



# Smart-City Digital ID Projects

Reinforcing Inequality and Increasing Surveillance through Corporate “Solutions”



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**About this report:** The research and writing of this report was led by Mizue Aizeki and Rashida Richardson (Assistant Professor of Law and Political Science, Northeastern University) as part of the Surveillance, Tech and Immigration Policing project of the Immigrant Defense Project. This report was created with the support of the John D. and Catherine T. Macarthur Foundation. The authors received research support from Rutgers Law School students Ashley Dabb and Taylor Farrow, as well as from Princeton University students Amber Rahman, Ashley Nurse, and Sarah Elkordy through the Ida B. Wells Just Data Lab. Empower LLC provided research and writing support on the Mastercard business plan and the IDNYC timeline. Deyanira Del Río from the New Economy Project contributed research and writing support for the IDNYC case study. The authors would also like to thank Camelia Manring, Betsy Plum, and Teresa Perosa from the Engine Room for providing research and feedback on portions of the report.

**Preferred Citation:** Mizue Aizeki & Rashida Richardson, eds., *Smart-City Digital ID Projects: Reinforcing Inequality and Increasing Surveillance through Corporate “Solutions”*, New York, NY: Immigrant Defense Project, December 2021.

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# Executive Summary

“Smart City” is an often used yet ill-defined buzzword that is employed to describe or refer to a range of technology-based projects, solutions, or services. These projects aim to address abstracted problems; improve or modernize existing government services or infrastructure; or promote policy priorities or societal goals (e.g., sustainable development or internet accessibility). These projects operate in a contested space that requires collaboration between the public and private sectors. Though often narrated as the customer or beneficiary of smart-city projects, local governments must provide access to the city’s key assets and resources for these efforts to advance. This can mean providing the private sector access to government data (including information about residents), infrastructure, public goods or services, and special permissions or privileges. In return, the private sector is generally expected to codevelop or provide “smart” products, platforms, or services. These can include a range of information and communication technologies like sensors, apps, algorithms, hardware, and software that can be integrated or exist independently.

Because of their potential, smart-city projects have garnered widespread interest and investment from all levels of government, a range of industries (not limited to the technology sector), philanthropies, university research labs, and curious entrepreneurs. Yet a growing body of critical scholarship and public advocacy has drawn attention to the fact that the promises of smart-city projects remain illusory. Furthermore, the risks or tradeoffs associated with many of these projects are not adequately assessed or communicated to the public.

This report examines this problem space by exploring an emergent form of smart-city projects: digital identification (“digital ID”) that seek to integrate financial services or products, transit payment functions, and access to government services.

Section I explores how smart-city projects are pursued and why they often fail. Though smart-city projects vary greatly, this section highlights common flaws and missteps in current projects or proposals.

Section II explores the growing global digital ID market, highlighting the varying interests underlying the explosion of digital identity systems. Case studies highlighted in this section show that these efforts raise serious concerns about governance, due process, exclusion, privacy, surveillance, and equity. To illustrate how digital IDs intersect with smart-city initiatives, this section includes a focus on Mastercard, a key player in this area.

Section III details an effort in New York City to pursue a Digital ID project. This case study reveals entanglements between the private and public sector that led to a contested attempt to integrate a financial services smart chip into the City’s municipal ID card, the IDNYC. Proponents marketed the effort as a means to provide financial services to underserved communities, but ignored the actual root causes of uneven access to financial services along with the inherent risks of the project, such as increased surveillance of marginalized communities.

Section IV highlights best practices and policy recommendations that are a starting point for actions public and private actors can take to improve smart-city project development and implementation.

# I. Demystifying Smart Cities

## What are Smart Cities?

“Smart City” is an often used yet ill-defined buzzword that is employed to describe or refer to a range of technology-based projects, solutions, or services that aim to address abstracted problems, improve or modernize existing government services or infrastructure, or promote policy priorities or societal goals (e.g., sustainable development or internet accessibility).<sup>1</sup> Smart-city projects are not limited to any singular technology, service, provider, approach, or geography, but a primary feature of all smart-city projects is that they rely on data. Some projects are pursued to increase or expand data collection, such as integrating sensors into everyday objects (like trash cans) and public goods (like street lamps), or creating platforms or networks that can collect and share data from consumer products and smart devices (like service management apps or web portals). Some projects are pursued to monitor data and environments in real time to inform policies and practices or to manage assets, such as smart grids, automated water meters, license plate readers, Chicago’s Array of Things, or Los Angeles’ Mobility Data Specification pilot. Other projects require data in advance and throughout the usage period to inform government practices or policies, modernize government services, or improve efficiency (though the desired result or specific measures of efficiency are not always publicly communicated). This last category of projects can include predictive analytics, database management systems, and biometric technologies.

Because these projects are very costly and often require technical expertise, resources, and organizational structures that are beyond a municipal government’s capacity and institutional competence, most smart-city projects are pursued in partnership with the private sector or other partners with third-party funding support (e.g., federal government or philanthropic grants).<sup>2</sup> As a result, smart-city projects can be initiated through the various mechanisms highlighted in the following chart:

How is the smart-city project initiated?	What is this?	Is this process competitive?	Is this process transparent to city residents?
Open competition (e.g., challenges and hackathons)	The government invites the public, specific professionals, or organizations to an open competition to generate a proof of concept or prototype.	Yes	Information about the competition can be publicly posted before or after it occurs. Details about the competition are not always accessible, but the outcomes and other generic information may be publicly posted.
Conventional procurement (e.g., requests for information [RFIs], proposals, or quotations) <sup>3</sup>	The government publicly solicits goods or services. This process is formalized and regulated by state and local laws and policies.	Generally yes, but it can vary based on which solicitation method the government uses. Also, selection of vendors can be limited based on procurement laws.	Generally, yes. Most procurement laws and policies require some level of transparency, but what is made publicly available can vary.
Private-public partnerships or joint ventures	The government partners with the private sector to create, acquire, and/or implement goods or services, or complete a large or long-term project.	It can vary.	It depends. Some projects have public information and others can be secretive or exploit loopholes in laws that would otherwise require greater transparency or oversight.
Privatization	The private sector is fully responsible for goods or services, and the public sector has no direct control except for regulation or law enforcement.	It can vary.	It depends. Some governments publicly post contracts, but the solicitation and contracting process may not be open.

**Table 1. Initiation of Smart-City Projects.** Smart-city projects can be initiated through various mechanisms that aim to balance a range of government needs. Each mechanism can vary in how it is initiated, whether it is a competitive process, and how much transparency is permitted.

Even though the term “smart city” suggests that these projects are confined to or focused on a municipality, these projects do not operate exclusively at the scale of the city.<sup>4</sup> In fact, smart-city projects can vary greatly based on who or what is the target use or service community.<sup>5</sup> There are smart-city projects that focus on creating products or services directed at individuals as the primary user. Some of these efforts aim to improve or enhance government service delivery or community engagement by providing products, platforms, or systems that can connect with consumer products or existing infrastructure to improve communication or access to information. Other efforts seek to fill voids or address inequalities produced by the market. Though these goals are laudable, these types of smart-city projects tend to treat constituents as consumers, which can produce a range of negative consequences such as predatory practices or further entrenchment of social inequalities. There are smart-city products or services where government agencies are the primary user and consumer. Since these projects can be used by government agencies at any level of government or enable intergovernmental use, they sometimes lack clear geographic or jurisdictional boundaries.

Some smart-city projects aim to create or connect a set of technology-based products or services that can be used in tandem as a network for a diverse, yet identifiable, use community that can include constituents as well as private and public entities. These projects typically have defined geographic and jurisdictional boundaries, and the network of products or services is tailored or informed by the characteristics and behaviors of its target use community. The final scale of the smart-city market is projects that scale to a municipal or larger regional area. These projects tend to focus on infrastructure. Their use community is diffuse due to the scale of the project and the number of actors and relationships involved. For example, the municipal government or even several government institutions may be the direct customer, but the project involves products or services that will directly or indirectly affect constituents and private entities.

Smart-city projects vary based on a variety of factors and dynamics, which presents challenges in defining, understanding, and regulating them. However, understanding the varied means through which these projects are initiated, as well as the target use or service community, can aid deeper understanding and analysis of the risks and opportunities associated with smart-city projects.

## Why Smart Cities Projects Fail

Because of their potential, smart-city projects have garnered widespread support, interest, and investment from all levels of government, a range of industries (not limited to the technology sector), philanthropies, university research labs, and curious entrepreneurs. Yet a growing body of critical scholarship and public advocacy has drawn attention to the fact that the promises of smart-city projects remain illusory.<sup>6</sup> Furthermore, the risks or tradeoffs associated with many of these projects are not adequately assessed or communicated to the public.

As the preceding section suggests, smart-city efforts vary greatly due to a range of factors. Yet the reasons many smart-city projects are subject to criticism and public backlash, or considered flawed or failures, are more universal. Many smart city projects share common flaws, missteps, and oversights, and these errors are not always mutually exclusive.

## **1. Smart-city projects are designed and implemented without adequate engagement with or consultation of the public or directly impacted constituents.**

A major pitfall of smart-city efforts is that analysis of community problems and the selection of potential solutions often take place in isolation. Government officials and private actors make these decisions without providing their constituents, directly affected communities, or other stakeholders advance notice or opportunities for consultation. While some notable examples of local governments leading stakeholder engagement to inform smart-city efforts exist,<sup>7</sup> such consultations are often pursued after criticism or public backlash.<sup>8</sup> For example, Columbus, Ohio, won a \$40 million US Department of Transportation Smart City Challenge grant to use a range of technology-enabled mobility interventions to address maternal health and infant mortality issues. The city's original plan sought to use autonomous vehicles to transport mothers from specific neighborhoods to healthcare providers. When news of this project became public, the immediate backlash prompted the city to commit to a stakeholder engagement process, which revealed that the initial project plan failed to meet the needs of its target community. The project was fundamentally redesigned as a result of community feedback.

Community and stakeholder input can inform problem analysis by elevating practical realities or other concerns that may not be appreciated by government officials or technology vendors. In Columbus, Ohio, the stakeholder engagement revealed that access to reliable transportation for other life needs (such as pharmacy or grocery store trips) was equally important for maternal health and prenatal care.<sup>9</sup> Community and stakeholder engagement is also an opportunity for developing community buy-in or better understanding, and ideally mitigating, community concerns. Given the large price tag of smart-city projects and objects, it can be hard to justify why limited government funds are being spent on a technology product or service rather than other urgent community needs like staffing in underresourced agencies or basic infrastructure repair. Thus, engaging community members early and often can inform important decisions in the procurement process, such as assessing a vendor's privacy- or data-management practices, or requesting a racial-equity audit before entering a contract. Finally, public engagement must be meaningful. When stakeholder engagement is superficial or deficient, it is increasingly documented and a source of criticism that can ultimately lead to a smart-city project's failure,<sup>10</sup> or present political consequences for government officials associated with the project.<sup>11</sup>

Stakeholder engagement is not a panacea for flawed smart-city projects, but it can help identify problems and mitigation strategies early or potentially forestall misguided efforts before limited public funds are wasted.

## **2. Smart-city projects offer solutions to unspecified and misunderstood problems.**

Smart-city projects market technological solutions, but it is not always evident whether the government officials or technology vendors leading these projects are clear on the nature of the problems they seek to address. In many cases, the problems remain unspecified, abstracted, misunderstood, or are never fully articulated. This lack of specificity regarding the problem also means the goals or desired outcomes of a project lack clarity, such that realizing the marketed solution of a smart-city project becomes the primary objective. This overemphasis on solutions means that important questions for evaluating smart-city efforts remain unanswered. For example, a project might claim to "create efficiency"—but for whom and to what end are unresolved questions. When this lack of specificity regarding the problem or project goals is combined with unresolved questions that are crucial to evaluating the value or efficacy of a smart-city project, it leaves room for abuse or manipulation. Government officials or technology vendors can claim success based on selective statistics or data about the project.



For example, predictive policing technologies can be considered a smart-city object or integrated into broader smart-city projects. These technologies use crime data and sometimes other non-criminal-justice related data sources to try to predict where a crime may occur or who is likely to be a victim or perpetrator of a crime. Cities adopt these technologies to inform police practices and policies with the hope of reducing crime or to target specific crime problems. Santa Cruz, California, was an early adopter of this technology. In 2011, the Santa Cruz Police Department used the technology in an experimental pilot to target property crimes and claimed it helped reduce those crimes by 19 percent.<sup>12</sup> The police department later expanded its use of the technology to full operation and other police departments in California and nationally began using different predictive policing technologies. Yet despite these early claims of success, in 2020 Santa Cruz became the first US city to ban predictive policing, citing concerns of racial bias; Police Chief Andy Mills noted that the technology “put officers in conflict with communities.”<sup>13</sup> This example demonstrates not only how smart-city efforts can be pursued to address abstracted or unspecified problems like “reducing crime,” but also how this lack of specificity about the problem or goal can allow smart-city efforts to be erroneously affirmed as a success with limited or selective evidence.

### **3. Smart-city projects offer technological solutions that are ill-suited to the problems they purport to solve.**

Smart-city efforts are often marketed as a way for cities to face some of their greatest challenges, such as, the digital divide, economic inequalities, climate change, or decrepit infrastructure. While some technological interventions may be worthwhile for discrete goals (e.g., an interactive kiosk displaying real-time public transportation updates) or technology-related problems (e.g., energy efficiency), in many cases technological solutions are inappropriate, impractical, or ill-suited to the stated problem or goal. This is especially true when smart-city projects attempt to tackle complex social issues.

Occasionally, smart-city efforts seek to apply generic technological solutions without evaluating the historical, political, economic, and social dynamics of a particular jurisdiction. In these situations, the technological solution may not work at all, may only address a symptom rather than the root cause of a community problem, may worsen community issues, or may distort public perceptions of the problem (and possibly impede alternative solutions or community demands). For instance, research has shown that some large-scale and data-driven government investments or modernization efforts, particularly transportation-related projects, can induce gentrification, pushing out the very communities the projects were intended to help.<sup>14</sup> Similarly, some scholars have criticized government investment in 311 apps to improve civic engagement and service delivery because they tend to prioritize discriminatory “quality of life” issues and primarily benefit wealthy, white residents.<sup>15</sup>

In other cases, the government officials leading the smart-city effort may fail to adequately evaluate the problem or the appropriateness of a particular technological solution. In these situations, the effort may fail or face significant criticism because it was ill-suited to the problem at hand or lacked sufficient safeguards to mitigate inherent flaws with the project. For example, New York City’s LinkNYC Wi-Fi kiosk faced a variety of challenges when first implemented because government officials failed to consider privacy and data-minimization safeguards,<sup>16</sup> develop an equitable implementation plan,<sup>17</sup> and anticipate potential abuses of the system.<sup>18</sup> After a year of negotiations with legal advocates, the City updated the LinkNYC Privacy Policy to address oversights and criticisms.<sup>19</sup> The City also eliminated the web-browsing function of the kiosk after public outrage in response to reports of the kiosks being used to view pornography.<sup>20</sup> Although LinkNYC is not considered a failure, it remains a constant source of criticism and requires frequent modifications because of the various errors in developing and implementing the project.

#### **4. The risks and trade-offs associated with smart-city projects can be underexamined, ignored, and rarely communicated to the public.**

Smart-city projects have several inherent risks or trade-offs because they can be very resource-intensive (both in costs and use of government assets), they require private-public collaboration where interests may not always be aligned, and they rely on massive amounts of data to develop or implement their technological components. When these risks are not adequately examined or communicated to the public, they can lead to public backlash or undermine the value of the project.

A particular risk and growing concern with smart-city efforts is that these projects can enable or aid the expansion of mass surveillance or discriminatory government practices. Many of the technologies employed in smart-city projects include sensors or other equipment capable of collecting various forms of data, which can include sensitive and personally identifiable information. If the data collected is shared among government agencies without adequate safeguards, then it can be subject to abuse or misuse, especially if there are no reliable accountability or oversight practices or policies in place. Some smart-city technologies or projects are intended to target specific communities, which raises concerns about profiling, especially if these targeted communities are currently or historically subjected to other forms of government or societal scrutiny. For example, Seattle's Find It, Fix It app was developed to improve reporting of and government responses to community issues like neglected potholes and clogged storm drains,<sup>21</sup> but many residents and visitors used the app to harass unhoused people by reporting abandoned vehicles and homeless encampments.<sup>22</sup>

There are also risks associated with using smart-city technologies developed with government data. Government data sets are notoriously flawed because they are error-ridden and not representative of the relevant jurisdiction because they tend to reflect the communities that have more frequent contact with government agencies.<sup>23</sup> Therefore, when flawed government data is used as if it is complete or representative, it can produce flawed outcomes. Moreover, government data is typically collected for specific administrative purposes, not necessarily for technology development, so when it is used in ill-suited contexts, it can produce negative or flawed outcomes. All of these problems are made worse when they are not properly evaluated or communicated to the public. For example, when Chicago first announced its Array of Things project, an experimental network of sensors and computing capabilities intended to measure and monitor the urban environment to improve policies and service delivery,<sup>24</sup> there was immediate public backlash and concern regarding surveillance and privacy risks associated with the project.<sup>25</sup> In response, the city launched a public outreach campaign to clarify what data the sensors, microphones, cameras, and other equipment would collect and to process informed modifications to the project, like eliminating features that could identify or interact with residents' cell phones.<sup>26</sup> Since smart-city efforts carry a variety of risks and trade-offs, they must be adequately evaluated and communicated to the public in order to identify necessary safeguards or to determine whether alternative approaches or projects are better suited to address community needs.

## II. Digital IDs and Smart Cities

### Digital IDs: Refugees, National IDs, and an Emergent Smart-Cities Approach

#### The Global Digital ID Market

Over the past fifteen years, a variety of interests and actors have converged to promote and accelerate technology-based approaches to legal identification. Digital identification systems—hereinafter referred to as digital IDs—often take the form of centralized national ID programs that combine personal information, existing government data, and biometric data such as fingerprints, face scans, or iris scans to authenticate identification. Proponents of digital IDs argue that these systems enable more efficient provision of government services, minimize fraud, increase access and inclusion, or serve national-security interests.<sup>27</sup>

Significant momentum for the growth in the digital ID market came after the United Nations Agenda for Sustainable Development, adopted in 2015, set a goal for “legal identity for all” by 2030.<sup>28</sup> According to the UN, about 20 percent of the world’s population—particularly displaced people and those subject to political and social instability—lacks legal identity, depriving them of access to government services such as “healthcare, schools, shelter, justice, and other government services.”<sup>29</sup>

The call for expanding access to legal identity has largely become a drive for digital IDs, as the rapidly emerging biometric industry has converged with financial institutions, as well as with information and communications technology firms to meet the opportunity.<sup>30</sup> In the humanitarian realm, agencies have increasingly embraced biometric technologies for identification of refugees, displaced people, and other vulnerable populations.<sup>31</sup> For example, the United Nations High Commission on Refugees (UNHCR) creates a digital record for every refugee it encounters by registering people in a database, including their biometric data; and the UN World Food Program uses IrisGuard’s iris-scan payment system in refugee camps in Syria and elsewhere.<sup>32</sup> Similarly, major actors in the international development industry, such as the World Bank and the United States Agency for International Development (USAID), have set up alliances to encourage the development of national digital ID systems via public-private partnerships.<sup>33</sup> Another significant proponent of digital IDs is the ID2020 Digital Identity Alliance, which formed to meet the challenge of global digital identification through “an approach that is holistic, market-based and addresses the full scope and scale of the challenge.”<sup>34</sup> Founded following the UN summit on universal identity, ID2020 is a public-private coalition focused on digital identity that includes corporations such as Accenture, Microsoft, and Mastercard, as well as civil-society organizations, academics, and blockchain firms.

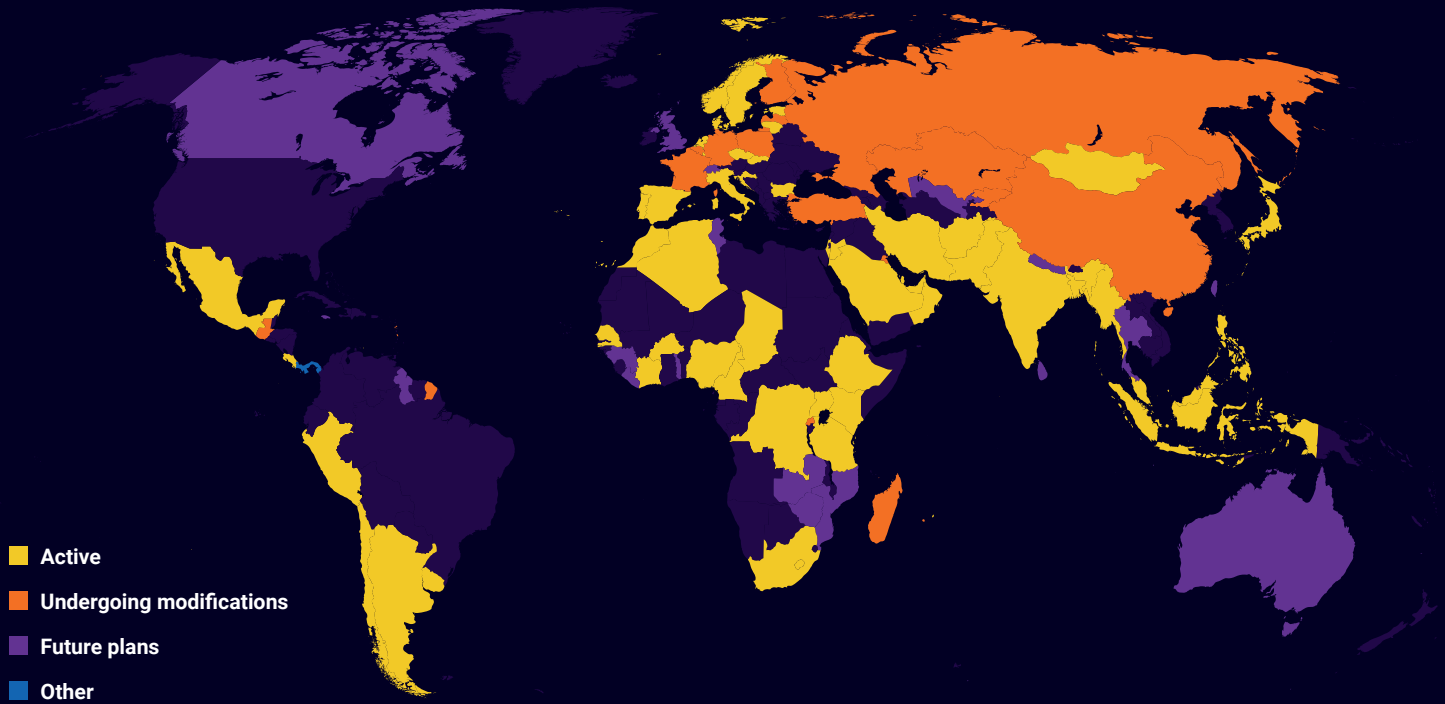
Though the stated goals of digital-identity management vary, these programs typically aim to create a single digital identity—a unique identification number—for residents (or sometimes only citizens) in an area or a country in order to grant access to particular services or rights.<sup>35</sup> Technological advances in the financial industry also have led to more innovations to manage personal data.<sup>36</sup> Without legal identification, some 1.5 billion people are constrained in their ability to open bank accounts, buy a SIM card for a cell phone, get a formal job, and access social welfare or health benefits.<sup>37</sup> For those lacking legal identification, the pathway to acquiring it increasingly requires having to submit personal and invasive data such as iris scans, facial scans or voice prints, or even DNA.

Latching on to the potential financial opportunities, corporations have become critical partners in advancing digital IDs as a primary mode of modernizing legacy administrative systems, many of which are paper-based, in the Global South and emerging economies.<sup>38</sup> But the Digital ID market is not limited to refugees, rural areas, or the Global South. Promotional material created by Thales Group, a global leader in the digital-identity market, emphasizes the relevance of digital IDs to urban areas and local governments: “The digital or the smart city is becoming the model that ensures consistency in all the links between urbanites, broader communities, and public authorities. . . . Digital identity is the key that unlocks the individual’s access to a rich array of services and support. Or, to put it another way, the smart city is set to become our new playground.”<sup>39</sup>

### **To Be Seen: Access, Exclusion, and Surveillance**

The momentum behind digital IDs is a culmination of long-standing state and financial interests converging with the economic momentum driving advances in technology, including databases, biometrics collection, and the cloud. Social sorting, such as determining eligibility for services, inclusion or exclusion for a target population, or even subjective assessments of “risk” and suspect classes, relies on identification and classification. Historically, governments have used manual recordkeeping and databases to advance identification and classification goals. In some cases, these practices and systems were used to surveil and regulate marginalized groups; in other cases, they were used to manage entire populations. For example, under the Criminal Tribes Act of 1871, the Indian colonial government’s use of a manual information system branded “entire Indian communities as ‘criminal tribes’ followed by recordkeeping of their details and physical movements, which was used to impose severe restrictions on movement, implement routine physical surveillance, and limit access to legal redress.”<sup>40</sup> During the First and Second World Wars, the United Kingdom employed a national registration program—which required the recording of personal information of individuals living in the UK—to enable the military to efficiently conscript those who would be best suited to serve.<sup>41</sup> After 9/11, the US government implemented the Special Registration program, requiring noncitizens from select (predominantly majority-Muslim) countries who were already present in the United States to register at designated immigration offices.<sup>42</sup> Many of these people were subject to surveillance, detention, and deportation because the state broadly deemed them a “risk to national security.”<sup>43</sup>

**Figure 1. Countries by Digital ID Project Status.** Digital ID projects are proliferating globally but not all projects are fully planned or implemented. This graphic illustrates where projects exist and their current status.



A range of agendas—political, economic, corporate, security-driven, and carceral—drive the state’s increasing interest in digital-identification systems. Governments and corporations often like to say that digital IDs will solve problems such as fraud and service delivery as well as expand democracy, access, and inclusion—yet in practice these systems have been shown to exacerbate marginalization and exclusion. The proliferation of biometric and personal data collection, along with the various forms of cataloging people—whether in police, welfare, immigration, refugee, or other databases—increases the legibility and control of those the state deems necessary to monitor, regulate, and punish. As states promote and require identity management systems and policies in close collaboration with corporations—including financial institutions and technology companies—digital IDs are playing an increasingly central role in a complex system of identity control and management.<sup>44</sup>

### ***Digital IDs in Practice: Emerging Concerns***

Over the past decade, the number of digital-identity projects has proliferated. Some of these initiatives have faced public resistance and lawsuits because they exclude or otherwise harm vulnerable people and communities.<sup>45</sup> Key concerns include: 1) “function creep” and compulsory enrollment; 2) systemic exclusion; 3) data breaches and privacy risks; 4) increasing police and state surveillance power, and 5) the elevation of corporate solutions over community-based ones. The following section provides examples that illuminate these concerns.

**Function creep and compulsory enrollment.** Once implemented, digital IDs systems are prone to what is colloquially referred to as “function creep”—where the ID becomes mandatory for eligibility or to access an increasing range of services and rights. In such cases, people are effectively coerced into obtaining a digital ID—which in some cases requires submitting sensitive information like biometrics.<sup>46</sup> This type of compulsory enrollment can exclude historically marginalized groups that may not have necessary documents (such as a birth certificate) or subject vulnerable groups to unnecessary state surveillance, control, and exclusion from government benefits or services.

Function creep has been a feature of many digital identification systems.<sup>47</sup> For example, in Ireland, the Public Services Card (PSC) began as an optional service, but the government subsequently made enrollment mandatory in order for people to access social welfare benefits, apply for a passport, take a driver’s test, and more.<sup>48</sup> The PSC has come under growing scrutiny and may be terminated if found to be in violation of the European Union’s General Data Protection Regulation (GDPR).<sup>49</sup> In April 2020, the UN Special Rapporteur on extreme poverty and human rights issued a statement on how the PSC discriminates against marginalized groups in Ireland and has a negative impact on the privacy, data protection, and dignity of those who rely on the government for public assistance.<sup>50</sup>

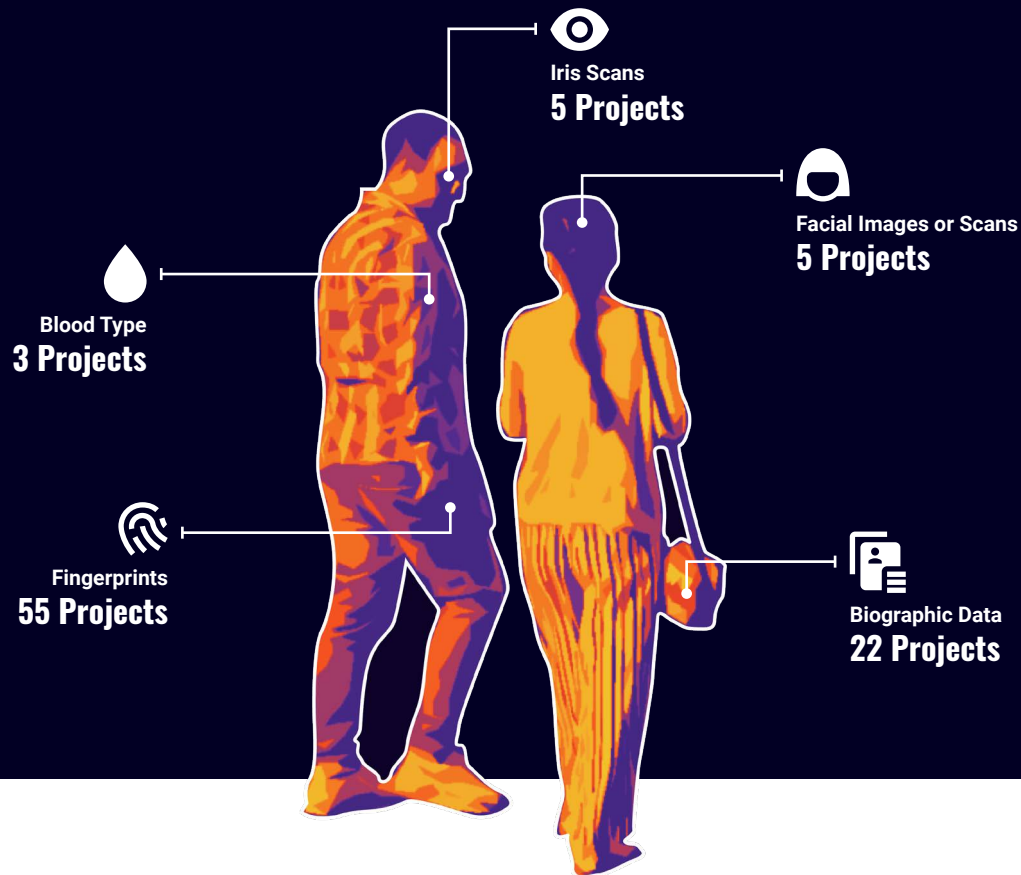
Another high-profile example is India’s national biometric ID system, Aadhaar, which was launched in 2009.<sup>51</sup> It is currently the largest digital ID program in the world, with nearly 1.2 billion Indian citizens and residents enrolled—over 99 percent of Indian adults. To enroll in Aadhaar, individuals must submit a photo and biometric data (e.g., fingerprints and iris scans) to receive a unique 12-digit ID number (UIDAI). Nominally launched as a means to mitigate fraud and waste in the provision of public benefits, authorities initially said the program would be voluntary, but Aadhaar authentication had gradually become mandatory for access to welfare and other government services, like food rations.<sup>52</sup>

In a push toward digital identification in Nigeria, the World Bank funded the government’s effort to promote a biometrics-based national digital ID system.<sup>53</sup> Currently, a National Identification Number (NIN) is required for all transactions that require an ID, such as obtaining a driver’s license, paying taxes, opening a bank account, and accessing welfare benefits and national healthcare.<sup>54</sup> In December 2020, the government required NINs to register SIM cards used to operate most mobile phones, and by February 2021, telecommunications companies began to block the number of any SIM without a NIN.<sup>55</sup> Given the reliance on cell phones, this new requirement effectively made having a NIN compulsory—much like requiring a refugee to submit to biometrics to get access to food.<sup>56</sup> At the time, only 25 percent of the population had an NIN, and given the widespread concern over losing access to phones, the result was chaotic situations at registration sites.<sup>57</sup> Doctors called on the government to postpone registration during the pandemic; the government has been required to postpone the deadline multiple times.<sup>58</sup>

**“The techniques devised to enhance the legibility of a society to its rules have become vastly more sophisticated, but the political motives driving them have changed little. Appropriation, control, and manipulation (in the nonpejorative sense) remain the most prominent.”**

**James C. Scott**  
*Seeing Like A State*

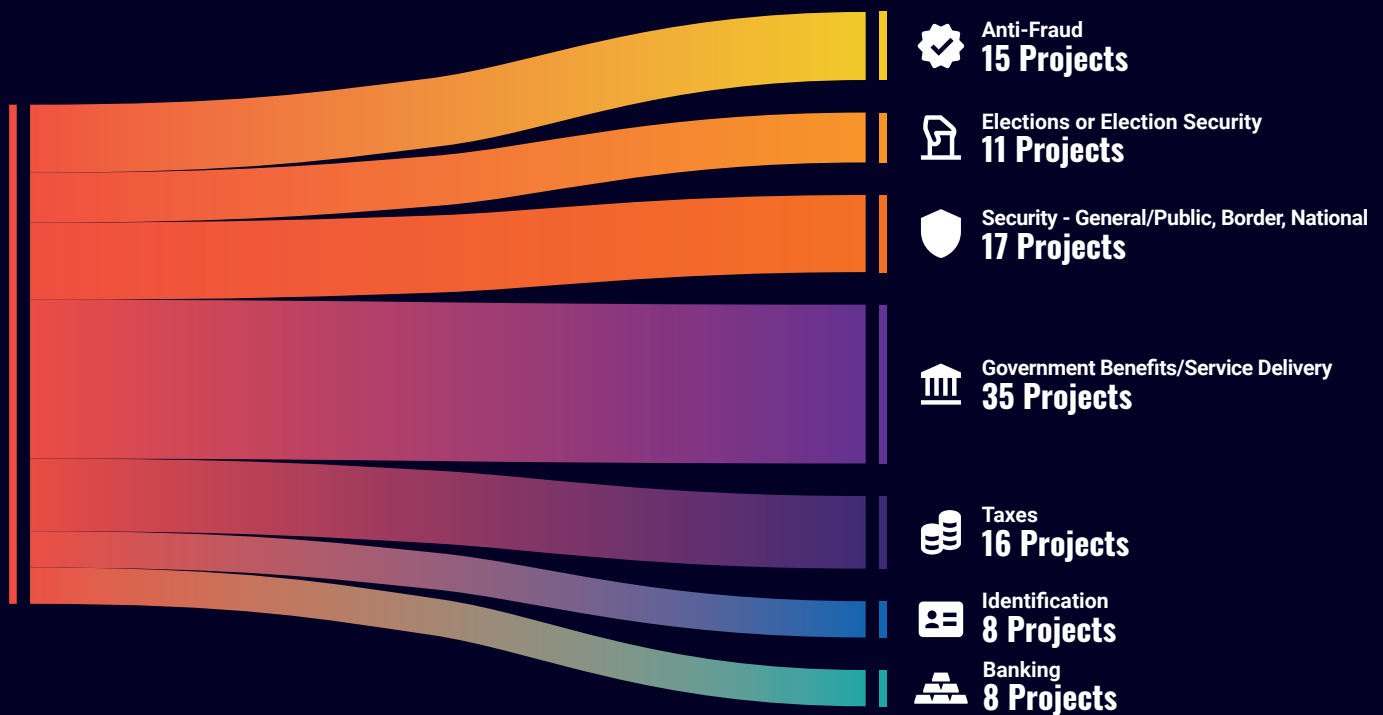
**Figure 2. Common Features for Authentication in Digital ID Projects.** Digital IDs projects employ technology-based approaches to legal identification. These projects often combine personal information, existing government data, and biometric data such as fingerprints, face scans, or iris scans to authenticate identification. This visual illustrates common features used for authentication in current and planned projects across the globe.



### ***Biometrics IDs and Systemic Exclusion***

Some digital ID projects require the compulsory collection of biometric data—such as finger and palm prints, and iris and facial recognition—which, in the words of Jamaican Supreme Court Justice David Batts, poses “the danger of a ‘big brother state.’”<sup>59</sup> Biometric identity attributes are unique to an individual, stable over time, and widely regarded as a useful tool for identification and authentication. For these reasons, biometric data is extremely sensitive and powerful, and can be very effectively weaponized by the state.<sup>60</sup> Nevertheless, many biometric digital ID systems are being put in place without adequate data protection or privacy regulations in place.<sup>61</sup> In addition, biometric identifiers are not universally accessible for all people—for example, fingerprints are not necessarily reliable depending on factors such as age, certain health conditions, or the performance of certain types of manual labor.<sup>62</sup> Those who are unable or unwilling to provide biometrics are then excluded from programs and services that require a digital ID. Biometric authentication failures have also proven to be a significant issue in countries like India, where the implementation of Aadhaar led to extreme consequences including starvation and death.<sup>63</sup>

**Figure 3. Stated Purposes or Goals of Digital ID Projects.** Though the stated goals of digital-identity management vary, these programs typically aim to create a single digital identity—a unique identification number—for residents (or sometimes only citizens) in an area or a country in order to grant access to particular services or rights. This graphic highlights some of the common stated goals or purposes of current or planned digital ID projects.



*There's a Swahili proverb, Mtoto wa nyoka ni nyoka—the child of a snake is a snake. Digital ID in Kenya would be the child of analog ID, and its venom would be deadlier.<sup>64</sup>*

In 2019, Kenya rolled out its mandatory biometric national ID system, the Huduma Namba.<sup>65</sup> Because of historic discrimination against ethnic and religious minorities through its national registry, there were concerns these groups would be further marginalized under the digital ID programs.<sup>66</sup> In the past, minority groups have systematically been denied IDs, which subject them to “vetting” procedures and onerous requirements.<sup>67</sup> Under the National Integration Management System, enrollment in the new biometric digital ID program would be a precondition for receiving government services such as health care, education, public housing, marriage licenses, mobile-phone registration, and the ability to vote.<sup>68</sup> In early 2020, the High Court of Kenya (the first level of the country’s superior courts) suspended the program following a legal challenge citing concerns over data privacy, inadequate public participation, and potential discrimination against minorities.<sup>69</sup> The court intervened to temporarily halt the biometric IDs until the government enacts laws to protect the security of the data.<sup>70</sup> While the ruling did not support arguments on exclusion, the court ruled that the proposed collection of DNA and GPS data was unconstitutional.<sup>71</sup>



The Ugandan national ID system, Ndaga Muntu, is a national digital ID program that is required for access to health care and social benefits, and the ability to vote, open a bank account, and obtain a mobile phone. Designed as a national-security project, the ID aims to fight crime and unauthorized employment.<sup>72</sup> A project supported by the World Bank, the Ngada Muntu has led to mass exclusion of Uganda's poorest and most marginalized communities—women and the elderly in particular. A recent study found that as much as one-third of the population had not yet received a national ID because of the government's enrollment failures and errors, resulting in severe exclusion from health and social benefits, and in some cases even resulting in death.<sup>73</sup>

Similarly, exclusion has been notable in India's Aadhaar ID system. In March 2021, 3.8 million people in Assam were not eligible for Aadhaar enrollment because their biometric details were locked.<sup>74</sup> Those who are physically unable to provide biometrics are also subject to systemic exclusion. For example, elderly people and manual laborers may not have readable fingerprints, and it can be challenging for individuals who have involuntary movements or reduced coordination and mobility to give biometrics.<sup>75</sup> Another significant concern is authentication errors, which have resulted in marginalization and exclusion with extreme consequences including starvation and death due to inability to access medical care.<sup>76</sup> For example, in the capital city of Delhi in January 2018, almost a quarter of households were unable to access food rations due to authentication failures.<sup>77</sup>

**Exposing people to data breaches.** Digital ID systems typically amass personal and sensitive data, making these databases susceptible to being breached by malicious actors or abused by public authorities using data for multiple purposes.<sup>78</sup> In India, the Aadhaar national digital ID program links a unique twelve-digit number (UID) for each resident with a person's biometric and demographic data. Originally devised as a means to combat identity fraud and deliver government services, the Aadhaar UID is now linked to multiple services including food rations, other government benefits, and income tax collection.<sup>79</sup> Aadhaar is the world's largest biometric-linked ID card system, and over three hundred companies rely on its authentication services.<sup>80</sup> It has experienced multiple leaks and data breaches—including the breach of the personal details of over one billion people.<sup>81</sup>

The South Korean government had to rebuild the nation's digital ID program from scratch after experts discovered that in 2014 the ID numbers and personal details of an estimated forty million people (80 percent of the population) were stolen.<sup>82</sup> In Brazil, over sixteen million COVID-19 patients had their personal and medical information exposed on the internet due to a leak.<sup>83</sup> The Brazilian government is also in the process of building a massive database containing information on over two hundred million citizens—over twenty-eight agencies, including the Army and the Brazilian intelligence agency, have requested access to this massive database.<sup>84</sup>

**Increased power to surveil, police, and punish.** While some digital ID programs are explicitly linked to national-security agendas, most are promoted for their rights-enhancing potential rather than as a means for states to increase their power and abilities to surveil and police people. Yet the convergence of the proliferation of biometric and personal-data collection, along with the various technological solutions to manage information on people—whether in police, welfare, immigration, refugee, or other databases—has increased the state's ability to see and control those it deems necessary to monitor, regulate, and punish.<sup>85</sup> This is particularly concerning as the United States and the European Union expand biometrics-based systems for migrant and immigration control, including massive biometric databases such as the Department of Homeland Security's Homeland Advanced Recognition Technology (HART) database.<sup>86</sup>

This risk of state overreach exists because digital ID systems can present an opportunity for state actors to mine data to refine surveillance practices. In 2018, for example, Zimbabwe announced plans for a national digital ID system focused on financial systems and transportation that would integrate artificial intelligence technologies.<sup>87</sup> As part of its partnership with CloudWalk Technology, a Chinese artificial intelligence corporation, the company would have “access to a database of Zimbabwean faces to use as training data and improve the accuracy of their facial recognition technology, particularly on darker skin.”<sup>88</sup> The country currently does not have a data protection law, and concerns about surveillance are “peremptorily dismissed by parliamentary officials, on grounds of national security.”<sup>89</sup>

Digital ID systems have also been used by states to target and surveil groups of people regarded as a threat. Research conducted by the Engine Room found that Thailand was possibly using its digital ID system to monitor indigenous people and human-rights advocates.<sup>90</sup> The research organization also found that Bangladesh was likely sharing information on Rohingya refugees (a persecuted ethnic minority in Myanmar’s Rakhine State) with the government of Myanmar.<sup>91</sup> The recent transition of power in Afghanistan has left vast data-intensive systems with poor regulatory and legal frameworks—such as biometrics collected by the U.S. military, biometric voter verification systems, and the national electronic ID system, the e-Tazkira, in the hands of the new Taliban government.<sup>92</sup>

The surveillance risks associated with digital IDs are made worse by the fact that digital IDs are used or accessible for a variety of public and private services, like financial services or a transit payment function. Each transaction made with a digital ID increases the potential generation of data. This data, along with metadata—data that summarizes basic information about data—can be accessed and used by other parties for profiling, tracking, surveillance, and repression.<sup>93</sup> According to Privacy International, “[s]martcard metadata are usually sufficient to identify an individual with a high degree of precision. Behavioral patterns, physical movements, and purchasing habits can then all be inferred and attributed to the identified individual(s). Should these data become accessible . . . they can be used to track and persecute vulnerable groups.”<sup>94</sup> In cities where contactless transit systems are in place, police and federal intelligence agencies have regularly accessed collected data. A position paper on the Australian transit system states: “In almost every jurisdiction where smartcard ticketing has been implemented, police and intelligence agencies are able to access travel information on smartcards for the investigation or prevention of crime.”<sup>95</sup> Coupled with a digital ID, such functions can become powerful tools for policing and surveillance.

**Reinforcing existing inequality through corporate, not community based, solutions.** As detailed in Section I, smart-city projects like digital IDs rely on private-public partnerships and collaboration, but these close partnerships often result in the implementation of corporate solutions that do not necessarily serve community needs. Private corporate interests often play a hidden yet critical role in all aspects of these digital identity projects, from their design through their application and use. For example, Aadhaar “was designed from the start to facilitate new forms of market activity and commercial surveillance.”<sup>96</sup> The Aadhaar Act allowed private corporations like banks and telecommunications companies to download data from the Aadhaar database during the authentication process, enabling the expansion of a commercialized surveillance industry built around this personal data.<sup>97</sup> This proliferated with little scrutiny or safeguards until the Indian Supreme Court intervened in 2018.<sup>98</sup> Similarly, the sole proprietor of South Africa’s Social Security Agency payment system was able to exploit the poorest South Africans by selling other services, such as loans and insurance, to social security recipients.<sup>99</sup> Because the government was entirely reliant on this private technology corporation to deliver social security, it did not have the capability to perform basic and vital functions. This corporate strategy of infrastructural dominance has been dubbed “lockin.”<sup>100</sup>

**Table 2. Common Actors Across Digital ID Projects.** Digital IDs are a growing market and projects involve a range of actors, including the World Bank and the United Nations, along with national governments, philanthropic organizations and corporations. The number of projects based on publicly available information follows.

<b>Type of Actor</b>	<b>Organization</b>	The World Bank
International Financial Agency	<b>Number of Global Digital ID Projects involved in or funding</b>	31
	<b>Examples:</b>	Afghanistan, Argentina, Bangladesh, Burkina Faso, Cameroon, Cote Divoire, DRC, Ethiopia, India, Kenya, Latvia, Lesotho, Liberia, Madagascar, Mauritius, Mexico, Morrocco, Mozambique, Nepal, Nigeria, Philippines, Rwanda, Samoa, Tanzania, Thailand, Togo, Tonga, Tunisia, Uganda, Uzbekistan, Zimbabwe
<b>Type of Actor</b>	<b>Organization</b>	United Nations
International Government Organization	<b>Number of Global Digital ID Projects involved in or funding</b>	4
	<b>Examples:</b>	Algeria, Bangladesh, Ethiopia, Zimbabwe
<b>Type of Actor</b>	<b>Organization</b>	UK Government (World Bank Donor)
National Government (where the project is not based domestically)	<b>Number of Global Digital ID Projects involved in or funding</b>	31
	<b>Examples:</b>	Afghanistan, Argentina, Bangladesh, Burkina Faso, Cameroon, Cote Divoire, DRC, Ethiopia, India, Kenya, Latvia, Lesotho, Liberia, Madagascar, Mauritius, Mexico, Morrocco, Mozambique, Nepal, Nigeria, Philippines, Rwanda, Samoa, Tanzania, Thailand, Togo, Tonga, Tunisia, Uganda, Uzbekistan, Zimbabwe
<b>Type of Actor</b>	<b>Organization</b>	Australian Government (World Bank Donor)
National Government (where the project is not based domestically)	<b>Number of Global Digital ID Projects involved in or funding</b>	31
	<b>Examples:</b>	Afghanistan, Argentina, Bangladesh, Burkina Faso, Cameroon, Cote Divoire, DRC, Ethiopia, India, Kenya, Latvia, Lesotho, Liberia, Madagascar, Mauritius, Mexico, Morrocco, Mozambique, Nepal, Nigeria, Philippines, Rwanda, Samoa, Tanzania, Thailand, Togo, Tonga, Tunisia, Uganda, Uzbekistan, Zimbabwe
<b>Type of Actor</b>	<b>Organization</b>	The Bill and Melinda Gates Foundation (World Bank Donor)
Philanthropic Organization	<b>Number of Global Digital ID Projects involved in or funding</b>	31
	<b>Examples:</b>	Afghanistan, Argentina, Bangladesh, Burkina Faso, Cameroon, Cote Divoire, DRC, Ethiopia, India, Kenya, Latvia, Lesotho, Liberia, Madagascar, Mauritius, Mexico, Morrocco, Mozambique, Nepal, Nigeria, Philippines, Rwanda, Samoa, Tanzania, Thailand, Togo, Tonga, Tunisia, Uganda, Uzbekistan, Zimbabwe

<b>Type of Actor</b>	<b>Organization</b>	Omidyar Network (World Bank Donor)
Philanthropic Organization	<b>Number of Global Digital ID Projects involved in or funding</b>	31
	<b>Examples:</b>	Afghanistan, Argentina, Bangladesh, Burkina Faso, Cameroon, Cote Divoire, DRC, Ethiopia, India, Kenya, Latvia, Lesotho, Liberia, Madagascar, Mauritius, Mexico, Morrocco, Mozambique, Nepal, Nigeria, Philippines, Rwanda, Samoa, Tanzania, Thailand, Togo, Tonga, Tunisia, Uganda, Uzbekistan, Zimbabwe
<b>Type of Actor</b>	<b>Organization</b>	Thales/Gemalto (Thales acquired Gemalto in 2019)
Corporation	<b>Number of Global Digital ID Projects involved in or funding</b>	33
	<b>Examples:</b>	Algeria, Bahrain, Belgium, Cameroon, Czech Republic, Democratic Republic of the Congo, Finland, France, Germany, Hong Kong, Italy, Jordan, Kuwait, Lithuania, Luxembourg, Macao, Mongolia, Nigeria, Norway, Oman, Philippines, Portugal, Qatar, Saudi Arabia, South Africa, Turkey, United Kingdom, Uruguay, Algeria, Burkina Faso, Cameroon, France, Guinea
<b>Type of Actor</b>	<b>Organization</b>	IDEMIA
Corporation	<b>Number of Global Digital ID Projects involved in or funding</b>	9
	<b>Examples:</b>	Chad, Czech Republic, Kenya, Mexico, Morrocco, Nepal, Netherlands, Nigeria, Taiwan
<b>Type of Actor</b>	<b>Organization</b>	Mastercard
Corporation	<b>Number of Global Digital ID Projects involved in or funding</b>	4
	<b>Examples:</b>	Maldives, Nigeria, Pakistan, Panama (not National ID but supports country's public education re: digital ID and related topics)
<b>Type of Actor</b>	<b>Organization</b>	Veridos
Corporations	<b>Number of Global Digital ID Projects involved in or funding</b>	3
	<b>Examples:</b>	Bangladesh, Mexico, Zambia
<b>Type of Actor</b>	<b>Organization</b>	Mühlbauer
Corporation	<b>Number of Global Digital ID Projects involved in or funding</b>	4
	<b>Examples:</b>	Uganda, Guatemala, Kyrgyzstan, Mozambique

# A Smart-City Digital ID Business Plan: Mastercard

To illustrate how digital IDs intersect with smart-city initiatives, this section focuses on Mastercard, a key player in this arena. In 2018, Mastercard launched its City Possible initiative, which aims to establish public-private partnerships with cities around the world to develop digital IDs, as well as related financial and municipal services. Mastercard has been involved in digital ID programs in Nigeria and Kenya, and has also been promoting smart-city solutions in places like Mexico City, New York, and Los Angeles. The plan to convert New York City's municipal ID, the IDNYC, into a digital ID (discussed in the following section) was initiated during Miguel Gamiño's tenure as New York City's chief technology officer. Gamiño left the post in April 2018 to join Mastercard, where he leads City Possible.<sup>101</sup>

## Mastercard: A case study of a digital ID business plan in “Smart Cities”

In November 2018, Mastercard launched its City Possible network at Smart City Expo World Congress.<sup>102</sup> Mastercard's promotional brochure, “Smart Cities are Connected Cities,” states: “As a technology leader, Mastercard is committed to being a driving force in the private sector to make cities better . . . and to make better cities. We're doing it by connecting consumers and merchants . . . governments and financial institutions . . . NGOs and digital players.”<sup>103</sup>

Mastercard's City Possible initiative aims to establish public-private partnerships with cities around the world to develop digital IDs, as well as related financial and municipal services.<sup>104</sup> One part of City Possible is the City Key Program, which includes various types of municipal IDs and prepaid cards in partnership with cities. “Mastercard City Key combines identification, access to city services and payment functionalities in one tool to provide residents greater convenience and security, while helping local government find efficiencies in their operations and maximize taxpayer dollars.”<sup>105</sup> The City Possible program, including City Key, is led by Miguel Gamiño, the former chief technology officer (CTO) of New York City, who left that position in April 2018 to join Mastercard, where he is now Head of both Global Cities and City Possible.<sup>106</sup> In July 2019, Gamiño's longtime colleague and successor as NYC CTO, Alby Bocanegra, also left to work at Mastercard, where he is now vice president of Global City Partnerships.<sup>107</sup>

In addition to operating its own digital ID schemes, Mastercard also partners with the French biometric company IDEMIA, which currently provides over 80 percent of driver's licenses in the US.<sup>108</sup> Mastercard and IDEMIA were involved in various national ID programs, most notably in Nigeria and Kenya.<sup>109</sup> Relatedly, Mastercard is a member of the ID2020 Digital Identity Alliance, which markets digital identity as a human right, specifically citing Article 6 of the Universal Declaration of Human Rights, which states that “everyone has the right to recognition everywhere as a person before the law.”<sup>110</sup> Yet whether or not digital identification is a means to fulfill this human right is up for debate. What is clear is that for Mastercard and other corporate members of the ID2020 Digital Identity Alliance, digital identity is also a business opportunity. The program, which takes a “market-based” approach, is funded by the Rockefeller Foundation, Microsoft, and Accenture, among others.<sup>111</sup>

The City Possible network had over 220 members and candidate cities as of November 2020, including Los Angeles, New York, and London, with a goal of having a network of five hundred cities in the next two or three years.<sup>112</sup> Cities do not have to pay to join the network, but they are asked to participate by cocreating, testing, and piloting programs.<sup>113</sup> Products such as Mastercard City Insights, which provides resources for data

analytics to support decision making, are offered as an incentive for municipal government participation.<sup>114</sup> The City Possible model aims to foster collaboration between a variety of industries, communities, and academic institutions—a global networking platform for public-private partnerships.<sup>115</sup> Mastercard partners with other companies on various aspects of City Possible, including AT&T, Lyft, and IDEMIA. Microsoft announced in 2018 that it would partner with Mastercard on City Possible as a cloud computing partner, as an outgrowth of Microsoft's own CityNext initiative.<sup>116</sup>

City Possible began as a “smart cities” program that built on Mastercard's efforts<sup>117</sup> to sell its cards to municipalities for purposes of “tap-and-ride” public-transportation ticketing.<sup>118</sup> One of these public-transportation programs, launched in 2017, was a Mastercard financial inclusion initiative in Mexico linked to public transit. The program was riddled with problems. Broxel, the Mastercard licensee that issued the card (called a “metro” card), is very poorly regulated and has disastrous customer service. It froze cash balances on the metro card above 15,000 pesos (about 750 USD) and didn't allow cardholders to transfer money until they signed a contract with the company for a “premium” account.<sup>119</sup> The metro card could be used as a credit card—Broxel's current interest rates go up to 173 percent, with an average rate of 128 percent.<sup>120</sup> In 2020, it was reported that Mexico City's metro system was unable to recharge large numbers of the cards, and could not explain the reason for the problem.<sup>121</sup> The program was canceled later that year, having provided no benefit to users other than usurious credit lines.<sup>122</sup> City Possible has since expanded the scope of this work into data and identity.<sup>123</sup>

While Mastercard pitches these technologies to cities as a way to improve efficiency in city service delivery, they do not appear to be a major departure from Mastercard's business model, but a repackaging of it. Mastercard provides financial services based on transactions, whether those transactions are purchasing consumer goods, charging a metro fare at a turnstile, or crediting social-service benefits to a user account. The company generates revenue from transaction fees<sup>124</sup> and data sales,<sup>125</sup> which are both an outgrowth of the number and diversity of transactions processed.<sup>126</sup> As one Mastercard executive emphasizes, “Mastercard is not a bank; it's a network. We connect entities.”<sup>127</sup>

Though companies like Mastercard insist that they value privacy and financial solutions for the most economically marginalized people, a growing part of their business model is not only expanding the use of credit cards but also the collection and sharing of data.<sup>128</sup> The Electronic Privacy Information Center (EPIC) filed a complaint with the US Federal Trade Commission over a data-sharing agreement that Mastercard signed with Google.<sup>129</sup> City Possible outlined in a white paper the key elements of an initiative that looks to integrate staggeringly large sets of consumer data compiled from MasterCard's “more than 160 million transactions every hour all over the world.” It aims to “take the byproduct of those transactions” and, “by combining insights from how consumers shop, travel, and interact with services,” help governments become more “efficient and productive.”<sup>130</sup>

By adding identity to the mix and moving into the space of digital ID, Mastercard is able to expand its data sets.<sup>131</sup> Consumer purchases and similar transactions are very lucrative data sets, as consumers increasingly migrate their daily activities to digital channels that present endless advertising and marketing possibilities. “Transaction data is the holy grail for marketers today,” as one industry participant puts it.<sup>132</sup>

Mastercard aims to connect a billion people to the digital economy by 2025.<sup>133</sup> Named strategies include “ongoing work on government disbursement solutions, wage digitization of private sector workers, partnerships with mobile network operators, solutions for gig workers, scaling efforts with fintechs, digital platforms and digital wallets/apps, solutions addressing needs of the financially vulnerable and the expansion of CityKey and Community Pass programs.”<sup>134</sup> This highlights the strategic importance of City Possible for Mastercard to gain new cardholders.

## Financial Inclusion: Expanding the Customer Base

As a financial services company, Mastercard pitches digital ID initiatives to the public sector by suggesting that cards based on Mastercard technology will promote “financial inclusion” for populations that have limited access to financial services.<sup>135</sup> At a February 2019 City Council hearing on a proposal to add smart-chip technology to New York City’s municipal ID, the only proponent for the IDNYC smart chip was Elisabeth Rhyne, Managing Director of the Center for Financial Inclusion at Accion International, an organization that receives millions of dollars annually from Mastercard.<sup>136</sup> Rhyne spoke about financial inclusion, and mentioned the possibility that an IDNYC smart chip would allow cardholders to “build a credit score through laying down an electronic footprint.”<sup>137</sup>

That electronic footprint is valuable to Mastercard. In 2020, the company saw a 9 percent revenue decrease due to fewer transaction fees during the coronavirus pandemic, but “other revenues,” which include data sales, actually increased 14 percent during the same period, after having led all segments with a 23 percent increase the previous year.<sup>138</sup>

While Mastercard claims that it does not sell personal information related to individual transactions, it does sell “anonymized” transactional data,<sup>139</sup> which is also a privacy risk. The danger of digital IDs with Mastercard chips lies not just in the expanded personally identifiable information tied to those cards, but also in the “anonymized” data the cards will generate. This transactional data is not as anonymous as companies like Mastercard make it out to be. Individuals can be identified by aggregating transactions and other identifying information from data brokers, such as addresses and social media accounts.<sup>140</sup> The founder of one company that uses data from Mastercard and other sources to buy digital advertising for clients says that targeting individuals based on transaction data is “ridiculously easy.”<sup>141</sup>

## Fintech Partners

Mastercard is collaborating with a variety of fintech companies to deliver new services targeted at low-income and immigrant communities, such as building credit through bill payment on debit cards. Some of these initiatives are tied to municipal ID cards, similar to the effort to include smart-chip technology in New York City’s municipal ID, the IDNYC (discussed in more detail in the following section).

In Los Angeles, Mastercard partnered with fintech startup MoCaFi on the Angeleno Card, a program that is part of Mastercard’s City Key program. Mastercard is also an investor in MoCaFi.<sup>142</sup> The Angeleno Card was initiated to distribute financial aid to over a hundred thousand Los Angeles residents affected by the coronavirus pandemic, including many undocumented immigrants.<sup>143</sup> The city is planning to eventually use the Angeleno Card to streamline utility payments, help cardholders build

**In 2020, Mastercard saw a 9 percent revenue decrease due to fewer transaction fees during the coronavirus pandemic, but “other revenues,” which include data sales, actually increased 14 percent during the same period, after having led all segments with a 23 percent increase the previous year.**

credit, and digitize additional city services.<sup>144</sup> MoCaFi's business model, however, may inadvertently present a serious privacy risk, particularly for undocumented immigrants. This is because one of the key aspects of MoCaFi's value proposition is that it allows users to build credit with a rental-payment reporting feature that is run through Equifax and TransUnion, as well as a credit-score tracker from Equifax, which is in turn sold to lenders and other third parties.<sup>145</sup>

In addition to selling data to lenders, Equifax and TransUnion also sell bulk credit data to US Immigration and Customs Enforcement (ICE) through data subscription contracts.<sup>146</sup> Furthermore, Equifax runs the National Consumer Telecom & Utilities Exchange (NCTUE), an organization of the United States' largest utilities and communications companies,<sup>147</sup> through which they share personal information to track down debtors, or "skip tracing," as the industry calls it.<sup>148</sup> This utilities data is also purchased by ICE through its subscription to the CLEAR database, provided by data broker Thomson Reuters.<sup>149</sup> These and other data brokers, like LexisNexis, have contracts with local, state, and federal law enforcement agencies across the country, meaning that this data sharing will inevitably end up disproportionately affecting overpoliced communities.<sup>150</sup>

ICE is not actually interested in credit scores. It uses this personal financial data, alongside its arsenal of personal data from other commercial and government sources, to track down and target immigrants.<sup>151</sup> ICE agents and private contractors work onsite, using Thomson Reuters and LexisNexis data products, at ICE's National Criminal Analysis and Targeting Center (NCATC) in Williston, Vermont, and its Pacific Enforcement Response Center (PERC) in Laguna Niguel, California.<sup>152</sup> These are intelligence centers where ICE agents comb through personal data from data brokers, as well as social media platforms, to put together data points in order to issue immigration detainers and track down targeted individuals for arrest and deportation.<sup>153</sup> In building a "credit footprint" with Mastercard partners like MoCaFi, card users are at risk of having this information shared with law enforcement and immigration authorities in such a fashion that it can be used to identify and target them when analyzed alongside other personal data.

Mastercard also worked on its earliest municipal ID programs with a fintech company called SF Global LLC, which specifically develops financial services for immigrants, in partnership with Mastercard.<sup>154</sup> The company was founded, and is directed, by UCLA professor Raul Hinojosa-Ojeda.<sup>155</sup>

Two cities in California, Oakland and Richmond, launched municipal ID cards through this Mastercard partnership with SF Global LLC, with an optional prepaid debit banking feature, in 2012 and 2014, respectively.<sup>156</sup> The services provided include direct deposit, online purchases, and cash reloading on the card. These municipal ID debit cards have been criticized for their high transaction costs. In Oakland, the fees were lowered due to a number of problems, specifically related to high and hidden fees charged to users,<sup>157</sup> and the Mastercard chip technology was eventually removed from the card.<sup>158</sup>

**ICE is not actually interested in credit scores. It uses this personal financial data, alongside its arsenal of personal data from other commercial and government sources, to track down and target undocumented immigrants.**



## Mastercard's Digital ID Ventures

### *City Key and Municipal Programs*

In 2019, within the framework of City Possible, Mastercard launched a digital ID program called City Key, which is now active in twenty-five municipalities.<sup>159</sup> Similar to the early programs in Richmond and Oakland, it combines identification, access to city services, and payment functionalities into one tool. City Key was presented at the 2019 Annual Meeting of The United States Conference of Mayors in Honolulu, which has its own partnership with Mastercard and MoCaFi.<sup>160</sup> As Miguel Gamiño explains, “The City Key platform is something that the city could use to distribute social disbursements or subsidy programs, whether that be housing, transit, general mobility, education—all sorts of things that are disbursements of social aid.”<sup>161</sup>

The COVID-19 pandemic has given Mastercard an opportunity to push this goal forward. The company notes that in 2020, it was able to engage with several hundred national and local governments globally to help digitize relief programs and support recovery planning, such as the delivery of social disbursements.<sup>162</sup> In May 2020, Mastercard launched an initiative called Recovery Insights to provide data insights and tools to municipal governments including New York City, Madrid, and London.<sup>163</sup> Among the companies participating in the City Key program are fintech companies MoCaFi, Usio, and North Lane, as well as biometric provider IDEMIA.<sup>164</sup>

However, various City Key programs have experienced rollout problems. In Honolulu, MoCaFi obtained a twelve-month contract for \$70,000 for the city’s Immediate Response Card (IRC) pilot program,<sup>165</sup> a prepaid Mastercard used to distribute funds from the city’s COVID-19 response program.<sup>166</sup> Participants experienced problems with card activation, and many cards arrived late because the vendor was not able to ship them out in time.<sup>167</sup> The municipality announced the extension of the program until February 15, 2021, because funds were still unused.<sup>168</sup>

In November 2020, the City of San Jose funded a program called Cash for Trash to pay unhoused residents for the trash they collect along creeks, roadways, and other areas near homeless encampments.<sup>169</sup> Participants can earn up to \$20 per day on reloadable Mastercard debit cards for collecting as many as five bags of trash. The City Manager initially budgeted \$55,000 for the program; however, testimonies of five homeless residents revealed that after they had gathered trash, the city failed to pick it up or to properly pay them.<sup>170</sup> City Hall admitted to implementation problems.<sup>171</sup>

### *Driver's Licenses*

In the United States, one key new development of the City Possible program is Mastercard’s collaboration with IDEMIA on the Converged Card,<sup>172</sup> a state-issued driver’s license with payment credentials announced in October 2020. IDEMIA already provides over 80 percent of driver’s licenses in the country, in over thirty states.<sup>173</sup> This card or digital application will support unemployment benefits, housing and utility assistance, and tax refunds. In keeping with Mastercard’s business strategy, this driver’s license aims to “bring more people into the formal economy.”<sup>174</sup>

**Tying licenses to chip technology that enables tracking of users' movements and activities could heighten the risk to undocumented licenseholders if ICE requires state agencies to hand over personal information.**

IDEMIA is also working with several states on a digital driver's license, in addition to the physical Converged Card. The company has already implemented a digital license, in the form of a mobile application, with the states of Oklahoma, Delaware, and Arizona. IDEMIA notes that its digital license provides functionalities that a physical license does not, such as signing up for social services, opening bank accounts, or buying age-restricted products online.<sup>175</sup> IDEMIA's privacy policy notes that diverse personally identifiable information will be retained by the company until deleted by the user, and that IDEMIA will indefinitely retain all "anonymized" or non-personal information for product development and to "provide anonymized analytics."<sup>176</sup>

Driver's license databases have become a targeted source of information for ICE in recent years, as an increasing number of states provide license options for undocumented state residents. This includes ICE searches of personal and biometric information, such as facial recognition.<sup>177</sup> Tying licenses to chip technology that enables tracking of users' movements and activities could heighten the risk to undocumented licenseholders if ICE requires state agencies to hand over personal information.

IDEMIA's biometric work with law enforcement throughout the world makes its digital ID ventures concerning. The company holds active contracts with the US Department of Homeland Security for tens of millions of dollars, and indefinite delivery contracts potentially worth billions.<sup>178</sup> Furthermore, Amnesty International reported that an IDEMIA subsidiary was awarded a contract to supply facial recognition equipment directly to the Shanghai Public Security Bureau in 2015,<sup>179</sup> raising human rights concerns. IDEMIA was recently selected by the French Ministry of Interior to design, build, roll out, maintain, and update a new border control system based on biometric technologies—an invasive expansion of surveillance in Europe's Schengen Area.<sup>180</sup> In Nigeria and Kenya, Mastercard and IDEMIA have rolled out national digital ID programs, both of which have run into severe legal obstacles over data privacy risks.

### **National Digital IDs**

In 2014, Mastercard announced a digital ID program in Nigeria. The Nigerian Identity Management Commission (NIMC) launched the National Electronic Identity Card (e-ID card) pilot program with thirteen million Nigerians, with the idea of extending it to all of the country's citizens.<sup>181</sup> The system was designed to disburse social benefits, make deposits and withdrawals, and set up savings accounts through local banks partnering with Mastercard. It immediately raised data privacy issues, and *Foreign Policy* characterized it as the "Orwellian Biometric ID brought to you by Mastercard."<sup>182</sup>

In June 2019, the Federal High Court of Nigeria directed NIMC to improve its data privacy and security systems in order to avoid a breach of citizens' rights to privacy.<sup>183</sup> Mastercard is also in a legal dispute with a local information technology firm, originally granted the contract for the e-ID cards in partnership with Mastercard, that accuses Mastercard of breach of contract.<sup>184</sup> A Nigerian Federal Court ordered Mastercard to stop issuing Nigerian National Identity Cards in 2019 due to the legal dispute.<sup>185</sup>

Mastercard and IDEMIA are both working in Kenya through government contracts on new public-sector partnerships. IDEMIA signed a \$59 million contract for the controversial Huduma Namba initiative in Kenya,<sup>186</sup> which aims to capture and consolidate millions of Kenyans' data into a single digital system, the National Integrated Identity Management System (NIIMS). On January 30, 2020, the High Court of Kenya ordered a stoppage of the implementation of NIIMS due to several key gaps in the legal framework of data privacy, and found the proposed collection of DNA and GPS location to be unconstitutional.<sup>187</sup> Nonetheless, the Kenyan government is pushing ahead with the initiative<sup>188</sup> after the implementation of additional regulations.<sup>189</sup>

In addition to the Huduma Namba, in 2017 Mastercard launched the Huduma Card, a prepaid card with chip and PIN technology, which the Kenyan government will use to disburse social payments.<sup>190</sup>

**The system was designed to disburse social benefits, make deposits and withdrawals, and set up savings accounts through local banks partnering with Mastercard. It immediately raised data privacy issues, and Foreign Policy characterized it as the “Orwellian Biometric ID brought to you by Mastercard.”**

# III. IDNYC: A Financial Services and Smart Cities Case Study

## What Happened in NYC?

In 2015, New York City implemented a new municipal identification program: the IDNYC. The aim of the IDNYC was to provide a safe, accessible, and government-issued ID card for all New Yorkers, including immigrant, homeless, and other populations that often faced barriers when attempting to acquire other forms of government-issued identification. A coalition (later called the NYC Municipal ID Coalition) had formed to advocate for the program and to ensure that the privacy and security of cardholders was central to the design on the card.<sup>191</sup>

This was a key principle, as IDNYC populations included communities that are vulnerable to overpolicing and other forms of government intrusion—namely the homeless, formerly incarcerated people, gender non-conforming people, youth, and undocumented immigrants. In addition, the IDNYC was intended to provide some protection to those who were subject to frequent interaction with the NYPD, as the municipal ID would limit the cases of those who were brought to a precinct due to lack of ID.

On the whole, the creation of the IDNYC was an exercise in partnership between a new municipal administration (Mayor Bill de Blasio) and longtime advocates for the communities most in need of a program like the IDNYC.<sup>192</sup> This project got underway at a time of federal policy gridlock, so the community input into the local program represented a positive pathway on how cities could include community stakeholders to design projects that offer protection, inclusion, and access. The City knew that trust and security were critical for the program's success, and worked closely with advocates and community members. Communication, collaboration, and negotiation were central to the process, and the ID program implemented by the City in 2015 was promoted widely by advocates given the benefits to the community.<sup>193</sup>

A few years later, members of the NYC Municipal ID Coalition learned that the de Blasio administration was planning to dramatically change the IDNYC program. In May 2018, without consulting with the coalition, the administration issued a Request for Expressions of Interest (RFEI) in the “IDNYC Dual Interface Card Payment Initiative.” The RFEI was directed at financial services providers interested in partnering with the City to embed smart-chip technology in IDNYC cards.<sup>194</sup>

At this time, the IDNYC was the largest such program in the country, with nearly 1.2 million New Yorkers enrolled.<sup>195</sup> The stated aim of the proposed IDNYC smart-chip plan, as outlined in the RFEI, was to “support integrations with public and private partners, such as the MTA’s planned contactless fare payment system and NYC Health + Hospitals medical records, and allow payments with private vendors throughout the city.”<sup>196</sup> The financial services company would “provide IDNYC cardholders with a mixture of card funding/loading options that are accessible to the various populations that IDNYC serves, including cardholders with bank accounts, unbanked and underbanked individuals, senior citizens, and students, regardless of immigration status.”<sup>197</sup>

During the IDNYC’s initial design, in 2014, municipal ID coalition members opposed the inclusion of a similar reloadable prepaid debit feature, and a prepaid function was not integrated into the ID.<sup>198</sup> Advocates at the time cited widespread problems associated with the prepaid debit card industry, including inferior consumer protections and high and hidden fees, as well as privacy concerns—all of which could harm New Yorkers and undermine public confidence in the IDNYC program.<sup>199</sup> Groups also cited the experience of cities like Oakland, CA, that incorporated prepaid debit services into their municipal ID cards only to face backlash and negative publicity, as cardholders found themselves hit with high and hidden fees.<sup>200</sup> In fact, in the Center for Popular Democracy’s 2015 toolkit for cities on how to successfully design municipal IDs, the organization recommended against incorporating financial services on the IDs, given the array of risks inherent to this kind of integration.<sup>201</sup>

When the de Blasio administration launched its new bid to integrate a smart chip in 2018, the security risks were even more pronounced for New Yorkers. This proposal would facilitate data collection about New Yorkers by integrating financial services and a host of other functions on the ID card, while the Trump administration was carrying out unprecedented attacks on immigrants and communities of color. Threats to New Yorkers were not limited to the Trump administration. The City had just defended against a lawsuit brought by two members of the New York State Assembly who sued seeking to stop the City from destroying copies of IDNYC cardholders’ documents—such as foreign passports and birth certificates—used to verify their identities to obtain the IDNYC.<sup>202</sup>

NYC immigrant rights, economic justice, and other advocacy groups met with administration officials in the summer of 2018 to raise concerns and urge the City to change course. But the administration depicted the RFEI as merely exploratory and assured groups that no action would be taken without further consultation.<sup>203</sup> Then, in December 2018, the administration issued a “solicitation for negotiated acquisition.”

Municipal ID Coalition members immediately mobilized to stop the plan. In a December 26, 2018 letter to the mayor, a dozen groups called on the administration to halt the smart-chip procurement process, warning that “the incorporation of the smart chip, and the City’s intention to enable multiple uses for the IDNYC, has the potential to expose New Yorkers to a wide range of privacy and surveillance risks. The City’s interest

in including a small dollar loan feature in the card raises additional red flags, as this could make IDNYC cardholders vulnerable to high-cost loans and other abuses typically associated with card-based lending. These are threshold concerns that call for careful scrutiny; the process should not be rushed or allowed to bypass meaningful public input.”<sup>204</sup>

Over the course of the next year, Municipal ID Coalition members met with administration officials, submitted detailed memos, and presented research enumerating privacy, data protection, surveillance, consumer protection, financial technology, fair lending, and equity issues associated with the IDNYC smart-chip proposal. NYC groups were joined in these efforts by national experts who confirmed that the City would in effect be creating a platform through which a range of public and private services would be connected to people’s identity cards—now and going forward—without a clear sense of the kinds of data that would be generated, shared, or used.<sup>205</sup> Yet many of the questions raised by advocates remained unanswered, as the administration held that the process was still in the exploratory phase or because they were not allowed to disclose information due to procurement rules.

Advocates warned against specific risks associated with financial technology. According to U.S. PIRG and the Center for Digital Democracy, “the use of personal data by Fintech companies is pervasive and touches every aspect of their business operation, including marketing, customer loyalty management, pricing, fraud prevention, and underwriting. Fintech companies use many new on- and offline data sources, either directly collecting data from consumers or relying on third parties for Big Data analytics to classify consumers and to make predictions about them.” The consequences “are not well understood and may further increase social inequities.”<sup>206</sup> New Economy Project cited fintech companies’ consistent and aggressive attempts to weaken or circumvent state consumer protection laws, such as New York State’s strong usury law.<sup>207</sup> Additionally, under the Trump administration, federal regulators sought to exempt fintech companies from key consumer protection rules, in the name of fostering “innovation.”<sup>208</sup> The national bank regulator moved also to issue “special purpose charters” to nonbank fintech companies, conferring broad powers to evade state consumer-protection laws.<sup>209</sup>

Municipal ID Coalition members emphasized that attaching a fintech smart chip to the IDs would do nothing to confront long-standing structural barriers to banking access for Black, brown, and immigrant New Yorkers; instead, this effort would serve to reinforce racial inequities.<sup>210</sup> Indeed, local fair-lending and financial-justice groups had already worked with City officials during IDNYC’s design phase to ensure that the ID cards met federal regulations so that banks and credit unions could accept IDNYC as primary identification to open accounts. In 2015, the City secured guidance from the federal regulators affirming that banks are permitted to accept IDNYC under Know-Your-Customer regulations.<sup>211</sup> And these efforts were partially successful—more than a dozen banks and credit unions accept IDNYC as a primary form of identification to open accounts.<sup>212</sup> In the program’s first year alone, more than nine thousand people used IDNYC successfully to open bank and credit union accounts.

Administration officials described the 2018 smart-chip proposal as a solution to address unbanked communities.<sup>213</sup> However, this plan would not likely expand access to actual bank and credit union accounts—which was a primary goal of the initial IDNYC.<sup>214</sup> Instead, it would offer “a chip enabled card and associated financial services.”<sup>215</sup> Furthermore, the city’s research had found that the top reason New Yorkers hesitated to get an IDNYC card was the concern that it was being used to monitor people, further underscoring how the IDNYC smart chip proposal failed to respond to New Yorkers’ concerns and needs.<sup>216</sup>

In a September 2019 letter to Mayor de Blasio, advocates wrote:

The administration has asserted that an IDNYC-financial technology (fintech) partnership would “eliminate banking deserts.” This is false. Fintech companies are not banks. They do not provide branches and personnel that customers can readily access. They do not have legal obligations to reinvest in communities. And they are not subject to the strong, uniform federal regulations and consumer protections that govern banks and credit unions. Moreover, the fintech industry is notorious for data breaches and a business model that relies on the collection and sale of people’s personal data. By steering undocumented and low income New Yorkers to these entities, the City would be perpetuating, not resolving, inequality in our banking system and potentially facilitating IDNYC cardholders’ exploitation.<sup>217</sup>

That same month, New York City councilmember Carlos Menchaca introduced a bill to prohibit a smart chip from being added to the IDNYC.<sup>218</sup> At an October hearing on the bill, the NYC Municipal ID Coalition submitted a letter signed by sixty-five organizations—including community, labor, immigrant, civil rights, legal services, and economic justice organizations—expressing “united and unqualified opposition to the administration’s plan to add financial technology and a host of integrations to NYC’s municipal identification (IDNYC) cards.”<sup>219</sup> The New York Immigration Coalition and Make the Road New York, which played a key role in promoting the IDNYC, testified that the proposed changes would introduce risks that would outweigh any benefits and were concerned that they could no longer promote the IDNYC among the populations it was designed to serve if the plan moved forward.<sup>220</sup> The Immigrant Defense Project and the New York Civil Liberties Union highlighted the surveillance and policing risks to all New Yorkers, and in particular immigrant New Yorkers who were especially vulnerable under the Trump administration’s immigration policing agenda.<sup>221</sup> The New Economy Project warned that the proposal would undermine longstanding efforts to promote responsible lending, crack down on unfair and abusive industries and practices, and keep payday and other forms of predatory lending out of New York.<sup>222</sup>

Financial justice activists and community development financial institutions (CDFIs) with decades of experience serving historically redlined communities also testified in opposition to the IDNYC-fintech plan. The Association for Neighborhood & Housing Development noted:

“Fintechs are not banks and prepaid debit cards are not the same as bank accounts. Products like the prepaid debit cards the city is proposing incorporating as part of IDNYC are symbolic of a two-tier banking system that pushes underserved populations—low-income, minority, immigrants—to prepaid debit cards while higher income customers have access to full-service bank accounts that promote savings and can lay the groundwork to achieving larger financial goals, such as purchasing a home or financing a business.”<sup>223</sup>

In opposing the IDNYC smart-chip proposal, community groups and fair-lending advocates called on the city to pursue progressive and equitable solutions to banking inequality. As stated by the Lower East Side People’s Federal Credit Union: “Our communities don’t need more reloadable cards, we need to ensure that people can build assets and support the development of their communities. . . . Fintechs and out-of-state banks involved with reloadable prepaid cards do not have community reinvestment responsibilities in New York. Funds that would be deposited on these cards would therefore flow outside NY and not yield the benefits to our communities.”<sup>224</sup> More equitable solutions, groups argued, would include providing greater support for CDFIs with successful track records serving historically redlined communities.<sup>225</sup> Community development credit unions accepted IDNYC from day one to open accounts, as well as to provide responsible loans, Individual Taxpayer Identification Number (ITIN) application services, free tax preparation and financial counseling, and a range of other services. As financial cooperatives, these credit unions offer the additional benefits and safeguards of democratic community ownership and control.

**The clear risks posed to the communities that needed and benefited from the IDNYC were compounded by the lack of consultation and transparency from a previously collaborative mayoral administration.**

The clear risks posed to the communities that needed and benefited from the IDNYC were compounded by the lack of consultation and transparency from a previously collaborative mayoral administration. At past junctures, feedback was solicited, negotiated, and applied. Yet with the smart-chip proposal, the community advocates and experts who had been previously consulted were now viewed by the administration as obstructive to the goals of this project. As a result, the City missed an opportunity to work collaboratively to navigate the critical questions of financial inclusion and economic justice, as well as meaningful security from local and immigration policing for vulnerable community members. Rather than working together to identify and propose mutually developed solutions for these key issues, community security was pushed aside in favor of for-profit companies and financial technology. For advocates who had deeply believed in both the promise of the IDNYC in its current form, and in partnerships with municipal governments to develop programs that could support vulnerable and marginalized communities, this was a disappointing and difficult process and outcome.

While the IDNYC smart-chip proposal seems to be dormant for the time being, advocates remain vigilant, well aware that a fintech integration could be pursued by a future administration, such as the one that was elected in November of this year.



## Timeline of IDNYC

On May 30, 2018, the NYCx Challenge platform published the IDNYC smart-chip Request for Information (RFI).<sup>226</sup> The Mayor's Office of the Chief Technology Officer (CTO) recommended to the Mayor's Office of Immigrant Affairs (MOIA) to use its NYCx Challenge platform.<sup>227</sup> The NYCx public-private initiative was launched by then Chief Technology Officer Miguel Gamiño in 2017.<sup>228</sup> In April 2018, a month before the publication of the IDNYC smart chip RFI, Gamiño left his position as CTO to work for an undisclosed company.<sup>229</sup> In May, Mastercard announced that he was their new executive vice president for Global Cities. Gamiño also continued to participate on the advisory council of one of the CTO's partner organizations and a trade association for the New York technology sector, Tech:NYC, throughout the smart-chip proposal process.<sup>230</sup>

In January 2019, the *New York Daily News* reported on Mastercard's ties to NYC Deputy Mayor for Strategic Policy Initiatives J. Philip Thompson, raising a possible conflict of interest in the design and promotion of the IDNYC smart-chip project.<sup>231</sup> The City has not yet revealed any corporate partners in the project or if Mastercard participated in the smart-chip solicitation, but Thompson has acknowledged that his ties to Mastercard create "an appearance of conflict," saying to the *Daily News*, "I've kind of walled myself off of that precisely anticipating you might show up one day and ask questions like this."<sup>232</sup>

The MasterCard-Microsoft City Possible alliance was announced the day after Gamiño joined Mastercard at an event sponsored by both companies, with panels led by his recent colleagues from the CTO's office.<sup>233</sup> The current CTO for New York City, John Paul Farmer, who replaced Gamiño's former chief of staff in June 2019, comes to the office directly from Microsoft.<sup>234</sup>

Mastercard's initiatives in NYC include the NYC Commuter Prepaid Mastercard, the NYC Recovery Data Partnership (RDP), and the partnership with the NYC Department of Small Business Services.

The status of the smart-chip proposal is still unclear, and the City has repeatedly delayed responses to multiple Freedom of Information requests submitted for documents and correspondence related to the proposal. In May 2021 City Councilmember Robert F. Holden introduced legislation designating a city agency to study the feasibility of initiating a pilot digital ID program, and in September 2021 the City Council Technology Committee held a hearing on this legislation.<sup>235</sup> The shift in leadership in the administration provides an opportunity to reexamine this process and institute safeguards to ensure that tech-driven initiatives do not increase surveillance, reinforce structural inequities, and undermine democratic governance.

**Figure 4. Timeline of IDNYC Smart-Chip Project.** This timeline details the evolution of the proposal to put a smartchip on the IDNYC.

**January 12, 2015**

New York City launches IDNYC program.

**October 24, 2016**

De Blasio administration chooses Miguel Gamiño as new NYC Chief Technology Officer (CTO).

**March 2017**

Alby Bocanegra, who worked for Gamiño when he was San Francisco CIO, joins him in New York as his Chief of Staff.

**April 2017**

Jeremy Goldberg leaves San Francisco Mayor's Office of Civic Innovation, where he oversaw public-private partnerships, to join Gamiño's NYC staff as Deputy CTO.

**Date unknown<sup>236</sup>**

Mayor's Office of the CTO recommends that the Mayor's Office of Immigrant Affairs (MOIA) use its NYCx Challenge platform to publish the IDNYC smart-chip RFI.

**October 2017**

Gamiño launches public-private NYCx initiative with a Leadership Advisory Council, including the Microsoft CTO, Google CIO, and Tech:NYC Executive Director. Jeremy Goldberg is named NYCx Managing Director.

**March 6, 2018**

Gamiño is listed as a member of the advisory council of Tech:NYC, a partner organization of the CTO's office. He continues to serve on the Tech:NYC advisory council in his capacity as a Mastercard executive.

**March 14, 2018**

Gamiño announces he will step down as CTO to work at an unnamed company "very much along the lines of what he's been doing in the public sector."

**April 2018**

Gamiño leaves Mayor's Office of the CTO. His chief of staff, Alby Bocanegra, takes over as interim CTO, a position he will hold for over a year with no permanent replacement throughout the IDNYC smart-chip solicitation process.

**May 8, 2018**

Mastercard introduces Gamiño as the company's executive vice president for Global Cities. Gamiño is now executive vice president of Enterprise Partnerships and Head of Global Cities and City Possible.

**May 8-10, 2018**

Gamiño presents at Smart Cities NYC 2018 (sponsored by Mastercard), as do the managing director, program director, and program lead of NYCx, the public-private initiative launched by Gamiño when he was CTO.

**May 9, 2018**

Mastercard announces the City Possible collaboration with Microsoft for payment, data analytics, and cloud technologies, quoting Gamiño as saying, "We invite public and private sector leaders to join us."

**May 30, 2018**

Smart-chip RFI is published on the NYCx Challenge platform, with responses from financial services providers due by June 29, 2018. NYCx is the body responsible for industry outreach.

**Summer 2018**

Advocates express concern about the addition of smart-chip technology to IDNYC. Are told that it is "exploratory." City promises to provide additional information to advocates but nothing is provided.

**December 14, 2018**

MOIA and the Human Resources Administration (HRA) issue notice of intent to solicit proposals for IDNYC Negotiated Acquisition from a financial services provider, with responses due by January 8, 2019.

**December 26, 2018**

Organizations submit a sign-on letter calling on the administration to halt the procurement process. Resubmitted on January 11, 2019 with more signatories.

**January 7, 2019**

City administration meets with advocates to discuss IDNYC smart-chip plan.

**January 11, 2019**

Advocates send memo to administration reiterating opposition to smart-chip plan. Request answers to questions from the City related to data collection, privacy and surveillance risks, RFID technology, IDNYC integration with fintech, financial risks, and costs.

**February 11, 2019**

At a City Council hearing on the IDNYC smart-chip proposal, the only person to speak in favor is from the Center for Financial Inclusion at Accion International. The speaker does not disclose that her organization receives millions of dollars annually from Mastercard.

**March 7, 2019**

New York City and French company Edenred announce a five-year agreement for the company to administer the commuter benefits program for city employees, including the NYC Commuter Prepaid Mastercard. This program allows for New York City employees to deduct up to 270 pretax dollars from their paycheck onto the Mastercard.

**April 23, 2019**

John Paul Farmer of Microsoft is announced as the new NYC CTO to replace interim CTO Bocanegra, effective June 3, 2019.

**April 24, 2019**

A Freedom of Information Law (FOIL) request is made to NYC for documents and emails related to the IDNYC smart-chip proposal. City has repeatedly delayed responding to this request.

**May 13-15, 2019**

Former NYC CTO and current Mastercard executive Gamiño, interim CTO Bocanegra, and Microsoft executive and incoming NYC CTO Farmer present at Smart Cities NYC 2019, an event sponsored by Mastercard, Microsoft, and their joint City Possible initiative.

**July 2019**

Former NYC interim CTO Bocanegra joins Mastercard as vice president of Urban Tech Partnerships and, in October 2020, is named to his current position of vice president of Global City Partnerships.

**September 12, 2019**

Organizations submit a letter to Mayor Bill de Blasio opposing the smart-chip plan. Resubmitted on October 2 with additional signatories (over 65 organizations).

**September 12, 2019**

Councilmember Carlos Menchaca introduces municipal legislation, Int.1706, that would prohibit smart-chip technology from inclusion in IDNYC.

**Second half of 2019 (unspecified dates)**

Mastercard lobbies the office of City Council Speaker Corey Johnson in the second half of 2019, on a municipal bill concerning “consequences of policy change” in relation to chip technology, presumably in relation to IDNYC.<sup>237</sup>

**October 2, 2019**

Hearing on smart-chip bill, Int. 1706, in Committee on Immigration. The bill has 20 cosponsors and support from Public Advocate Jumaane Williams. In December, advocates are told the bill is on hold pending further action from the administration.

**January 1, 2020**

Expected start date for the provision of financial services with an IDNYC smart chip, as per the smart-chip RFI published in May 2018. Status of proposal unclear. IDNYC card program is renewed, with minor updates, five years after it was launched. New benefits include a sign-up bonus with Costco.

**November 10, 2020**

Mastercard announces that NYC has joined Mastercard’s City Possible Network, led by former NYC CTO Gamiño.

**November 13, 2020**

Another FOIL request sent to NYC agencies requesting records, communications, and memoranda related to the IDNYC smart-chip proposal.

**March 24, 2021**

Mastercard joins the NYC Recovery Data Partnership (RDP), launched in July 2020, to share aggregated retail spending data with the NYC government, categorized by industry and aggregated by neighborhood, to analyze spending patterns over time. The data shared is from Mastercard’s Geographic Insights platform.

**March 25, 2021**

NYC Department of Small Business Services partners with Mastercard on “NYC In Solidarity,” a campaign through which NYC will support online shopping and promotion of Black women-owned small businesses. The initiative is supported by J. Phillip Thompson, Deputy Mayor for Strategic Policy Initiatives and Cochair of the Racial Inclusion and Equity Taskforce, previously questioned for his ties to Mastercard.

**May 12, 2021**

City Councilmember Holden introduces legislation to conduct a feasibility study on a digital ID pilot

## IV. Pathways Forward

As the case study of the IDNYC smart-chip proposal in New York City illustrates, smart-city efforts present a number of challenges, particularly when these efforts purportedly seek to address complicated social and economic issues. Many smart-city and digital ID projects employ language such as “inclusion” and “access,” but as the IDNYC case illustrates, such initiatives can actually undermine long-standing struggles for economic and social justice. The implementation of digital IDs and other smart-city initiatives demonstrates that there are serious concerns that are rarely mitigated or redressed.

But the fact that smart-city efforts are vexed does not mean they will not be pursued aggressively. In fact, smart-city efforts—or more generally, private-public collaborations—will likely become more common because of the growing power of technology corporations combined with the number of challenges cities face with limited resources to bear. This is not because technological solutions are the panaceas for all problems; rather, they present new or novel opportunities for mitigation and modernization. Yet in order for such opportunities to be leveraged, smart-city projects must be intentionally designed following best practices and adequate safeguards must be in place to ensure that implementation and outcomes are aligned with the public interest, or that there are at least mechanisms in place to redress harms if they occur. Smart-city project development and implementation tend to move at an accelerated pace compared to other government undertakings, but they should be pursued methodically and with community consultation.

The following best practices and policy recommendations are a starting point for actions public and private actors can take to improve the social and political (though not necessarily technological) aspects of smart-city project development and implementation. By adopting such practices, smart-city project development and implementation can be more disciplined and accountable. Adequate safeguards are necessary to ensure that implementation and outcomes are aligned with the public interest and that there are mechanisms in place to redress harms if they occur.

### Best Practices and Policy Recommendations

#### **1. Create Meaningful Public and Stakeholder Engagement Opportunities throughout The Smart-City Project Development and Implementation Process.**

Build relationships with a wide range of community-based organizations and civil-society organizations focused on issues related to economic and racial justice, including policing (domestic and immigration), civil rights, privacy, and surveillance. These stakeholders should be involved in the development of smart-city project mission statements and goals, as well as participate in assessments of whether a selected technology or project plan is aligned with the project’s mission and vision.

## 1. Create Meaningful Public and Stakeholder Engagement Opportunities throughout The Smart-City Project Development and Implementation Process. (Continued)

Create public-education materials that explain the project goals, key components, parties involved, and potential risks. Public-education materials should be accessible and readable to a broad audience. To achieve this, smart-city projects should incorporate components of this checklist:

- ✓ Draft documents for a 7–8th grade reading-comprehension level and for optimal readability.<sup>238</sup> This is the average reading-comprehension reading level in the United States,<sup>239</sup> and it is used as a benchmark for written medical guidelines. Creating documents for the average readability level can ensure that all project materials can be understood by a majority of residents.
- ✓ Explain technical components of the project in a way that does not rely on technical jargon. You can name the type of system of technology employed, but you should use descriptive language to explain its capabilities and how it may impact individuals or communities.
- ✓ Be specific! The risks associated with smart-city projects and technologies are not always universal. This means that not all community members share the same risk, particularly when projects include data collection and sharing components. When drafting explanations of risks associated with smart-city projects or technologies, do not limit the explanations to generic community harms. Instead, describe how particular demographics or other collective categories of people may be impacted or at risk.
- ✓ Ensure that materials are offered in other languages prominent in your community. Increasing language accessibility can also be achieved by working with community-based organizations or other community partners; they may be able to provide translation services for written material or at public events.
- ✓ Make information available in different formats (digital, print, etc).

Set up a process that incorporates feedback at different stages and allows for reevaluations and improvements. This can include creating a community advisory board to advise on project development and implementation. This advisory board should not only include institutional representatives (e.g., civil-society or public-interest organizations), but there should be direct participation by community members with some supportive resources or compensation (e.g., honorariums and transportation support) for their time unless such arrangements are expressly prohibited by law.

Consider participatory procurement approaches. Civic participation is central to effective democratic procedures, so inviting constituents to participate in the development and implementation of smart-city efforts can be beneficial. But constituents should be treated as partners in the process, not consumers or end users who are informed after the fact of decisions made or provided predetermined alternatives to choose from. Thus, creating a participatory smart-city project means creating a deliberative process that can engage existing participatory functions or mechanisms within the city, or implementing existing models, like participatory budgeting.<sup>240</sup>

## 2. Anticipate Potential Abuses or Misuses of the Smart-City Project and Proactively Create Safeguards or Policies to Mitigate Harms and Provide Community Notice.

Create a comprehensive and public privacy policy that should, at minimum, include:

- Information about the project’s data management practices<sup>241</sup> that provides answers the following questions:
  - What data is collected?
  - What data is capable of being captured or observed but is not currently used or activated in the smart-city technology or project?
  - Who owns the data?
  - Are there data-purging or auditing requirements?
  - If data collected by a smart-city technology or project is anonymized, deidentified or aggregated, who performs this task and what data is impacted?
  - What institutions or actors will have access to data? What policies or procedures regulate data access, sharing, and usage?
- An explanation of existing and applicable privacy, antidiscrimination, and consumer-protection laws.
- Directions on where to seek redress or report an issue if a person believes their rights have been violated or they have been harmed by a smart-city technology or project.

Publish a privacy policy prior to the smart-city project implementation and empower a government body or actor to monitor compliance during and after project implementation.

Create project-specific data-minimization policies that seek to reduce the sharing or use of government data that could increase risk of negative or discriminatory outcomes. This can include expressly limiting potentially flawed data or data sources like gang databases or outdated and adverse constituent information (e.g., information excluded from consumer reports).<sup>242</sup> Policies can also include cross-context use constraints,<sup>243</sup> which bar or limit the sharing and use of data collected in one context for use in another context.

Assess and update existing redress and grievance mechanisms. Many existing redress or grievance mechanisms (e.g., administrative appeals) may not be sufficient or appropriate for the types of harms that can stem from smart-city projects. For example, existing mechanisms may be overly burdensome to constituents (e.g., requiring evidence that may not be accessible to the public) or the process may be too slow to mitigate urgent or immediate harms. If existing policy allows residents to pursue a private right of action for harms related to a smart-city project, the jurisdiction should assess whether there are legal resources for low-income residents so this form of redress is accessible to all residents.

In emergency circumstances where local, state, or federal executive officials issue executive orders that can compromise constituents’ rights or impair project policies (e.g., global pandemic or declaration of war), government actors should assess these implications and update public project materials and policies to provide notice of changes.

### 3. Implement Transparency and Accountability Practices and Approaches.

Create open-source platforms and other mechanisms that minimize barriers to public access.

Perform and publish impact and equity assessments.

Assess project-specific best practices. A growing body of smart-city research and publications offers best practices, considerations, and recommendations for specific types of smart-city projects, such as digital IDs and data governance.<sup>244</sup> Public- and private-sector actors leading smart-city projects should consult relevant research, reports, and other guidance during the project-development phase.

Develop mechanisms to make data relevant to the public interest publicly accessible. This should apply to publicly and privately generated data that is relevant to government regulatory and enforcement functions. Examples of this type of data can include privately generated and aggregated transportation data that is relevant to regulating public right of ways or publicly generated and aggregated law enforcement data relevant to enforcing antidiscrimination or civil rights laws.

When smart-city projects or project-related policies require the government or a third-party vendor to deidentify, aggregate, anonymize, or perform other forms of data manipulation, there should be public documentation of who performed these tasks, a summary of the types of data or datasets impacted, and a brief explanation of why these tasks are being performed (e.g., to protect residents' privacy or to ensure compliance with a specific law). This type of public documentation is necessary because the lack of acknowledgement that open data has been manipulated can distort public perceptions regarding data collection, surveillance, or other methods used in a smart-city project.

Implement consent requirements for smart-city projects that involve real-time data collection or collection of sensitive data. For example, New Hampshire has a law regarding smart meter gateway devices that requires a provider to obtain written consent before installing a device at the person's home or business,<sup>245</sup> and Illinois's Biometric Information Privacy Act requires entities seeking to collect, capture, purchase, buy, or otherwise obtain consumer biometric information to provide written notice and receive written consent from consumers.<sup>246</sup>

# Endnotes

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- 193 Coalition members and the City had to negotiate around a proposed policy to retain the documents used to prove identity. While advocates pushed for no document retention, the compromise offered and accepted by many members of the coalition was a shorter retention period with the option to consider ending the retention policy after two years. Early in the Trump administration, two New York State assembly members sued to prevent the City from deleting the documents, but the judge ruled in favor of the City. See Liz Robbins, “New York Can Destroy Documents, Judge Rules in Municipal ID Case,” *New York Times*, April 7, 2017, <https://www.nytimes.com/2017/04/07/nyregion/new-york-can-destroy-documents-judge-rules-in-municipal-id-case.html>.
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