SCREENDOOR

A Vision for Paperless Government

www.dobt.co hello@dobt.co

Abstract

Forms are ubiquitous in government. One might even say they are synonymous with government. And yet, they are an immense drag on productivity.

The problem with forms is threefold. They are often poorly designed and, thus, fail to effectively collect information in a way that generates usable data. In addition, they generally require cumbersome business processes with myriad layers of approval, archival procedures, and tracking systems. Finally, as they most commonly exist today, government forms are generally not machine-readable. This means that humans must perform error-prone, time-consuming data entry to take their agencies digital.

It is the position of this paper that the government form is a fundamental blocker to “fixing” and digitizing government. Thus, the best solution for going paperless must address the aforementioned problems: it must capture data in an efficient and usable format, provide ways to streamline and automate business processes, and reduce or eliminate data entry at the end of the form’s journey.

Introduction

Forms are a mainstay in government, used as a part of nearly every bureaucratic process in nearly every agency. The Oxford English Dictionary defines a form as "a printed document with blank spaces for information to be inserted." The context of government allows us to be more specific: a form is used to collect *the right information* from *the right source* at *the right time*.

Forms are so embedded within bureaucratic processes because they are excellent at collecting standardized sets of information. However, a completed form is only the beginning of most government processes. Because a form generally collects targeted information for a specific purpose (e.g. to assess tax liability or register interest in running for political office), it must be moved through the receiving organization—first, for evaluation or approvals and, later, for data entry into a larger system of record. In these secondary and tertiary processes, the form introduces inefficiencies and redundancies that must be solved in order to move forward.

This paper asserts that there are three problems that contribute to forms' inefficiency within government.

1. Forms are often poorly designed for the task of data collection.
2. Forms are often accompanied by a bulky approval or evaluation process, which adds significant time and cost to an already inefficient system.
3. Forms, in most cases, require extensive data entry to move the collected data into the agency's ultimate system of record.

To answer these problems, a solution for government forms should provide three services.

First, forms should collect the *the right information*, from *the right source*, at *the right time*, in a usable format. This collected information should then set a process into motion, whether that be performing a task (e.g. issuing a permit), fulfilling a request (e.g. fixing a broken street sign), or answering an inquiry (e.g. sending a course catalog to a potential student).

Second, the process behind every form should be as streamlined as possible, without causing confusion or unnecessary burden. In order for forms to be a productive tool for government, their corresponding approval and review processes must be cut to their bare minimum and assisted by automation when possible.

Ideally, this means that only the people who *need* to review, approve, or sign the form do. In addition, anything that does not *explicitly* or *legally* require a signature should not receive one; if a digitally verified approval checkbox can replace a signature, initial, or stamp, it should. In short, anything that *can* be automated, eliminated, or streamlined, *should* be.

Finally, the solution must minimize or eliminate data entry, which costs the government excessive time and money. The fiscal impact of data entry alone should be compelling to anyone responsible for an organization's bottom line, but there is another reason for this requirement. Most data entry within government is still completed by hand, which introduces a huge margin for human error.

This paper will discuss these problems and requirements in depth, and then present a detailed solution for addressing these issues. Instead of highlighting a single product or service, the paper will detail the features necessary to remake each step of the process, so that those seeking such a solution will be equipped with both detailed specifications and a roadmap for putting them in place.

The paper presents a case for fixing forms, alongside a thoughtful structure for doing so. It argues that the only way forward must involve *complete* digitization of the form, dedicated business processes, and related data entry. The task of digitizing and improving government is predicated upon doing this thoughtfully.

Background

Without a serious restructuring of business processes and a move toward digital-first service delivery, the government is doomed to remain in a state of arrested development, patching analog problems with poorly fitted digital solutions.

In order to truly fix forms, we must break down the problems that plague them into their most basic components. We must also analyze the current marketplace of solutions carefully and lay out a conscious method of replacing current systems. This section will guide the reader to a more complete understanding of the problem, before presenting a thorough review of solutions in the final section.

The Problem with Forms

At all levels of government, organizations are struggling to manage their transition to the digital frontier, and this is especially true for government forms. Even in an age of amazing technical breakthroughs and the movement toward near-universal digitization of all things analog, forms are a hold-out. In light of the requirements set forth above for efficient data collection, this section will detail the specific problems with government forms.

Poorly designed data collection

As they exist now, most forms are poorly equipped to enable efficient data collection. This is because, more often than not, government forms are modeled after each other, rather than organized around the process it facilitates.

Forms are generally designed within the vacuum of an organization's particular bureaucratic processes. Thus, even if the processes behind two different forms are very different, forms that collect similar types of information tend to look alike. For example, most forms ask for the respondent's contact information, as well as information related to the business process (such as the VIN and license plate number of a car to be registered). Occasionally, there are also fields marked "Internal Use Only," intended for administrator evaluation or review. In all, it seems that the natural instinct is to copy another form's layout, even if that layout limits the efficacy of the underlying business process.

Many forms are also limited by their physical layout. As well-intentioned as a form designer might be, form fields are often too small to contain the information they're meant to hold. A common example is an address field; if, in an attempt to save space on the page, form designers limit the address field to one line, there may be too little room for long street names or apartment numbers.

In response to this limitation, some forms, especially those that are more complex, eschew space limitations altogether, requiring the respondent to provide additional information on separate sheets of paper. Since these separate sheets are outside of the structured form, the information therein may be more likely to omit important data or neglect proper formatting. In the worst case, these attachments may introduce problems that a structured form is supposed to solve.

Finally, physical forms are constrained by the shape and layout of the printed page, which prevent them from adapting to the responses of different applicants. In order to collect a particular set of data, forms are generally designed for the respondent to complete in a linear fashion. For this reason, they fail to adapt to alternate situations in which the respondent must submit more or less information. In practice, this means that the form must either require additional information to be submitted outside of the form or overcompensate with gratuitous fields that do not apply to every respondent (such as the IRS form 1040's long list of income sources). The drawbacks of requested attachments have already been discussed above.

Bulky approval processes

After a respondent fills out a form (however complicated or inefficient) and before data entry becomes a problem, a form generally makes its way through a lengthy and complex approval or evaluation process.

These processes are labyrinthine for reasons which vary between processes. Some forms require the input of multiple offices; for example, an analyst in the budget office might need to check the cost of a given transaction against an operating budget. Other forms require approvals from multiple levels of authority; for example, a high-level officer may need to ensure a submission aligns with the agency's larger mission. Yet other forms might require external stakeholders to weigh in with more qualitative feedback, like in hiring or procurement processes. No matter the reason, nearly every form is fact-checked or reviewed at least once before being stashed in a filing cabinet or transferred to a more permanent system of record.

For every stop along the way, the form may receive an identifying mark to indicate that it has passed through the requisite parts of an approval process, whether that be a tracking number assigned in a form field for internal use, an initial next to a specific piece of verified information, or in-depth comments from an evaluator. Together, all of these identifying marks and the sub-processes they represent should ensure that the final data entered into the system has been thoroughly vetted. However, as with any manual process, there is plenty of room for error.

Even beyond the margin of error introduced by these bulky business processes, the storage requirements tend to increase with each additional reviewer. In many agencies, each step of an approval process is accompanied by a photocopy and an entry in a tracking log to ensure that nothing is lost or modified along the way. This produces endless paper waste, which in turn requires additional storage space and labor, both for filing and disposal.

Another, more minor point here relates to records retention. Most records retention schedules are maintained locally, meaning that when an office determines how long paper and/or electronic copies should be retained, they generally take into account only the forms and documents they "own." Since many offices also store partial copies of forms for which they play a part in the approval process, an agency will be left with redundant and incomplete records. In terms of records retention, this is a nightmare.

Isolated from existing systems of record

Paper and PDF forms are unable to integrate with existing digital systems of record, which creates a need for expensive, prolonged, and error-prone data entry.

In the past, data entry was an inevitable externality of nearly every business process, but the move towards complete digitization has remade this expectation in nearly every industry besides government. The vast majority of industries have made data entry wholly unnecessary. Because they collect data in a more efficient way, they are able to put it to use immediately.

Of course, many of these industries lack the heavy oversight that the government must engage with on a daily basis. Nevertheless, there is little reason to prevent government entities from collecting data in a usable format and performing the requisite review before archiving.

The overwhelming majority of government forms still collect data in a format that requires additional data entry to move it into a flexible, more usable format. The most obvious example is that of a handwritten form, which always requires manual re-keying into a final system of record after internal processing. However, even electronic forms often fail to provide a bridge between the form and the final system of record.

An ideal system would make the form the point of data entry, with approvals then performed within the system of record. Alternatively, a system could provide an automated solution for moving data from the collection point into the ultimate system of record. This way, the information could be ported in and automatically refreshed with the push of a button.

Instead, most electronic forms solutions store collected data in a proprietary format or database. Unless the agency willingly adopts a duplicative system of record, extracting data may require several additional steps. For example, a forms solution that provides a CSV export of collected data but doesn't provide an integration to the agency's existing system of record will require additional labor to routinely transfer that export into the legacy system. Further, if the fields collected by the form do not align perfectly with the fields in the existing system's database, reformatting the data will add an additional burden before the data is usable.

Ultimately, most solutions fail to solve the fundamental problem because they require more than one step to get the data from the point of collection into the final system of record.

A Way Forward

Many of the problems identified in the previous section are the same issues facing government efficiency at large. Government entities must digitize the interface between citizens and bureaucrats. In most cases, this interface involves (or simply *is*) a form. Thus, in order to realize a truly digital government, it is necessary to digitize forms and the processes behind them. Without this vital step, the government will be unable to move beyond its current, technologically arrested state.

This section will offer a brief overview of the current forms solutions, from simple paper forms to sophisticated software applications, before presenting a specific set of requirements intended to directly combat the problems previously discussed. The resulting list will serve as a checklist for anyone hoping to build or buy a solution for more effective forms management.

Current Forms Solutions

As discussed throughout this paper, forms come with a myriad of shortfalls, but they *are* fixable. The starting point, however daunting, is to divorce government data collection from its anchor to the Industrial Revolution and expose it to the digital age. Below is a survey of the current shapes that government forms have taken, along with the drawbacks and benefits of each. Where appropriate, digital solutions are discussed.

Paper

Although word processing and photocopying have made them a bit easier to use, paper forms are the least evolved format for structured data collection.

In most cases, the original (or "master") copy of a form is used to generate paper copies as needed. The form may be designed in a word processing program, but, in practice, the workflow around filling out and processing responses is no different than if the questions were handwritten. Working from a paper form causes a constant loss of print quality, introduces inconsistencies from handwritten responses, and requires both bulky business processes and excessive storage.

First, photocopying generally degrades the quality of a form with each successive copy. Even if an office vigilantly produces copies only from the original or master, copies will generally be imperfect when compared to an original. Far from a superficial problem, degraded forms can prevent accurate and efficient data collection from respondents.

Some agencies have attempted to solve the issue of degrading quality from the outset by offering scanned PDF copies of their form for the respondent to download on their website. (For example, the City of Los Angeles provides several such forms for business vendor registration.) While this ostensibly solves half of the problem of quality degradation, it still results in a handwritten submission and a paper-storage-heavy approval process. In short, it solves nothing of importance.

Second, handwritten responses introduce endless problems for data collection: Handwriting may be illegible, necessitating further follow-up; the form's fields may be too small to accommodate the full response, leading to crowded or incomplete answers; or the data may simply be missing, since a handwritten form cannot ensure that answers are complete and in the correct format. Worst of all, because photocopying often renders handwriting illegible, handwriting exacerbates the issue of print quality degradation even further, especially when the copier is poorly calibrated for contrast and brightness.

Handwriting also introduces an issue with data integrity. Without features that validate input information or a system of version control, handwritten responses can easily be tampered with during processing or data entry.

Third, paper forms require more cumbersome approval and retention processes than digital-first solutions. These processes tend to drive more paper usage than they should, since each approval or review is often accompanied by a photocopy for posterity (in case the original is lost during transmission). By default, this creates a system of redundancies. Every office that touches the form retains a copy, but since this form is not "complete" until the final stage, those copies hold no real authority. The implications for records retention have already been discussed above.

PDFs

The next evolution of forms begins with an electronic “master” form. However, many respondents still submit handwritten, paper copies of PDF forms by default. For example, before the advent of eFile systems, the IRS hosted a PDF copy of Form 1040 for respondents to fill out electronically, but respondents were still required to print out the form, provide an original signature on a hard copy, and file the form by mail.

On the surface, PDF forms address the problems that handwritten responses introduce to a forms management process, but in reality, respondents often still submit paper copies of the form or fill out PDFs by hand. Even eFile options are widely underutilized, because many taxpayers lack access to computers and reliable internet.

Ultimately, fillable PDFs represent a well-intentioned move toward digitization, but fail to address two of the largest issues with forms: bulky approval processes and excessive data entry.

“Smart” PDFs

In recent years, many companies have introduced “smart PDF” solutions, which enable respondents to fill out PDF forms digitally, whether on the web or a mobile device. Some of these solutions offer a database product along with the forms, which converts the submitted information into a machine-readable format that can be exported and, theoretically, fed directly into a legacy system.

Again, in theory, these forms could fulfill most of the requirements stated earlier in this paper. In practice, however, a smarter electronic format does not incentivize government entities to cease their reliance on paper forms and manual approval processes. More critically, smart PDFs do not, by themselves, provide a mechanism for approval and evaluation processes, or if they do, they simply embed the process into the smart PDF through additional form fields for internal use.

As stated in the introduction, a truly comprehensive solution should both encourage and enable the automation of approval processes to the greatest extent possible. Thus, a solution that augments an already crowded form with additional fields, rather than providing alternatives to replace or eliminate them, has missed the mark.

In all, smart PDF forms present the last stage in digitization before a proper rethinking of the structure of the underlying form, which must involve more robust validation and logic.

Electronic forms

Prior developments in digital forms failed to truly transform government data collection beyond its original 8.5 by 11 inch bounds. However, the move to a form-building software application offers a nearly complete solution, as it builds upon the best parts of an electronically filled PDF by offering more flexible data collection, validation, and conditional logic. Some solutions may even provide features that eliminate data entry.

Moving beyond the letter-sized page opens up a whole new dimension of form navigation. While some smart PDF solutions may offer form field validation, forms that aren't bound to a traditional page can go one step further. Without the constraints of a PDF, electronic forms can use conditional logic to change dynamically as the respondent moves through the fields.

For example, if someone has lost their passport and must apply for a new one, a well-designed passport renewal form should allow the respondent to avoid answering questions about the lost document. In the best software, these form fields would simply disappear if the applicant indicated that they no longer had the misplaced passport. A form with conditional logic can change shape as it collects input, helping the respondent move through more smoothly and ensuring that a form is filled out accurately the first time.

In addition, removing the traditional boundaries of a letter-sized page, analog or digital, brings a multitude of advantages. Smart PDF forms may have shed the problems posed by handwriting, but the cramped form fields on a PDF may still not accommodate all of the information requested. An electronic form does not need to impose these *de facto* limits on collected information, although most solutions offer the option to limit character or word counts if desired.

Along with features that assist with the data collection process, web-based form builders and similar software applications offer a way to collect data in a digital-first format, which can minimize or eliminate data entry after processing. Instead of simply being the "source of truth" for the data, the form itself also facilitates data entry, since the information is no longer trapped in the form and instead can be extracted via an export from the proprietary database or, if available, its API.

However, most electronic form builders provide a spreadsheet of responses for review instead of a comprehensive tool for routing and automation. In this scenario, approvals and evaluation processes are still cumbersome. Without an audit trail for approvals or space for qualitative feedback from reviewers, most solutions are not robust enough to support and automate a collaborative process.

With some policy changes, a streamlined approval process may still be possible. Rather than requiring a stamp from each approver, an agency could theoretically make use of internal form fields, which are hidden from the respondent, to track the form's journey through the various steps of its business process. Internal fields might also offer a way to collect reviewer comments during a more qualitative process like hiring, but these solutions don't work effectively for larger teams. In most cases, internal form fields will not be a large improvement from the current system, which is usually hobbled together using email and Excel.

Electronic form and workflow tools

Although electronic form builders solve for most of the issues raised in this paper, they fail to remedy the most bureaucratic problem—approval and evaluation routing.

As discussed above, some features in an electronic form builder could provide a rudimentary solution for streamlining or digitizing parts of a business process. However, these workarounds may not necessarily *improve* the underlying behavior, and there is little to no chance of automating the business process.

Instead of offering a “band-aid” solution for approval and evaluation processes, electronic form tools should offer workflow tools that encourage and contribute to the streamlining of business processes. In practice, a form builder should offer robust tools that allow for workflow automation, internal collaboration, and external communication.

Most such solutions target a specific subset of government forms. For example, OpenCounter streamlines submissions and processing for small business registration, NextRequest streamlines public records requests, and SeeClickFix does the same for non-emergency reporting and service ticketing.

However, this paper envisions a unified solution to digitize the entirety of government forms, which does not currently exist. The specific requirements for such a solution will be discussed in detail below.

The Solution

As stated previously, it is the position of this paper that a complete solution should do three main jobs: facilitate easy and effective data collection; streamline approval and review processes; and eliminate data entry. The following sections describe the requirements for a solution that addresses all of the above, organized by the job which they facilitate.

Simpler, more efficient data collection

This paper has already discussed the inadequacies of government forms at length. However, it is important to reiterate a single point here: a form's design is intricately linked to its function. Government forms have traditionally been confined to the size and shape of a page, which places an upper limit on the usability and efficiency of the respondent's experience.

A viable forms solution should help the form designer map the data they need to collect to the respondent's circumstances. This begins with an intuitive form builder that offers a wide selection of design elements and ends with several vital features that each contribute to dynamic and effective data collection.

The form creation interface

Instead of offering a costly hands-on service, or leaving the agency and form owner to figure out the software on their own, a successful forms solution will be both *intuitive* and *instructive*.

An *intuitive* solution does not predicate successful task completion upon the user's technical literacy. Instead, the interface should be easy to navigate with minimal training or startup costs. Simply put, if the solution comes with a timeline of "setup" meetings, it may not be the best.

But no matter how simple the interface is to navigate, customers may still run into problems. Hence, it is also important for the company behind the software to be *instructive*, knowledgeable, and helpful. The company should have a clear track record of empathy for power users and technical novices alike, providing extensive self-service documentation and guides, written in plain language, to help people onboard themselves.

Moving forms into a digital context can be complicated and time-consuming, but it doesn't have to be. The ideal form builder will allow thoughtful and deliberate design right out of the box and be accessible even to those without technical backgrounds.

Validation

A good solution will also provide form field validation. In other words, it will check a respondent's answer against the expected format for that field, preventing incomplete or poorly formatted answers before the form is even submitted. For example, if the respondent fails to provide a full domain name when entering their email address, a forms solution with validation will ask the user to enter a complete address before submitting their response.

Of course, this feature's benefits reverberate through the entire data collection process; if fields are validated before submission, reviewers don't have to check for formatting mistakes. Instead, they can focus on fact-checking and qualitatively evaluating the fields they are responsible for.

Conditional logic

Conditional logic is a game-changer for government forms because it offers a way to adapt a form to the respondent's needs in real time. Take, for example, a form that calculates tax liability based on certain inputs. If one section of the form pertains to self-employment taxes, these questions should only appear to respondents who have indicated that they are self-employed. Otherwise, the form may be submitted with unnecessary and inaccurate data, especially if the copywriting in the form fails to guide the respondent correctly.

In this example, form solutions with conditional logic would allow the form designer to show fields related to self-employment taxes only to self-employed respondents. Conditional logic ensures that respondents will be guided through the form without confusion or unnecessary data collection.

File uploads

While this paper has discussed the issues introduced by allowing or asking respondents to submit additional information outside of the form, a form builder should provide the option to accept uploaded files. However, for the reasons discussed earlier in this paper, file uploads should not be used to enter additional information that is more appropriate to receive inside the form itself.

Instead, file uploads can be used to aggregate all of the documents surrounding a form into a single system of record. For example, scans of documents that prove identity, like a passport or photo ID, can be uploaded as attachments. File upload fields are an important way to collect documentation that would normally have to be collected before the respondent submits a form.

Payments

While not all government forms require payment at the time of submission, a subset of them will remain at least partially analog if a forms solution cannot collect fee-based submissions, defeating the purpose of this exercise.

Collaboration and automation tools built in

As discussed at length above, forms generally require lengthy and circuitous approval processes, which can kill productivity. While a forms solution alone cannot solve this for an organization, a good solution will challenge the current business process and, hopefully, encourage cross-departmental behavioral change.

Sometimes, business process improvements are narrowly defined as either streamlining or automating a workflow. But in many processes, improved collaboration can provide an even greater level of cost or time savings. Take, for example, a business process that requires five phases of evaluation, each of which takes a week to complete. Agencies can either save time and money by automating or eliminating one of the phase takes, or by reducing the amount of time each phase takes. Better collaboration tools can facilitate the latter, by making it easier for a team to reach consensus around a given submission.

For that reason, this paper recommends a forms solution that includes *both* automation and collaboration tools.

Automated approvals and evaluation

After the agency redesigns their form to more efficiently collect data, the solution should make it easier to keep the form moving automatically through its assigned workflow. Ideally, this all happens within the same platform, to ensure auditability and maintain data integrity.

The acceptance criteria for this requirement is simple: does the solution provide options for automatic routing, without resorting to sending a copy over email? If not, skip it.

Streamlining and tracking approvals

Once the business process is automated as much as possible, the issue of approvals gets slightly more complicated. Every organization approves submissions differently, with everything from rubber stamps to initials and signatures. These methods may even vary by office, meaning that a single form can be “approved” in several different ways on the same page.

In rethinking forms as a whole, this paper has argued that approvals should be redesigned as well. Ideally, a form should only receive approvals that it explicitly requires, either by law or by internal policy. Without this limitation, it is difficult to trim the fat of any given business process.

Once the approvals process has been pared down to that which is absolutely necessary, the user must then determine how to set up and track approvals in the least complicated way possible. In the best case, a forms solution should offer an activity or audit feed that lets an administrator track each user’s interaction with the form, complete with timestamps and other metadata. This offers the most granular control possible, while removing the need for additional signatures or stamps on the page.

Version control

In addition to tracking approvals, a forms solution should be able to audit and store changes made to a submissions, including an audit trail for approvals and version control for revisions. If the solution fails to provide a clear method of tracking interactions with the form, the form’s data may be changed without notice, leaving administrators to decipher a trail of changes and complicating efforts to ensure data integrity.

Built-in collaboration

Colleagues within a government entity may collaborate around a submission in multiple ways, such as categorizing and tagging submissions, rating submissions by qualitative and quantitative metrics, comparing the aggregate ratings of their colleagues, and requesting subjective feedback alongside the objective feedback generally offered.

Many forms solutions fail to provide built-in collaboration tools. Their only option for reviewing responses is to export a spreadsheet, which is decidedly not collaborative. A forms solution should encourage and facilitate collaboration inside the tool itself, eliminating the need for a lengthy email discussion or a complex spreadsheet that may not effectively capture feedback or approvals.

A forms solution should also provide a robust reviewer dashboard that guides reviewers and approvers through submissions, just as its data collection features should do for respondents.

Built-in messaging for follow-up communication

Some business processes may require governments to communicate with respondents after they submit a form. For example, the agency may want to inform the respondent of the next step in the process, such as when a hiring manager needs to send an interview request to an applicant. In other cases, the administrator may need to request more information, like when a contract manager needs proof of certification from a vendor during procurement selection.

In these cases, the solution should let users communicate with respondents without ever leaving the application, removing significant friction from the process.

Internal fields

Barring the inclusion of the above collaboration and automation tools, a forms solution should, at very least, allow users to add internal fields within the form builder that are hidden from the respondent. Internal fields are a minimally viable alternative to the solutions discussed in this paper.

Even when collaboration and automation tools are built in to the solution, internal fields may still prove useful to some business processes. They offer a designated space for an approver or reviewer to add information to the form itself, which may be necessary for some processes. For example, in a purchase order, an internal field could allow an analyst to insert the line item budget that corresponds to the purchase.

Usable, actionable data

Because data storage requirements can vary between organizations, this section will take a different approach, discussing the merits of four separate different solutions, rather than focusing solely on desirable features.

The final goal of remaking forms is to facilitate form data transfer to a single source of truth without the need for manual data entry.

This paper assumes that, for most agencies, a forms solution should not add an additional, proprietary system of record into an already complicated IT ecosystem. But for some organizations, a new solution may serve to replace an aging system that would be replaced in due time regardless. In these cases, a new proprietary system of record may be acceptable, or even desirable. This solution will not be discussed below.

Instead, this paper will address agencies which require the transfer of data collected from a form into a legacy system. Instead of purchasing new software with a proprietary system of record, these agencies should seek solutions that facilitate seamless data transfer. Currently, this can happen in one of a few ways, four of which will be discussed in detail below.

Custom scripts

Some agencies may opt to build an integration between the new forms solution and their existing system of record. However, if the company behind this solution does not offer a pre-packaged integration, it might be costly to build it.

In this case, an agency could hire a developer to write a custom script to extract responses from the forms solution and feed them into a legacy system, eliminating data entry and ensuring that data is immediately usable within the system of record.

This is a two-part process. First, the script needs to parse the data from whatever format the form builder exports to; the export may be a CSV, Google Sheet, or Excel spreadsheet. Then, it must import this data into the system of record. Essentially, a script eliminates the human labor usually involved in entering data into a legacy system, whether manually re-keyed or imported in batches.

In the end, however, contracting out for a custom script is not ideal. This additional work will increase costs beyond the original purchase price for the forms solution and may even require extensive upkeep to maintain the connection during software upgrades. (The question of "off-the-shelf vs. custom-built" software solutions in government is a topic for another paper.)

A robust API

Some forms solutions offer access to an application program interface (API), which may make it easier to communicate directly with legacy systems of record. Although this may still require some work and custom development on the agency's part, a software solution that provides API access will likely provide data in an open format that more easily facilitates data transfer.

In simple terms, an API provides access to information in the form solution's database, allowing a user to extract that information without requesting special access. Although the agency will still need to script the import portion of the transfer, using an API eliminates the need to parse data exported from the form builder. Essentially, a software solution that offers API access will make it easier to access and extract collected information.

The benefits and downsides of an API are similar to a custom script. However, a well-documented API reduces the potential future maintenance costs of an integration with the legacy system of record and provides a greater guarantee of the reliability of your process.

Integrations with third-party applications

Even if the solution does not integrate directly to a legacy system of record, it may provide an option for automating data transfer through a third-party integration. Many of these integrations utilize dynamic logic, reading actions in one system and reacting with an action in or to another. Zapier, IFTTT, and Microsoft Flow can all perform this function with different services.

To understand the benefit of such a system, imagine that a form builder offers a Zapier integration. Using Zapier, the agency could establish a link between a given form and the appropriate system of record, like Salesforce or a Google Sheet. Whenever a form is submitted, pre-configured logic would ensure that a copy of each of the response's form fields are entered into the linked spreadsheet, database, or CRM. This will happen almost instantly after submission, since the integration requires no trigger besides that which is pre-configured

While integrations may enable easier data manipulation or analysis, they don't always solve the fundamental issue of preventing data entry, since the integration must support both the form-building app and the existing system of record. If an agency relies on a legacy system not served by third-party integrations, the integration will not bridge the gap without a little help.

Webhooks

The integrations discussed above often use webhooks to facilitate data transfer. They first extract data from the form builder, after which they populate it into the ultimate system of record with pre-configured logic. However, these integrations are limited by the third-party provider and by the self-selection that occurs when a provider is financially incentivized to build an integration.

For example, Zapier provides a developer platform which enables a developer from a forms solution company to integrate their software into the Zapier ecosystem. However, the form builder can only “zap” its data to another app within the Zapier library. As mentioned in the section above, many agencies use legacy systems that are unlikely to be included in this library or that of any similar integration, either because they are custom-built in house or built-to-suit by an enterprise software company.

With webhooks, an agency could configure an integration inside of the form builder to notify them whenever a response is marked for transfer. (Each program will handle this a bit differently.) When this happens, the webhook will import the response into their legacy system at a near-instantaneous speed.

Ultimately, webhooks offer the best solution for facilitating data transfer as described throughout this paper, based on current technology. Although this solution is currently unavailable in the market, the best form builder would offer agencies a way to use webhooks, without the limitations of a third-party integration provider.

As of publication, we are unaware of any form builders that offer this solution.

Conclusion

The future of forms, and the processes behind them, is inextricably linked to the campaign to digitize government services. Without the right tools and the thoughtful restructuring of business processes, forms will persist as a drag on productivity.

Ultimately, the best forms solution will digitize data collection, protect the data throughout approval and evaluation routing, and make that data useful and actionable without additional processing or manipulation. Moving forward, a trip to the DMV should not be frustrating to those on either side of the counter. Indeed, it might even be unnecessary!

Easing the friction in each stage of this workflow—from data collection to evaluation and transfer enable government to remake the vast majority of its processes.

About Us

The Department of Better Technology helps governments deliver great digital services to those who depend on them.

Our flagship product is Screendoor, the dedicated platform for digital-first government services. Screendoor replaces PDFs with mobile-friendly online forms, brings collaboration into a beautiful and intuitive web application, and automates digital workflows.

A note from the author

This white paper represents our vision for the future of government. It is not a pat description of our services or a sales pitch. While we believe that Screendoor checks the majority of these boxes rather well, the purpose of this paper is to set a course for truly great digital services, enabled by software that reinvents forms in a digital environment. It is our belief that government entities must commit to remaking forms and the business processes around them before we can hope for a brighter future for digital services.

We're committed to this vision and are shaping Screendoor into the best solution to remake forms, automate business processes, and make bureaucrats' lives easier. Want to join us? Drop us a line at hello@dobt.co.