

U.S. Chamber of Commerce
Technology
Engagement Center

Government Digitization: Transforming Government to Better Serve Americans



Table of Contents

Introduction	3
Five Benefits of Digitizing Forms.....	4
By the Numbers.....	8
Top Areas to Digitize	10
Passport Applications (DS-11) and Renewals (DS-82).....	12
Green Card (I-485)	13
U.S. Individual Income Tax Return (1040).....	14
Petition for a Nonimmigrant Worker (I-129)	16
Social Security Application (SS-5)	18
U.S. Customs Declaration (6059B).....	19
Employment Eligibility Verification (I-9)	20
Health Records and Vaccine Cards.....	22
Notarized Documents.....	23
Driver's Licenses.....	24
Professional Licenses.....	25
Case Study: e-Estonia	26
Case Study: Getting Married.....	28
Policy Recommendations	30
Conclusion.....	31
Appendix	32
Endnotes	37

Introduction

Government understands the importance of modernizing and digitizing. In an era of rapid digitization, the U.S. government has made little progress in updating its IT systems and processes to improve efficiency and access to the American people. Many government IT systems lag far behind the private sector. A more data-driven digital infrastructure will enable government systems to be more resilient, inclusive, and informed. It also will enable the U.S. to respond quickly and effectively to future crises as well as better serve Americans' daily needs.

Numerous government functions are still conducted via paper or require outdated and inefficient processes. In our increasingly digital and mobile world, Americans expect government to keep up with the amenities and benefits of the on-demand economy and digitized information collection systems that provide a much more accessible, cost-efficient, and user-friendly experience.

The Paperwork Reduction Act (PRA)¹ was signed into law in 1995 and governs how federal agencies collect information from the public. One of its primary goals is to calculate “burden hours” and costs of government processes in order to reduce its toll on the public. These numbers are publicly displayed on federal forms. Nevertheless, despite laying the groundwork for more government awareness and accountability, the PRA neither takes into account current technologies nor provides guidance on modern data collection.

To hasten the adoption of digitized information collection, Congress passed the 21st Century

Integrated Digital Experience Act (IDEA) in 2018, which aimed to improve the digital experience for government customers and reinforces existing requirements for federal public websites. Yet progress has been stalled. Because no statutorily required guidance has been issued to help implement the law, agency implementation has been inconsistent.² According to a survey of a random sample of government forms, fewer than 2% were fully compliant with the act.³

Only about 20% of the more than \$90 billion of the U.S. government's annual IT spending is devoted to modernization.⁴ The 2018 Modernizing Government Technology (MGT) Act sought to improve on this by establishing a fund within the Department of the Treasury for federal agencies to apply for loans to update their outdated systems. Congress appropriated \$1 billion to the fund through the American Rescue Plan. However, the allocations so far have mostly focused on cybersecurity and not on updating federal legacy systems,⁵ and there is still a long way to go.

According to McKinsey,⁶ government digitization, using current technology, could generate over \$1 trillion annually worldwide. Not only would digitizing government services better serve Americans, it would also cut costs, increase efficiency, build resilience, and eliminate waste.

America leads the world in technology and innovation. Government should capitalize on these resources and collaborate with the private sector to bring its services into the 21st century.



Five Benefits of Digitizing Forms

Serving Americans

Digitizing government forms to meet the needs of the public should be paramount for policymakers. An easier, more efficient, and less burdensome citizen experience would help increase trust in the government, especially when that trust is near historic lows.⁷

Today, citizens expect to be able to engage with government through modern means, including smartphones and computers. Reports have found that 85% of Americans own a smartphone, with 27% of adults in low-income households being smartphone-only internet users.⁸ Moreover, the pandemic-propelled shift to remote work is greatly accelerating the digitization trend throughout the country.

An example of the change in how citizens interact with government is in the shift from paper filing to e-filing tax returns. In 2001, only 30% of Americans e-filed their taxes. By 2021, as technology quickly developed, that number rose to over 95%.⁹

It is government's responsibility to meet its constituents in how they want to and expect to engage. Nearly 85% of Americans indicate that they hold government to the same, or higher, standard as their commercial providers.¹⁰ While citizens' satisfaction with digital services has improved as government has embraced more digital solutions, 4 in 10 citizens are still not satisfied.

Reducing Costs

Beyond poor service, using paper-based and manual processes cost Americans an estimated \$117 billion and government agencies an estimated \$38.7 billion every year.¹¹ Using hard copies requires substantial worker hours to capture and process the information and often creates bottlenecks. Digitizing these forms would reduce costs in materials and required staff hours.

At the federal level alone, government agencies combined spend nearly \$143 billion on information collections every year. In the 12 months prior to August 30, 2022, across all federal agencies, there were 9,858 unique forms and over 106 billion forms processed.¹² A 2009 survey of federal employees¹³ found that the federal government spent nearly \$1.3 billion a year on employee printing alone, \$440.4 million of which was unnecessary. Although the data is now dated, it gives a sense of scale for associated costs of paper-based approaches.

Modernizing these systems would not only improve service, security, and efficiency, but it would save money for government agencies and, by extension, taxpayers.

Increasing Efficiency

Over the previous year, about 10.5 billion hours were spent by the public on government paperwork.¹⁴ Adopting digitized processes would greatly reduce turnaround times for government services, the amount of "burden hours" on citizens, and the amount of tedious manual labor by government employees. The turnaround times for filing taxes, for example, varies widely depending on the method of submission. For taxpayers who file their returns with a paper check, the wait time is between four and six weeks. In contrast, taxpayers who file their returns electronically and request a direct deposit, the wait time is 21 days or less.¹⁵

In fact, the IRS' Taxpayer Advocate Service has referred to paper returns as "kryptonite,"¹⁶ particularly as millions of unprocessed paper returns continue to grow. In 2021, paper returns took at least eight months to process,¹⁷ and that backlog cost the IRS \$3 billion in interest. According to IRS Commissioner Chuck Rettig, "We are a paper-based organization operating in a digital world economy." The agency's paperwork problem poses a significant negative impact on a process that has achieved over 95% digitization. Other federal information collection processes are nowhere close and stand to face greater challenges.

For employees, according to a survey of local government leaders,¹⁸ one of the top obstacles is too much manual work. Reducing manual processes would free workers to invest their time in higher-value work that directly supports the mission of their team and agency. According to the General Services Administration (GSA), if the government achieved only 20 hours of workload elimination per employee, the net capacity gained would be worth \$3 billion.¹⁹

10.5 billion hours
were spent by the public on
government paperwork.

Building Resilience

When the COVID-19 pandemic hit, many government agencies struggled to provide services. They faced a frantic push for digitization so that they could accommodate telework for their staff and perform their basic functions virtually. The difficulty of this transition created massive delays and backlogs in service requests that are still being processed today. However, COVID-19 only exposed and exacerbated a fundamental weakness—the federal government has fallen so far behind the private sector in IT modernization that it is still employing decades-old technology that makes it less able to effectively adapt. Digitizing commonly used forms will enable government to be more agile and resilient to future crises and unforeseen conditions.

The agencies that were more modernized weathered the challenges of the pandemic much more effectively than those that were not. For example, the Small Business Administration, whose IT system controls access to applications was 17 years old and ranked among the top 10 critical federal legacy systems most in need of modernization before the pandemic,²⁰ had its E-Tran website crash²¹ as it tried to roll out the Paycheck Protection Program.

On the contrary, the Department of Transportation was able to get its workforce 100% telework ready in just five days, building on the network consolidation and modernization work that the agency started two years before the pandemic.²² Although the number of travelers plummeted, this work readiness enabled the agency to maintain critical support for delivering essential food, supplies, and medical equipment.

During the pandemic, millions of Americans faced illness, unemployment, food insecurity, and financial instability. An improved ability for government to accelerate research on, gather data from, and quickly respond to disasters and pandemics could save millions of lives, give Americans the help they need in a timely and effective manner, and build resilience into government operations.

Eliminating Waste

Digitizing government forms would take the “paper” out of paperwork. In the 2009 survey of federal employees mentioned earlier,²³ on average, each worker reportedly printed roughly 7,200 pages per year, with an estimated 35% of those pages being immediately discarded. Accounting for all federal workers, that translates to 18.78 billion printed pages per year, with 6.57 billion pages being unnecessary. That’s roughly 2.25 million trees a year,²⁴ just on the government side. Based on the total annual responses for government information collections, the environmental costs on the public side to produce these forms could be significantly higher. Moving away from paper processes would not only send the right signal to the public about conservation, but it would contribute directly to reducing our dependence on and use of fossil fuels.

In short, eliminating paper-based, manual government processes would significantly reduce the amount of waste and help achieve the goals of environmental sustainability across federal operations.

Government paperwork
results in roughly
2.25 million trees
harvested per year.

By the Numbers

Government-wide totals²⁵

Active Forms	9,881
Annual Responses	106,696,738,848
Annual Hours	10,257,745,867
Annual Cost	\$142,976,881,142

There have been
4.78 billion visits
 to government websites in the 90 days
 between June 1, 2022, and August 30, 2022.²⁸

Agencies that generate the most paperwork²⁶

The Office of Information and Regulatory Affairs (OIRA), established by Congress in the 1980 Paperwork Reduction Act, reviews government collections of information from the public, reviews proposed drafts and final regulations under Executive Order 12866, and

develops and oversees the implementation of government-wide policies in the areas of information policy, privacy, and statistical policy.²⁷ Below are the annual statistics broken down by agency as of June 2022:

Most "Burden Hours" to the Public

Department of the Treasury	6.57 billion hours
Department of Health and Human Services	1.57 billion hours
Securities and Exchange Commission	294 million hours
Department of Agriculture	263 million hours
Department of Homeland Security	187 million hours

Most Number of Forms

Department of Health and Human Services	1,242 forms
Department of the Treasury	1,838 forms
Department of Agriculture	553 forms
Department of Commerce	437 forms
Federal Communications Commission	436 forms

Most Total Form Responses

Securities and Exchange Commission	41.49 billion responses
Federal Trade Commission	30.12 billion responses
Department of Health and Human Services	9.46 billion responses
Commodity Futures Trading Commission	5.1 billion responses
Department of the Treasury	3.79 billion responses

Top Annual Costs to the Public

Department of the Treasury	\$41.9 billion
Securities and Exchange Commission	\$31.8 billion
Federal Acquisition Regulation	\$14.4 billion
Department of Homeland Security	\$7.4 billion
Environmental Protection Agency	4.0 billion



Top Areas to Digitize

For government forms, there are four stages of digitization:



Printable

The form is available to view and download online.



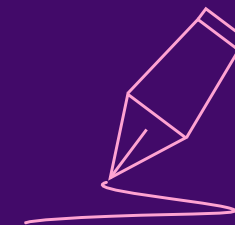
Fillable

The form is editable online.



Fileable

The form can be submitted online.



Signable

The form can be signed digitally.

Passport Applications (DS-11) and Renewals (DS-82)

Department of State, Bureau of Consular Affairs

Passport applications and renewals are important forms for Americans and frequently the top downloaded forms across all government domains.²⁹ Passports are required for international travel by air, sea, and land and can be used as an alternative form of identification.

During the pandemic, because passport applications and renewals relied on printing, in-person appointments, and mailing, processing times experienced significant delays. To handle sensitive documents, passport specialists needed to be physically present in the office, rendering the staff unable to telework.³⁰ In July 2021, the backlog amounted to between 1.5 million and 2 million applications, and wait times were around 12 to 18 weeks.³¹ In late 2021, the turnaround estimates fell to 8 to 11 weeks for routine processing, which is still several weeks higher than the pre-pandemic average.

According to a report from the State Department's Office of Inspector General,³² these issues can be attributed to delays with implementing the Online Passport Renewal system and related programs. In December 2021, President Biden signed an executive order to transform the federal customer experience, which named passport renewals, in particular, as an area for improvement.³³ While this is encouraging, there has been no timeline for execution or launch.

Current Status

Printable Fillable Fileable Signable



Annual Burden³⁵

Passport Application

\$207,192,150 15,604,583 hours

Passport Renewal

\$166,646,559 4,301,111 hours

Public Reporting Burden

Passport Application: Avg. 85 minutes per response³⁶

Passport Renewal: Avg. 40 minutes per response³⁷

Green Card (I-485)

Department of Homeland Security, U.S. Citizenship and Immigration Services

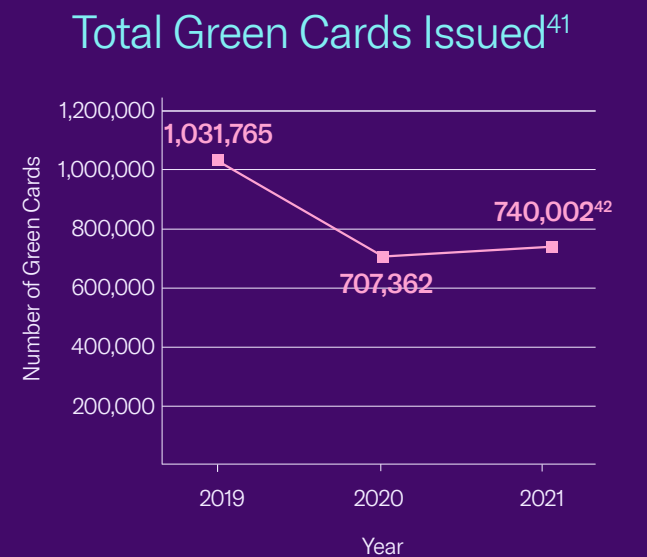
The Application to Register for Permanent Residence or Adjust Status, also known as applying for a green card, allows noncitizens to live and work permanently in the U.S. A person can be eligible under one of several categories, including through family, employment, refugee status, special immigrant status (e.g., religious worker, international broadcaster), human trafficking and crime victim status, and victim of abuse status.

Processing backlogs for these applications has been increasing since before the pandemic and worsened since 2020. Pending applications grew from 3 million in FY 2013 to 9.5 million as of February 2022.³⁸ The U.S. Citizenship and Immigration Services (USCIS) also reported 66,500 employment-based and 141,000 family-based green cards going to waste,³⁹ largely as the result of COVID-19 restrictions, staffing challenges, and restrictive laws passed under the Trump administration.

Enabling the form to be fileable and signable would greatly reduce inefficiencies and enable the USCIS to tackle the backlog. Not only does this affect applicants and USCIS, but its broader impacts also include diminishing the U.S.' ability to compete with other nations for top tech talent.⁴⁰ Many high-skilled workers, such as computer scientists and software engineers, arrive on H-1B visas, which grants a maximum stay of six years. Afterward, these workers must apply for green cards to stay and work in the U.S. Many major tech companies depend on having green cards and visas to attract and retain talent.

Current Status

Printable Fillable Fileable Signable



Annual Burden⁴³

\$198,496,844 4,466,267 hours

Public Reporting Burden

Estimated 6 hours and 25 minutes per response⁴⁴



U.S. Individual Income Tax Return (1040)

Department of Treasury, Internal Revenue Service

U.S. taxpayers must file an annual income tax return via form 1040. It is one of the more labor-intensive processes that workers in America must complete, with over 2 billion hours in reported burden to the public,⁴⁵ and it is by far the biggest source of revenue for the federal government.⁴⁶

Although a fully digital process exists for filing individual income taxes and the vast majority of Americans e-file, the IRS' approach to paper returns is still driven by antiquated and paper-based processes. As of July 29, 2022, the IRS had 10.2 million unprocessed individual tax year 2021 returns, 8.4 million of which are paper returns waiting to be reviewed and processed.⁴⁷ Also, e-filed returns that register any issues default to a paper-based process that requires further communications to be mailed or faxed. In the current backlog, 1.8 million returns are a result of error correction or other special handling. As the IRS' Taxpayer Advocate Service reported, delayed refunds can have major impacts on taxpayers, as some include COVID-19 related relief, and others may provide critical funds for basic living expenses, employee payrolls, mortgages, or other loans.⁴⁸

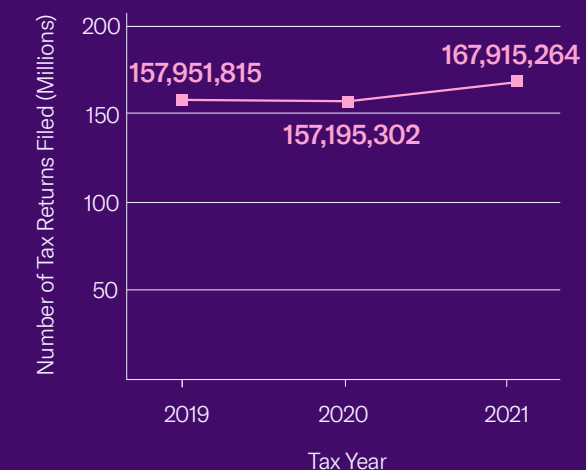
The process for paper tax returns begins with a 1970s-era machine that opens and sorts the mailed-in forms, the manufacturer of which no longer exists.⁴⁹ Employees then sort and place each return into separate batches, and red markers and colored papers are used to flag missing or incorrect information. An IRS employee must manually enter numbers from each document into the system, instead of employing scanning technology that could greatly shorten and improve the process. If at any point the taxpayer or an IRS employee makes a mistake, or if the decades-old IT system produces an error, employees must manually go in and fix the issues. The computer system runs on COBOL, a programming language that first appeared in 1959 and long retired by most companies and coders. The whole process can take more than six months.⁵⁰

By digitizing paper records, employing scanning technology, and leveraging electronic invoicing, the IRS would cut down dramatically on the backlog, reduce processing times, and save costs for the agency and the public.

Current Status



Total Individual Tax Returns Filed⁵¹



Annual Burden⁵²



Public Reporting Burden⁵³



Petition for a Nonimmigrant Worker (I-129)

Department of Homeland Security, U.S. Citizenship and Immigration Services

Employers that want to hire a nonimmigrant worker to come to the U.S. to perform services or labor or receive training must file form I-129, the Petition for a Nonimmigrant Worker. Eligibility to start work on the job depends on approval of this form. Applicable visas include H-1B, H-2A, H-2B, H-3, L-1, O-1, O-2, P-1, P-1S, P-2, P-2S, P-3, P-3S, Q-1, and R-1. These range from highly skilled specialty professionals and executives to seasonal agricultural workers to internationally recognized entertainers, artists, scientists, and athletes.⁵⁴

Immigration is crucial for addressing the current unprecedented labor shortage in the U.S. Issuances of work-related visas dropped dramatically during the pandemic as posts were instructed to suspend routine visa services and provide only mission-critical and emergency services.⁵⁵ Like other services, this created a negative loop of pending cases,

increased processing times, and produced backlogs that the USCIS is continuing to deal with.⁵⁶ Despite taking measures to reduce the processing times, the standard I-129 form still requires two months for a decision.

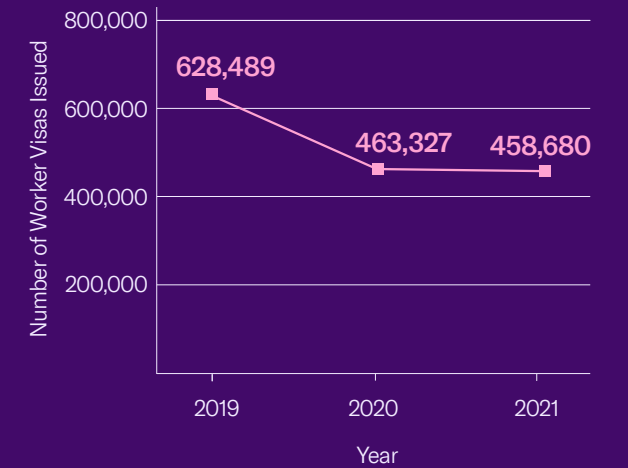
Digitizing would tremendously help tackle these compounding issues. Currently, the application requires U.S.-based employers that want to hire foreign workers to print their application along with supplementary forms and mail the package to one of several filing locations in California, Vermont, Nebraska, or Texas, depending on which nonimmigrant classification and action the petitioner is requesting and where the petitioner is located.⁵⁷

Digitizing this application process would cut down on public “burden hours,” shorten turnaround times, and enable the U.S. to import more highly skilled workers.

Current Status

Printable Fillable Fileable Signable

Total Relevant Work Visas Issued⁵⁸



Annual Burden⁵⁹

\$70,681,290 1,072,810 hours

Public Reporting Burden⁶⁰

Estimated at 2.34 hours per response

Visa classification-based supplements range from an additional .34 (Q-1) to 2.34 hours (R-1).

Social Security Application (SS-5)

Social Security Administration

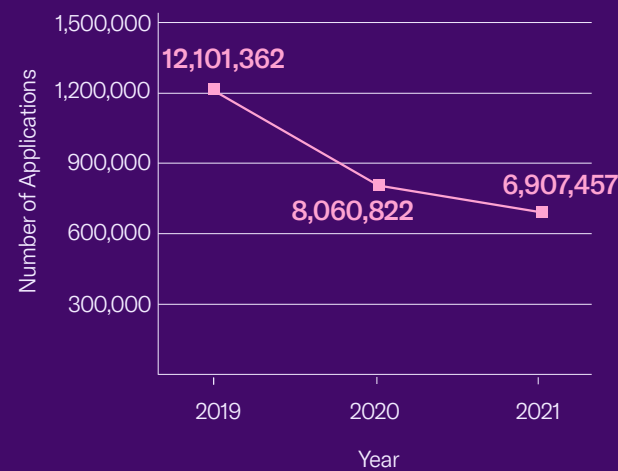
Social Security numbers are assigned to U.S. citizens, permanent residents, and temporary residents of the U.S. Individuals who have lost or damaged their cards, need to update or correct personal information, or request a new number must complete Form SS-5. For those who are simply applying for a replacement card and have a state-issued identification card, this process can be completed online. However, individuals who need to change their name because of marriage, divorce, court order, or any other reason must get a corrected Social Security number card, which cannot be completed online.⁶¹ Applicants must visit their local Social Security Administration (SSA) office with printed documentation or mail it in to move the process forward.

As in other agencies, the pandemic exacerbated backlogs in services.⁶² Even before the pandemic, Social Security faced a customer service crisis.⁶³ A name change is a fairly common process for Americans. On average, over 2 million Americans get married and around 800,000 get divorces or annulments each year.⁶⁴ On top of that, applicants may choose to change their information for a host of other reasons.⁶⁵ Nearly all name updates to government documents and accounts—an already laborious undertaking—depend on first being able to present a valid Social Security document. Digitizing this process would make the experience more efficient and customer friendly.

Current Status

Printable Fillable Fileable Signable

Total SSN Replacement Applications⁶⁶



Annual Burden⁶⁷

\$0⁶⁸ 12,097,961 hours

Public Reporting Burden

Estimated between 5 and 60 minutes per response⁶⁹

U.S. Customs Declaration (6059B)

U.S. Customs and Border Protection, Department of Homeland Security

If you've traveled internationally, you've seen the 6059B form. It's a thin, blue strip of paper meant for individuals arriving in the U.S. to provide basic information on their identity and what they're bringing into the country, such as agricultural and wildlife products. Over 337 million responses are submitted each year. The document can be filled out before or during travel, but it must be printed and cannot be submitted online.⁷⁰

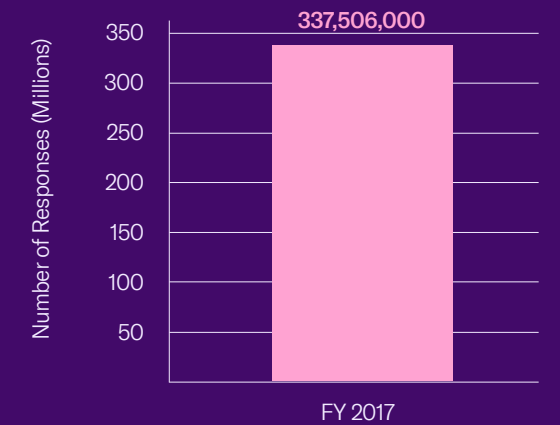
Americans with membership in the Global Entry program are allowed to complete the customs declaration form via a digital kiosk and do not have to use the paper form before arrival. This benefit is a major selling point for Global Entry's promise as "one of the fastest, most technologically advanced ways to speed international travel."⁷¹ Extending this benefit to other travelers would improve the customer service experience for Americans and foreign visitors, reduce "burden hours" on the public, and help the travel industry recover from the pandemic.

In 2019, prior to the pandemic, international visitations to the U.S. totaled 79 million.⁷² Although the travel and tourism industry was one of the business sectors hardest hit by COVID-19 restrictions, international arrivals have been growing, and Americans are eager to travel.⁷³ Enabling online signing and filing of the U.S. Customs Declaration form would enhance an already burdensome process and help the federal government reach its ambitious goal of welcoming 90 million international visitors annually by 2027.⁷⁴

Current Status

Printable Fillable Fileable Signable

Annual Responses⁷⁵



Annual Burden

\$0 5,303,902 hours

Public Reporting Burden

Estimated 4 minutes per response⁷⁶

Employment Eligibility Verification (I-9)

U.S. Citizenship and Immigration Services, Department of Homeland Security

The I-9 form is used to verify the identity and employment authorization of individuals hired for employment in the U.S. For both citizens and noncitizens, all U.S. employers must complete the form for each person they hire for employment in the U.S. Both employees and employers must complete the form. The USCIS received 55.4 million annual responses to the form,⁷⁷ and it also ranks among the top downloaded forms across U.S. government websites.⁷⁸

While the form is currently available to complete electronically and not required to be submitted to a government agency,⁷⁹ users must print a hard copy of the form, then sign and date it by hand where required. This process occurs twice—first when the employee finishes Section 1, then again by employers for Section 2. For reverification and rehires, the process repeats for Section 3. Section 274A also requires in-person, physical examinations of employment eligibility and identity documentation for employees. During the COVID-19 pandemic, the in-person inspection portion of the requirements was temporarily exempt for remote employees.⁸⁰

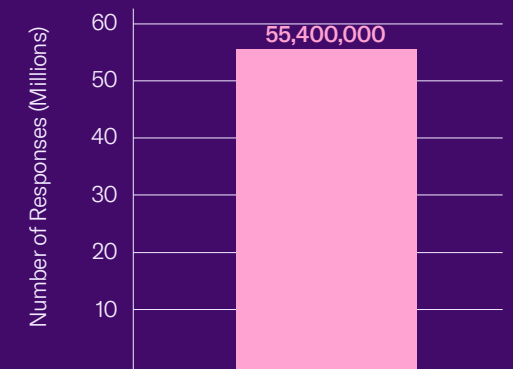
Studies that analyzed the potential of remote work to persist after the pandemic found that about 20%–25% of the workforces in advanced economies could work from home between three and five days a week.⁸¹ This represents a four to five time increase in remote work than before the pandemic. In this scenario, extending the COVID-19 flexibility on in-person inspections indefinitely would better accommodate Americans in their new work environments. Allowing a digital signature on the form would also reduce “burden hours” on the public, printing costs, and related waste.

Current Status

Printable **Fillable** **Fileable** **Signable**



Annual Responses



Annual Burden⁸²




\$0



29,300,000 hours

Public Reporting Burden



Avg. 35 minutes per response manually and 26 minutes per response digitally⁸³



Health Records and Vaccine Cards

Centers for Disease Control and Prevention, State Health Departments

Although the paper COVID-19 vaccination cards are issued by the CDC, replacing or accessing online health records and vaccination cards is dependent on the vaccination provider and/or the state of residence, and there is no uniform method of accessing, retrieving, or presenting the information. Currently, 37 state health departments allow some sort of access online to COVID-19 vaccination records, though many of these records cannot be used as a digital vaccine certificate.⁸⁴ Thirteen states lack access to records online. In fact, 12 states have banned digital certificate systems altogether, and more state legislatures are debating a ban.

In the U.S., 588 million doses of COVID-19 vaccines have been administered as of June 2022.⁸⁵ According to the CDC, if the vaccination card is lost, individuals must contact the vaccination provider directly to replace it. The CDC does not provide COVID-19 vaccination cards and does not maintain vaccination records.⁸⁶ State health departments often have records of vaccinations available on an immunization information system (IIS), but they cannot issue a vaccination card.

The paper copy of COVID-19 vaccination records is easily lost, damaged, or faked.⁸⁷ In August 2021, after the Biden administration began discussing booster shots for the general public, Google searches for both “lost COVID card” and “fake COVID vaccine card” peaked.^{88,89} The Department of Health and Human Services Office of Inspector General also saw a spike in counterfeit cards, enabled by the ease of replicating the paper template. A verified and secure digital copy would streamline a replacement process and guard against fraud.

Proof of vaccination is currently required to travel abroad, go to school, and visit some businesses, and many employers require proof of vaccination for work. If another variant of COVID-19 once again compels lockdowns and vaccine mandates, these records will be essential. Americans who lack the opportunity to easily access and provide their vaccination records are at a disadvantage.



Notarized Documents

Notarized documents are typically handled by local and state governments and include contracts, court filings, business licenses, home purchases, marriage and divorce documents, and wills. Most notaries perform functions on a part-time basis, and appointments depend on their availability. The majority of these processes are still paper based and conducted in person. Not only do these factors add time and costs to an already burdensome process and lessen the customer service experience, but also unsustainable during a pandemic.

Remote online notarization (RON) addresses these issues and enables more efficient, convenient, and secure transactions. This new process takes place online with a live notary present virtually via videoconferencing and through one of many notary platforms. Leveraging RON benefits both individuals and businesses. Remote notarization enabled companies to continue operations and close transactions during the COVID-19 pandemic.

During the pandemic, nearly all states without a RON law adopted some form of remote notarization. Although many have made these laws permanent, others have neglected to do so after the state of emergency ended in their jurisdiction. As of early 2022, 37 states have enacted some form of permanent RON law,⁹⁰ enabling them to use audiovisual communications to complete notary acts, expedite turnaround times, enhance privacy and security, and preserve a recording for the record. In Congress, the Securing and Enabling Commerce Using Remote and Electronic (SECURE) Notarization Act was introduced in May 2021, which aims to permit immediate nationwide use of RON, and passed the House on July 27, 2022.⁹¹

As we deliberate the post-pandemic world, policymakers should fully embrace RON. Its convenience, added security, efficiency, and resilience provide major advantages to businesses, governments, and the American public.



Driver's Licenses

In 2020, there were around 228.2 million licensed drivers in the U.S.⁹² California, the most populous state, accounts for over 27 million licensed drivers, and in 2021, it had over 2 million license renewals and 2.7 million change of address transactions.⁹³ Although a sizeable majority of states allow renewals and changes of address to take place online, new applications and those seeking a name change are generally relegated to in-person processes. The vast majority of states require printing and filing the application for new driver's licenses to be in person, with only 18 states making their applications available to print online.⁹⁴ For name changes on licenses, 48 states require in-person appointments, with only 2 allowing mail-in. Among the in-person states, only 3 provide fillable forms online.

Aside from the application and renewal processes, a physical card that must be carried for identification is burdensome, particularly in the era of mobile payments and ticketing. As of 2021, more than 20

states have considered, tested, or launched digital versions of driver's licenses on smartphones.⁹⁵ States that have already launched mobile ID apps include Delaware⁹⁶ and Arizona.⁹⁷ Digitizing licenses would offer Americans more convenience in accessing their information, mitigate risks of losing or damaging cards, and increase safety and security in daily transactions. Some of these digital versions would also enable more privacy by only sharing pertinent data when scanned instead of displaying everything on a card. Moreover, they would be able to be updated in real time, dramatically shortening wait times for more traditional processes.⁹⁸

Digitizing services would do more than cut costs and time; it would also ultimately provide a better customer service experience. Government has a reputation for red tape, long waits, and bureaucracy. Rather than wait in line at the DMV for hours or all day, Americans can use online systems to quickly address their needs.

Professional Licenses

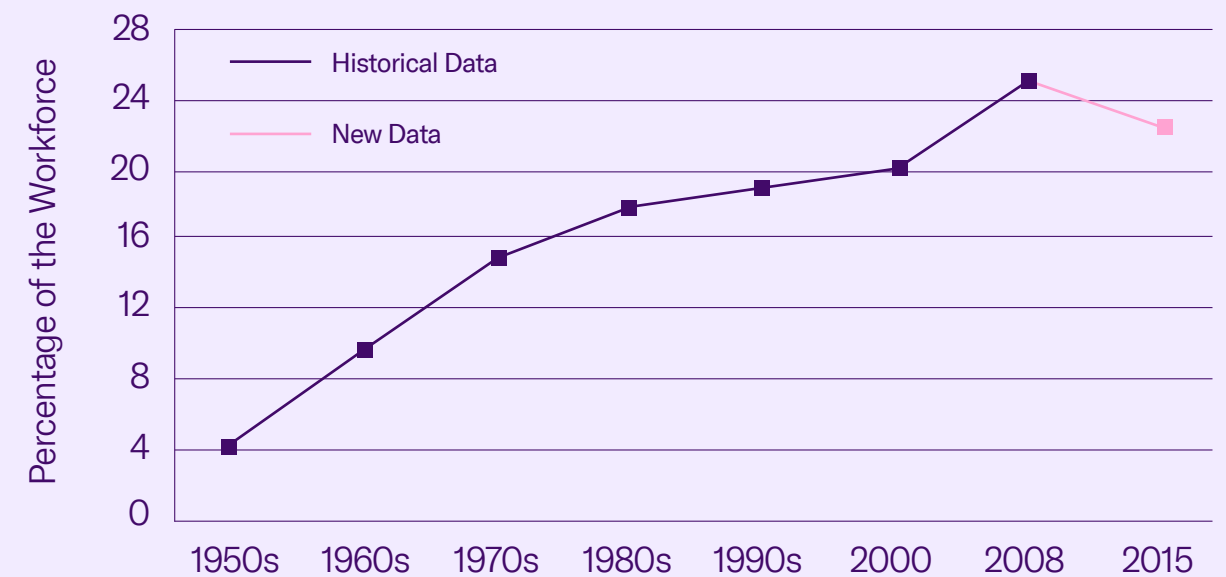
The number of American jobs requiring an occupational license or government approval is 1 in 4, equating to roughly 40 million people.⁹⁹ These jobs range from physicians, attorneys, nurses, and teachers to truck drivers, security guards, and hair stylists.

In 2019, only 27 out of 50 states had the capability of digitally signing and submitting forms, and most states required submission of forms through mail.¹⁰⁰ Like the federal government, the pandemic forced a reckoning for state governments as disruptions with mailing delays, in-person trainings, examinations, and more made regular approaches to professional licensing ineffective. Simultaneously, the health care sector faced unprecedented pressure and a labor shortage brewed.

The demand for licensed professionals only rose, while an increasing number of jobs required professional licensing.¹⁰¹ The health care sector alone, where most jobs require licenses, is projected to grow 14% between 2018 and 2028.¹⁰² This mounting pressure highlights the importance of streamlining this process.

Even though states have made progress in digitizing their licensing systems, there is room for improvement. Many states still have licensing boards without online application processes, and others require an initial paper application. By digitizing more professional licensing, states can provide more convenience for workers, help mitigate the stresses of the labor shortage, and aid economic recovery locally and nationally.

Share of U.S. Workers With an Occupational License



Note: Estimates for 1950–2008 are for workers with state licenses; estimates for 2015 include state, federal and local licenses.

Sources: *The Council of State Governments (1952); Greene (1969); Kleiner (2006); Kleiner and Krueger (2013); Westat data; Bureau of Labor Statistics (2015); and Council of Economic Advisers calculations*



Case Study: e-Estonia

Imagine only needing three minutes to file your tax returns. That's the reality for citizens in Estonia.

In the global discourse on government digitization, Estonia is foremost on the list of the world's most digital societies. Ninety-nine percent of its public services have been digitized—health care, banking, taxes, policing, and more. Even voting has been conducted online since 2005, when Estonia became the first nation in history to offer internet voting in a general election.¹⁰³

All these government services have been digitally linked across one platform called the X-Road. This data exchange platform connects public sector databases and registries, local municipalities, and businesses. When declaring taxes, data such as name, income, savings, and deductions are prefilled. At the doctor's office, no forms are needed as each patient's medical history is already digitally accessible to physicians.

To avoid vulnerabilities with centralized data storage, X-Road links individual servers through end-to-end encrypted pathways, letting information live locally.¹⁰⁴

The e-Estonia system is centered around three principles:¹⁰⁵

1. *Privacy and confidentiality of data and information:* The heart of this system relies on a strong digital identity issued by the state, mobile enabled, and compatible with other platforms. The security is compounded with a strong digital signature that is accepted, used, and legally binding in Estonia, as well as in the European Union.
2. *Once Only:* The system operates under the rule that government can neither ask for the same data more than once nor store it in more than one place. If you've already provided your marriage certificate to the registry, no other institution will ask for it again. In preparing applications, existing data is prefilled so that no single piece of information is entered twice.
3. *Ownership of data:* The system is based on individual ownership of the data, including the right to know what information is collected and who has had access to it. Inquiries about the information must be authorized and saved in a log file. The information accessed is specific to each inquiry and filtered so that no other data is accessible.



Embracing an e-government system not only produced a much more efficient system and citizen service experience, but it translated into significant savings. The use of X-Road reportedly saved the Estonian administration 820 working years compared with previous calendar years.¹⁰⁶ Using the digital signature also saves about 2% of the Estonian GDP each year.¹⁰⁷ In terms of costs, Estonia spends approximately 1.1% to 1.3% of the state budget on digitalization.¹⁰⁸ In comparison, Finland spends 1.4% and Denmark spends 2.4%.

The broader rewards of a digital governance system have been apparent for Estonia, which has transformed into a hub for tech entrepreneurship. Previously, the country's chief industry was logging. Now, it boasts as the birthplace of companies like Skype and Timbeter. For a country of 1.3 million in population, Estonia's 25 most valuable tech companies were valued in 2021 at €21 billion, or around \$22.5 billion.¹⁰⁹

With all this digital infrastructure in place, citizens had peace of mind in dealing with the pandemic. At the onset of COVID-19, Estonia appeared to have experienced one of the lowest levels of panic based on media coverage, panic buying, and other indicators.¹¹⁰

While Estonia's approach may not translate broadly to other countries—particularly those with significantly larger populations and more complex infrastructure and bureaucracies—it does serve as a source of inspiration and an example of the importance of modernizing public services. For democratic countries, the principles of information security, good governance, and privacy by design are largely universal, transferable, and adaptable.¹¹¹ The U.S. can use the e-Estonia model as a reference in bringing digital design thinking into the public sector.

Case Study: Getting Married



So you just got married. If you're changing your name, you'll probably want to hold off on that until after the honeymoon, as you've got a lot of paperwork to deal with. Not only will the marriage certificate likely take a couple of weeks to arrive, but you will also need to update and reapply for a plethora of both federal and state government forms, many of which have specific time requirements for reporting and filing.

You'll need to get your marriage license and certificate. If you got married in a state without virtual services, you will have to print, complete, and sign an application for a marriage license before an appointment with the registrar's office. To obtain a certified copy of a marriage certificate, you will then need to complete another application. This is often a PDF form that you will have to print, fill, sign, and mail.¹¹² Depending on the state, licenses cost from \$18 to over \$100,¹¹³ and certificates run from \$5 to \$26 for the first copy.¹¹⁴ Because many other processes to change a name require the marriage certificate, often by mail, it's best to get at least two copies to speed things up.

If you are changing your name, you will need to get a new Social Security card. This is a legal requirement. You will need proof of your identity on hand, sometimes proof of your U.S. citizenship and the marriage document. Then, you must fill out and print form SS-5—

the application for a Social Security card. Contact your local SSA office or card center and figure out your submission options.¹¹⁵ Typically, this requires going in person.

If you're a naturalized U.S. citizen, you may also want to update your certificate of naturalization so that it matches your new legal name. You will then need to use form N-565 to replace your current certificate. Although you can file this online, it costs \$555. If you have a green card, you'll need to use form I-90, the Application to Replace Permanent Resident Card. This process can also take place online, but it costs \$455 in form fees and \$85 in biometric services. If you're on a visa, you'll need to get a new passport with your home country and reapply for a new U.S. visa. This process can vary widely.¹¹⁶

In addition, you'll need to update your driver's license or state ID card. Most states require this process within 30 days of the name change. As mentioned, the vast majority of states require in-person appointments for a name change. Only a few states have the form available online in advance of your visit. Most likely, you will need original copies of documents that verify your new name and information, such as your new Social Security card, marriage license, proof of address, and current driver's license. Depending on the state, this costs between \$10 and \$89.¹¹⁷

You'll also need to update your vehicle title and registration information. To do this, you'll need to have proof of your name change through your new Social Security card. This process is similar to obtaining an amended driver's license, and though some states cover both, most have separate departments for licensing and motor vehicles. The process often involves another printed and signed application, and most states require in-person visits to update the information as well as a change fee.^{118, 119}

Don't forget to update your passport. If you happen to have had your passport issued less than one year ago, you're in luck—the process is free. Nevertheless, you will need to fill out and print form DS-5504 and mail it along with your most recent passport, marriage certificate, and a color passport photo.¹²⁰ If it's been more than a year, you'll need form DS-82 instead, and you'll pay \$130 for standard processing and standard delivery on a passport book.¹²¹

If you have TSA PreCheck or Global Entry, you'll want to change your name for trusted traveler programs. TSA PreCheck membership requires the new details to match, or you won't be able to use the benefit

when traveling. The program, however, can accommodate changes through a call center or online.¹²² Name changes in Global Entry require a visit to an enrollment center to update the information.¹²³

It's also important to update your voter registration information. As of July 2021, 42 states and D.C. offer online registration.¹²⁴ If you live in one of the states without an online process, you'll need to fill, print, sign, and mail a form¹²⁵ along with other obligations like taking an in-person oath with an officiated officer and mailing copies of identification.

Once you've completed the major government forms and updates, you'll need to change your name on your bank accounts, credit union accounts, checks, credit and debit cards, and other financial information. Other personal accounts will need to be updated, including your file with your employer, professional licenses and associations, home mortgage or lease, insurance, investment accounts, utility accounts, and medical providers.

After all that, you're free to enjoy your new name and marriage. Congratulations!

Policy Recommendations

1.

Congress should use its oversight authority to determine current impediments to agencies' effective modernization. Where current constraints lie, Congress should direct necessary funding for modernization.

2.

Congress should review and analyze all potential ways to fund needed IT modernization, such as developing capital working funds at agencies for the specific use of IT modernization.

3.

Congress should continue to appropriate necessary funding to the Technology Modernization Fund (TMF) to assist in updating outdated and inefficient IT systems.

4.

Federal agencies that administer funding for IT modernization to state and local governments should develop communication campaigns to educate localities about available funding opportunities like those in the American Rescue Plan.

Conclusion

When the pandemic hit, government had to move quickly to adapt to the new environment. Agencies had to move their staff to telework, meet increased demands, and continue normal services and operations. This required an acceleration in implementing new systems. According to Government Executive, 97% of federal executives say it was an unprecedented stress test for their agencies.¹²⁶

The stories of success and failure regarding how government dealt with COVID-19 are lessons in why it's important to finally bring our public sector into the 21st century. During the pandemic, outdated government systems wrought havoc on relief efforts across federal, state, and local governments. Many systems faltered in meeting the needs of Americans. For example, the IRS struggled to disperse millions of economic relief payments, and the Small Business Administration's E-Tran website crashed as it tried to roll out the Paycheck Protection Program. As Rep. Gerald Connolly, chairman of the Subcommittee on Government Operations, said at the July 2020 congressional hearing on federal IT modernization, "The public policy was there, but our IT systems often couldn't deliver. In other words, the fate of the world's largest economy rises and falls often with the ability of government IT systems to deliver in an emergency, and that should galvanize us all."¹²⁷

Yet successes were apparent. When the New York Department of Labor's aged systems, which only allowed them to do an average of 10 emails an hour, failed to meet the 1,300% increase in unemployment claims, the department partnered with DocuSign to build a digital process.¹²⁸ This enabled the department to send out 570,000 unemployment certifications in under 72 hours.

The pandemic transformed how government executives thought about work, not only accelerating the pace of modernization but also validating its critical need. As we consider the post-pandemic era, we can't lose the momentum of this change. Digitization will enable government agencies to cut costs, increase efficiency, and reduce waste every day. As we continue to deal with future crises and disruptions, digitization will build resilience into the federal system. Ultimately, if government can't perform its basic functions efficiently and effectively, it fails and loses the trust of the people who depend on its services. We must prioritize digital modernization so that government can continue to accomplish and improve on its ultimate goal—serving the American people.

Appendix

COVID-19 Certification

State	Records Online	Notes	SMART Health Card	Links
Alabama	No	Passport banned		https://arc-sos.state.al.us/cgi/actdetail.mbr/detail?year=2021&act=%20493&page=year
Alaska	No			https://dhss.alaska.gov/dph/epi/id/pages/covid-19/vaccineappointments.aspx
Arizona	Yes	MyIR Mobile	Yes	https://myirmobile.com
Arkansas	No	Passport banned		https://www.arkleg.state.ar.us/Bills/Detail?id=SB615&ddBienniumSession=2021%2F2021R
California	Yes		Yes	https://myvaccinerecord.cdph.ca.gov
Colorado	Yes		Yes	https://mycolorado.state.co.us/myvaccine-record
Connecticut	Yes	View and print	Yes	https://portal.ct.gov/DPH/Immunizations/CT-WiZ-Access-My-Immunization-Record
Delaware	Yes	View and print	Yes	https://delvax.dhss.delaware.gov/delvax_public/Application/PublicPortal
District of Columbia	Yes	MyIR Mobile	Yes	https://myirmobile.com
Florida	No	Passport banned		https://www.flgov.com/2021/05/03/governor-ron-desantis-signs-landmark-legislation-to-ban-vaccine-passports-and-stem-government-overreach
Georgia	No	Passport banned		https://gov.georgia.gov/press-releases/2021-05-25/gov-kemp-issues-executive-order-prohibiting-covid-19-vaccine-passports https://dph.georgia.gov/immunization-section/faqs
Hawaii	Yes		Yes, but not issuing new ones	https://hawaiiicovid19.com/smart-health-card

State	Records Online	Notes	SMART Health Card	Links
Idaho	No	Passport banned		https://gov.idaho.gov/pressrelease/gov-little-bans-vaccine-passports-in-idaho
Illinois	Yes		Yes	https://idphportal.illinois.gov/s/?language=en_US
Indiana	Was yes, but site down for months	Passport banned		https://www.in.gov/localhealth/noblecounty/covid-19-response/lost-covid-19-vaccination-card/ http://iga.in.gov/legislative/2021/bills/house/1405#digest-heading
Iowa	No	Passport banned		https://iris.iowa.gov/IRISPRDJ/clientSearch.do?language=en
Kansas	No			https://www.kake.com/story/43605062/kansas-governor-no-interest-in-covid19-vaccine-passports
Kentucky	Yes, as part of full records	Can access all vaccine records, but legislators moving to ban	Yes	https://chfs.ky.gov/agencies/dph/dehp/idb/Pages/kyir.aspx
Louisiana	Yes	MyIR Mobile	Yes	https://myirmobile.com
Maine	Yes, as part of full records	Can access all records at once		https://www.maine.gov/dhhs/forms/impact-immunization-record-request
Maryland	Yes	MyIR Mobile	Yes	https://myirmobile.com
Massachusetts	Yes		Yes	https://www.myvaxrecords.mass.gov
Michigan	Yes, as part of full records	Efforts of legislators to ban		https://mdhhsmiimmsportal.state.mi.us
Minnesota	Yes	Docket		https://www.health.state.mn.us/people/immunize/miic/index.html https://docket.care
Mississippi	Yes	MyIR Mobile	Yes	https://myirmobile.com



State	Records Online	Notes	SMART Health Card	Links
Missouri	No, can get encrypted file via email request	Passport banned		https://governor.mo.gov/press-releases/archive/governor-parson-signs-hb-271-regarding-local-public-health-orders-and https://www.kcmo.gov/city-hall/departments/health/covid-19-coronavirus-kcmo-information-and-response/how-to-request-a-replacement-covid-19-vaccination-card
Montana	No			https://news.mt.gov/Governors-Office/gov-gianforte-issues-executive-order-prohibiting-vaccine-passports https://dphhs.mt.gov/publichealth/immunization/copyofimmunizationrecord
Nebraska	Yes, viewable	Not as a passport		https://governor.nebraska.gov/press/gov-ricketts-opposes-vaccine-passports https://nesiis-dhhs-prod.ne.gov/prd_ir/public/clientSearch.do?language=en
Nevada	Yes, printable		Yes	https://izrecord.nv.gov/public/Application/PublicPortal
New Hampshire	Yes	Viewable		https://www.vaccines.nh.gov/vaccination-record-instructions
New Jersey	Yes	Docket	Yes	https://docket.care
New Mexico	Yes	Viewable	Yes	https://nmsiis.health.state.nm.us/webiznet_nm_public/Application/PublicPortal
New York	Yes		Yes	https://covid19vaccine.health.ny.gov/excelsior-pass-and-excelsior-pass-plus
North Carolina	Yes	Viewable		https://covid19.ncdhhs.gov/vaccines/access-vaccine-portal
North Dakota	Yes	MyIR Mobile		https://myirmobile.com
Ohio	No			https://coronavirus.ohio.gov/static/vaccine/public-instructions-to-access-impactsis-record.pdf
Oklahoma	Yes	Viewable		https://osiis.health.ok.gov/osiis_public/Application/PublicPortal
Oregon	Yes		Yes	https://www.oregon.gov/oha/covid19/Pages/Electronic-Vaccine-Card-FAQ.aspx https://smarthealth.cards/en/issuers.html
Pennsylvania	Yes	Viewable, not Passport		https://www.health.pa.gov/topics/Reporting-Registries/PA-SIIS/Pages/COVID-19-Vaccine-Records-FAQs.aspx

State	Records Online	Notes	SMART Health Card	Links
Rhode Island	Yes	Viewable	Yes	https://portal.ri.gov/VaccineRecord/s
South Carolina	No	Passport banned	Was going to, then paused	https://www.webmd.com/lung/news/20210513/south-carolina-governor-bans-mask-mandates-vaccine-passports https://www.postandcourier.com/politics/dhec-plan-for-online-immunization-record-cards-draws-sc-lawmakers-ire/article_56f2385e-9a60-11ec-b487-fb35e89871f8.html
South Dakota	No	Passport banned		https://news.sd.gov/newsitem.aspx?id=27980 https://doh.sd.gov/family/childhood/immunization/request-record.aspx
Tennessee	Yes, as part of full records	Passport banned		https://wapp.capitol.tn.gov/apps/BillInfo/default.aspx?BillNumber=SB0858&GA=112 https://www.tn.gov/health/cedep/immunization-program/ip/imm-record-request.html
Texas	Yes, viewable	Passport banned		https://gov.texas.gov/news/post/governor-abbott-issues-executive-order-prohibiting-government-mandated-vaccine-passports https://www.texashealth.org/-/media/Project/THR/shared/Documents/PDFs/About-Us/COVID-19-Info/Getting-your-COVID-19-Vaccine-Record.pdf
Utah	Yes	Docket	Yes	https://docket.care https://smarthealth.cards/en/issuers.html
Vermont	Yes	Viewable, not passport		https://www.healthvermont.gov/health-statistics-vital-records/registries/immunization
Virginia	Yes		Yes	https://vase.vdh.virginia.gov/vacapps/f?p=545:1
Washington	Yes	MyIR Mobile	Yes	https://myirmobile.com
West Virginia	Yes	MyIR Mobile		https://myirmobile.com
Wisconsin	Yes	Viewable		https://www.dhfs.wisconsin.gov/PR/clientSearch.do?language=en
Wyoming	Yes, as part of full records	Passport banned		https://governor.wyo.gov/media/news-releases/2021-news-releases/governor-gordon-issues-directive-banning-vaccine-passports https://health.wyo.gov/publichealth/immunization/wyir-wyoming-immunization-registry



Driver's Licenses

State	Apply	Change Name	Change Address	Renew	Links
Oregon	Online form	In person	Online	Online	https://www.oregon.gov/odot/dmv/pages/dv/chgaddress.aspx
Rhode Island	Online form	In person	Online	Online	https://dmv.ri.gov/licenses-permits-ids/drivers-licenses/name-address-change
Texas	Online form	In person	Online	Online	https://www.dps.texas.gov/section/driver-license/how-change-information-your-driver-license-or-id-card
Vermont	Online form	In person	Online	Online	https://dmv.vermont.gov/mydmv
Wisconsin	Online form	In person	Online	Online	https://wisconsin.gov/Pages/home.aspx
Tennessee	Online form, and other scheduling	In person	Online	Online	https://www.tn.gov/safety/driver-services.html
Washington	Online form, application	In person	Online	Online	https://www.dol.wa.gov/drivers-license/renewalupdates.html
Virginia	Print	In person	Online	Online	https://www.dmv.virginia.gov/onlineServices/
New York	Fillable	Mail	Online	Online	https://dmv.ny.gov/driver-licenses
Oklahoma	In person	Mail	Mail	Online	https://oklahoma.gov/dps/update-an-oklahoma-driver-license-id-card.html
Connecticut	In person	Online form, in person	Online	Online	https://portal.ct.gov/DMV/DMV-Services/Renew-Drivers-License?language=en_US
Minnesota	Online form	Online form, in person	In person	Form online, in-person submission	https://dps.mn.gov/divisions/dvs/Pages/dvs-content-detail.aspx?pageID=543
California	Online form	Online form, in person	Online	Online	https://www.dmv.ca.gov/portal/driver-licenses-identification-cards/dl-id-online-app-edl-44/

Endnotes

1. [A Guide to the Paperwork Reduction Act](#), Digital.gov, accessed June 6, 2022.
2. [21st Century Idea Act implementation](#), United States House Committee on Oversight and Reform, May 6, 2021.
3. [Assessing the Federal Government's Transition to Web-Based Forms](#), Information Technology & Innovation Foundation, August 23, 2021.
4. [Agencies Need to Develop Modernization Plans for Critical Legacy Systems](#), United States Government Accountability Office, June 2019.
5. [Investments](#), The Technology Modernization Fund, accessed June 6, 2022.
6. [Transforming government through digitization](#), McKinsey & Company, November 16, 2016.
7. [Public Trust in Government: 1958-2022](#), Pew Research Center, June 6, 2022.
8. [Mobile Fact Sheet](#), Pew Research Center, April 7, 2021.
9. [Income Tax Return, e-File Statistics](#), eFile, May 10, 2022.
10. [Digital government: Great expectations, untapped potential](#), Accenture Consulting, accessed June 6, 2022.
11. [XML Reports](#), Office of Information and Regulatory Affairs, accessed June 6, 2022.
12. [Inventory of Currently Approved Information Collections](#), Government-Wide Totals for Active Information Collections, Office of Information and Regulatory Affairs, accessed June 6, 2022.
13. [2009 Government Printing Report –A Closer Look at Costs, Habits, Policies, and Opportunities for Savings](#), Lexmark, May 12, 2009.
14. [Inventory of Currently Approved Information Collections, Government-Wide Totals for Active Information Collections](#), Office of Information and Regulatory Affairs, accessed June 6, 2022.
15. [The IRS has sent more than 78 million refunds. Here's how to check the status of yours](#), CNBC, April 25, 2022.
16. [Fixing the IRS: Paper Addiction Remains Agency's 'Kryptonite'](#), *Bloomberg Tax*, April 18, 2022.
17. [National Taxpayer Advocate Annual Report to Congress](#), National Taxpayer Advocate, December 2021.
18. [2022 State of Local Government Report](#), Government Technology, accessed June 6, 2022.
19. [RPA Program Playbook](#), Federal RPA Community of Practice, January 17, 2020.
20. [Agencies Need to Develop and Implement Modernization Plans for Critical Legacy Systems](#), United States Government Accountability Office, April 27, 2021.
21. [SBA Computers Crash in Fresh Blow to Companies Seeking Virus Aid](#), *Bloomberg*, April 6, 2020.
22. [How DOT became agile, innovative and purposeful during the coronavirus crisis](#), Federal News Network, July 10, 2020.
23. [2009 Government Printing Report –A Closer Look at Costs, Habits, Policies, and Opportunities for Savings](#), Lexmark, May 12, 2009.
24. [Tree Usage Calculator](#), accessed June 6, 2022.
25. [Inventory of Currently Approved Information Collections](#), Office of Information and Regulatory Affairs, accessed June 6, 2022.
26. [XML Reports](#), Office of Information and Regulatory Affairs, accessed June 6, 2022.
27. [Regulations and the Rulemaking Process](#), Office of Information and Regulatory Affairs, accessed June 6, 2022.
28. [People on government websites now](#), Analytics.usa.gov, accessed June 6, 2022
29. Ibid.
30. [Inspection of the Bureau of Consular Affairs' Passport Services Directorate](#), Office of the Inspector General, United States Department of State, September 2021.
31. [Briefing with Deputy Assistant Secretary for Passport Services Rachel Arndt, Bureau of Consular Affairs On the State Department's Passport Services](#), United States Department of State, July 14, 2021.
32. [Inspection of the Bureau of Consular Affairs' Passport Services Directorate](#), Office of the Inspector General, United States Department of State, September 2021.
33. [Executive Order on Transforming Federal Customer Experience and Service Delivery to Rebuild Trust in Government](#), the White House, December 13, 2021.
34. [Reports and Statistics](#), United States Department of State-Bureau of Consular Affairs, accessed June 6, 2022.
35. [View ICR - OIRA Conclusion](#), Application for a U.S. Passport, Office of Information and Regulatory Affairs, April 4, 2022.
36. [Application For A U.S. Passport](#), United States Department of State, accessed June 6, 2022.
37. [U.S. Passport Renewal Application for Eligible Individuals](#), United States Department of State, accessed June 6, 2022.
38. [Mounting Backlogs Undermine U.S. Immigration System and Impede Biden Policy Changes](#), Migration Policy Institute, February 23, 2022.
39. [Thousands of Worker Green Cards Went Unused Amid Pandemic Delays](#), *Bloomberg Law*, April 14, 2022.



40. [Google exec: Resolving green card backlog 'absolutely critical' to maintaining US tech leadership](#), Yahoo Finance, June 2, 2022.
41. [Yearbook of Immigration Statistics 2020](#), United States Department of Homeland Security, June 22, 2022.
42. [Legal Immigration and Status Adjustment Report for Fiscal Year 2021](#), United States Department of Homeland Security, accessed June 6, 2022.
43. [View ICR - OIRA Conclusion](#), Application to Register Permanent Residence or Adjust Status, Office of Information and Regulatory Affairs, March 29, 2021.
44. [Instructions for Application to Register Permanent Residence or Adjust Status](#), United States Department of Homeland Security, March 29, 2021.
45. [View ICR - OIRA Conclusion](#), U.S. Individual Income Tax Return, Office of Information and Regulatory Affairs, January 21, 2021.
46. [Sources of Revenue for the Federal Government](#), Data Lab, accessed August 16, 2022.
47. [IRS Operations During COVID-19: Mission-critical functions continue](#), Internal Revenue Service, August 12, 2022.
48. [PROCESSING AND REFUND DELAYS: Excessive Processing and Refund Delays Harm Taxpayers](#), Internal Revenue Service, July 7, 2022.
49. [Part 3. Submission Processing, Internal Revenue Manuals](#), Internal Revenue Service, accessed August 16, 2022.
50. [Where's My Refund?](#) Internal Revenue Service, August 2, 2022.
51. [Internal Revenue Service Data Book, 2021](#), Internal Revenue Service, May 2022.
52. [View ICR - OIRA Conclusion](#), U.S. Individual Income Tax Return, Office of Information and Regulatory Affairs, January 21, 2022.
53. [1040 \(and 1040-SR\) Instructions](#), Internal Revenue Service, accessed August 16, 2022.
54. [I-129, Petition for a Nonimmigrant Worker](#), United States Citizenship and Immigration Services, June 9, 2022.
55. [Suspension of Routine Visa Services](#), United States Department of State-Bureau of Consular Affairs, July 22, 2020.
56. [USCIS Announces New Actions to Reduce Backlogs, Expand Premium Processing, and Provide Relief to Work Permit Holders](#), United States Citizenship and Immigration Services, March 29, 2022.
57. [Direct Filing Addresses for Form I-129, Petition for a Nonimmigrant Worker](#), United States Citizenship and Immigration Services, November 5, 2021.
58. [Table XV\(B\) Nonimmigrant Visas Issued by Classification \(Including Border Crossing Cards\) Fiscal Years 2017-2021](#), United States Department of State, accessed June 6, 2022.
59. [View ICR - OIRA Conclusion](#), Petition for a Nonimmigrant Worker, Office of Information and Regulatory Affairs, January 25, 2022.
60. [Instructions for Petition for Nonimmigrant Worker](#), United States Citizenship and Immigration Services, May 31, 2022.
61. [How do I change or correct my name on my Social Security number card?](#), United States Social Security Administration, April 11, 2022.
62. [Social Security faces a customer service backlog](#), Investment News, February 1, 2022.
63. [Social Security needs a budget boost post-pandemic to serve the public](#), Reuters, June 24, 2021.
64. [Provisional number of marriages and marriage rate: United States, 2000-2020](#), Centers for Disease Control and Prevention, accessed June 6, 2022.
65. [What's in a name? A lot for those who change theirs](#), *Chicago Tribune*, August 8, 2017.
66. [Social Security Administration \(SSA\) Monthly Data for Social Security Number Replacement Card Applications](#), United States Social Security Administration, June 13, 2022.
67. [View ICR - OIRA Conclusion](#), Application for a Social Security Card, Office of Information and Regulatory Affairs, April 11, 2022.
68. The application form is free.
69. Application for a Social Security Card, Social Security Administration, accessed June 6, 2022.
70. [Form 6059B Customs Declaration - English \(Fillable\)](#), United States Customs and Border Protection, June 27, 2022.
71. [Global Entry Information Guide](#), United States Customs and Border Protection, accessed June 6, 2022.
72. [U.S. Travel and Tourism Overview \(2019\)](#), United States Travel Association, March 2020.
73. [International travel is heating up. Here's where Americans are going this summer](#), *Fortune*, May 20, 2022.
74. [Fact Sheet: 2022 National Travel and Tourism Strategy](#), United States Department of Commerce, June 6, 2022.
75. [View ICR - OIRA Conclusion](#), U.S. Customs Declaration, Office of Information and Regulatory Affairs, April 6, 2020.
76. [Form 6059B Customs Declaration - English \(Fillable\)](#), United States Customs and Border Protection, June 27, 2022.
77. [XML Reports](#), Office of Information and Regulatory Affairs, accessed June 6, 2022.
78. [People on government websites now](#), Analytics.gov, accessed June 6, 2022.
79. I-9 must be retained by the employer and made available for inspection by U.S. government officials.
80. [Temporary Policies Related to COVID-19](#), United States Citizenship and Immigration Services, April 25, 2022.
81. [The future of work after COVID-19](#), McKinsey & Company, February 18, 2021.
82. [View ICR - OIRA Conclusion](#), Employment Eligibility Verification, Office of Information and Regulatory Affairs, October 21, 2019.
83. [Instructions for Form I-9, Employment Eligibility Verification](#), United States Citizenship and Immigration Service, accessed June 6, 2022.
84. See Appendix.
85. [COVID-19 Vaccine Tracker Global Distribution](#), *Bloomberg*, accessed June 6, 2022.
86. [Your CDC COVID-19 Vaccination Record and Vaccination Card](#), Centers for Disease Control and Prevention, February 7, 2022.
87. [Vaccine 'Honor System' in U.S. Leaves False Sense of Security for Businesses](#), *Bloomberg*, June 22, 2021.
88. [Lost COVID Card](#), Google Trends, accessed June 6, 2022.
89. [Fake COVID Vaccine Card](#), Google Trends, accessed June 6, 2022.
90. Alaska, Arizona, Arkansas, Colorado, Florida, Hawaii, Idaho, Illinois, Indiana, Iowa, Kansas, Kentucky, Louisiana, Maryland, Michigan, Minnesota, Missouri, Montana, Nebraska, Nevada, New Hampshire, New Jersey, New Mexico, North Dakota, Ohio, Oklahoma, Oregon, Pennsylvania, Tennessee, Texas, Utah, Vermont, Virginia, Washington, West Virginia, Wisconsin, and Wyoming.
91. [S.1625 - Securing and Enabling Commerce Using Remote and Electronic Notarization Act of 2021, H.R.3962 - Securing and Enabling Commerce Using Remote and Electronic Notarization Act of 2022](#), United States Congress, accessed August 24, 2022.
92. [Total number of licensed drivers in the U.S. in 2020, by state](#), Statista, accessed June 6, 2022.
93. [Top 10 DMV Facts](#), United States Department of Motor Vehicles, January 1, 2022.
94. See Appendix.
95. [Digital driver's licenses take the sting out of forgetting your wallet. Here's how they work.](#), *The Washington Post*, March 24, 2022.
96. [Mobile ID](#), Delaware Division of Motor Vehicles, accessed June 6, 2022.
97. [Mobile ID](#), Arizona Department of Transportation, accessed June 6, 2022.
98. [D.C. Council approves digital driver's licenses, but we don't know when we'll get them](#), *National Public Radio*, December 9, 2021.
99. [Center for Excellence in State Occupational Licensing](#), National Conference of State Legislatures, accessed June 6, 2022.
100. [Why Digitizing Professional Licensing is Critical in the Time of Social Distancing... and All Times](#), Government Technology, March 27, 2020.
101. [The State of Occupational Licensing Research, State Policies and Trends](#), the Council of State Governments, accessed June 6, 2022.
102. [Healthcare Occupations](#), United States Bureau of Labor Statistics, April 18, 2022.
103. [Internet Voting in Estonia](#), National Democratic Institute, accessed June 6, 2022.
104. [Estonia, The Digital Republic](#), *The New Yorker*, December 11, 2017.
105. [What a digital government looks like](#), TED Conferences, accessed June 6, 2022.
106. [How do Estonians save annually 820 years of work without much effort?](#), E-Estonia, December 12, 2017.
107. [Estonia PM: Country Saves 2% of GDP by Going Digital](#), International Peace Institute, May 3, 2016.
108. [Chapter 13. Case Study 8: Estonia e-government and the creation of a comprehensive data infrastructure for public services and agriculture policies implementation](#), Organisation for Economic Co-operation and Development, accessed June 6, 2022.
109. [TopTech ranking: Estonia's 25 most valuable tech companies valued at almost €21 billion](#), Tallinn, October 6, 2021.
110. [How Europe is responding to the coronavirus pandemic](#), *Politico*, March 13, 2020.
111. [What the United States Can Learn from Estonia on E-Governance](#), Center for European Policy Analysis, August 31, 2021.
112. [Marriage and Civil Union Certificates](#), Connecticut Department of Public Health, accessed June 6, 2022.
113. [Here's how much a marriage license costs in each state](#), *Insider*, November 26, 2018.
114. [Where to Write for Vital Records](#), Centers for Disease Control and Prevention, May 16, 2022.
115. [How do I change or correct my name on my Social Security number card?](#), United States Social Security Administration, April 11, 2022.
116. [Directory of Visa Categories](#), United States Department of State-Bureau of Consular Affairs, accessed June 6, 2022.
117. [Driver's License Cost by State 2022](#), World Population Review, accessed June 6, 2022.
118. [Corrected Titles](#), Office of the Illinois Secretary of State, accessed June 6, 2022.
119. [Name Changes and Corrections](#), District of Columbia Department of Motor Vehicle, accessed June 6, 2022.
120. [Change or Correct a Passport](#), United States Department of State-Bureau of Consular Affairs, accessed June 6, 2022.
121. [Fee Calculator](#), United States Department of State-Bureau of Consular Affairs, accessed June 6, 2022.
122. [My personal information has changed. How do I update my information so that I can continue to receive TSA PreCheck®?](#), Transportation Security Administration, accessed June 6, 2022.
123. [Global Entry Frequently Asked Questions](#), United States Customs and Border Protection, June 16, 2022.
124. [Online Voter Registration](#), National Conference of State Legislatures, June 24, 2022.
125. [Wyoming General Election Voting Registration Forms](#), State of Wyoming, accessed June 6, 2022.
126. [The Pandemic Has Accelerated Government Innovation](#), *Government Executive*, August 31, 2021.
127. [Federal IT Modernization: How the Coronavirus Exposed Outdated Systems](#), U.S. Government Publishing Office, July 20, 2020.
128. [NYS Department of Labor Announces \\$9.2 Billion in Unemployment Benefits Paid During Covid-19 Pandemic, Including Nearly \\$290 Million Released Through New System for Back Pay](#), New York State Department of Labor, May 18, 2020.



About C_TEC

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The Chamber Technology Engagement Center (C_TEC) tells the story of technology's role in our economy and advocates for rational policy solutions that drive economic growth, spur innovation, and create jobs.

The U.S. Chamber of Commerce is the world's largest business federation representing the interests of more than 3 million businesses of all sizes, sectors, and regions, as well as state and local chambers and industry associations.

The U.S. Chamber's North Star is and has always been to stimulate economic growth and lead the business community's response to solving the nation's most important challenges. For more than 100 years, we have advocated for pro-business policies that help businesses, support jobs and grow our economy.

Our members range from the small businesses and local chambers of commerce that line the Main Streets of America to leading industry associations and large corporations. They all share one thing: They count on the U.S. Chamber to be their voice in Washington, across the country, and around the world.

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