homes for Hackers in, 44; social missions of, 45; startup house in, 44*fig.*
- State Line Road (Kansas City), 43
- streetcar line, 180n24; Cisco on, 52–53; Kansas City Streetcar Authority, 112; smart corridor for, 52–53, 56
- subaltern knowledge, 70
- Summit on Data-Smart Government (2017), 115
- surveillance, 151–52; of Black men, 134; ConnectHome and Google Fiber concerns over, 98–99; history of, 174n37; in public housing, 96, 99; smart streetlights used for, 131; with smart technologies, 16, 99; of tech industry, 7; of working-class communities of color, 16, 131
- SWAT. *See* Special Weapons and Tactics
- tech companies, 3; city procurement consulting firm working with, 138; information sharing and withholding of, 66–67, 70; local governments’ relationship with, 56, 151, 152; nonfailure enabling, 132; non-knowledge generated by, 70; quasi-public roles of, 150
- tech entrepreneurs: civic entrepreneurs compared to, 56–57; on coding camps for underprivileged kids, 62–63; Zukin on, 56
- tech industry: failure in, 17, 140; after financial crisis of 2008, 148; surveillance of, 7
- techno-chauvinism, 47
- technocratic solutions, to inequalities, 150
- technological terror: of civic entrepreneurialism, 42; Messeri on, 41–42
- techno-optimism, 106, 143
- techno-solutionism, 59
- techno-utopianism, 2, 3, 47, 147
- telecom company, data withheld by, 71
- test-bed urbanism. *See specific topics*
- T-Mobile. *See* Sprint
- Toronto, Canada. *See* Sidewalk Labs
- traffic light timing, 133
- traffic plan, from data analytics, 120
- Troost Avenue (Kansas City), 83, 106;
 digital divide along, 91–92, 100; racial dividing line of, 84–85
- Turner, Fred, 35–36
- UMKC. *See* University of Missouri Kansas City
- UN-Habitat, 158n26
- United Nations, 8
- United Nations Habitat Assembly, 158n26
- University of Missouri-Kansas City (UMKC), 26, 69
- University of Missouri-Kansas City Law School, 49, 169n11
- unknowning, 66, 72; Cisco and civic entrepreneur embracing, 73; city officials embracing, 74
- urban austerity, 22
- urban boosterism, 24, 36, 150
- urban decay, 18; digital kiosk relics indicating, 144; pothole predictor masking, 124–25
- urban disparities, 4, 5, 12, 22, 153
- urban infrastructures, 15, 155n7
- “Urban Momentum,” civic entrepreneurialism gathering of, 40–41
- USDOT. *See* Department of Transportation, US
- vacant building and crime model, 127–28
- Verizon, 71
- virtual reality (VR), 93–94, 173n26
- Wayne Miner Court (public housing, Kansas City), 92–94
- W. E. B. DuBois Learning Center, 101–2
- white women, diversity implying, 105
- Wi-Fi, free, 133, 180n24
- Wired*, on Columbus Smart City project, 131
- women: Black, 96; white, 105
- working-class communities of color, 4; ConnectHome mistrust of, 99; digital

divide narrative on, 91; digital inclusion narrative about, 90; economic mobility of, 102; overpolicing of, 152; surveillance of, 16, 131

World Series Championship, Kansas City
Royals winning, 19

Zukin, Sharon, 56

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