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Chapter 5
Online Resolution and Citizen Empowerment:
Tax Appeals and Court Resolutions in North America

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ABSTRACT

In the private sector, the growth in interactive, online technology use has already disrupted many private industries, from medicine to finance to entertainment. Interactive, online technology has empowered consumers, giving them more choices and better information, which has in turn transformed global business. Now it is clear that government services are in the process of a similar transformation. Government agencies face unique challenges in implementing interactive, online technology, and understanding best practices can be a challenge. In this chapter, the authors describe their first-hand experience helping government agencies build advanced online dispute resolution systems. They focus in particular on two case studies: transitioning property tax appeals from a paper-based process to an interactive online process and introducing interactive online technology into the courts. Through this examination, they (1) highlight the unique challenges we encountered and (2) make recommendations for government agency decision makers from the lessons we learned.

INTRODUCTION

In the United States, individual citizens now use information and communications technologies routinely in many areas of their lives. According to the Pew Research Center's Internet & American Life Project (n.d.), 98% of Americans ages 18-29, 92% of Americans ages 30-49, and 83% of Americans ages 50-64 use the internet. In the private sector, this growth in interactive, online technology has already disrupted many industries, from medicine to finance to entertainment. Technology has empowered consumers, giving them more choices and better information, which has in turn transformed business. Now it is clear that government services are in the process of a similar transformation. This individual empowerment is fundamentally changing the relationship between citizens and government, and the significance of this change may yet turn out to be more revolutionary in the public sphere than it has been in the private one.

Most individuals are now quite familiar with the interactive, online technology model of logging into a service provider's website, picking a username and password, and filling out forms and uploading information. Whenever a question arises about the service in question, the user can log back into the website, check the status of their request or case, post new information, and log out again. This kind of asynchronous, always-on interface is commonplace for people trying to make health care elections for their private insurance plan, or rebalance their 401-K with their bank, or sign their kids up for summer camp. It is also familiar to the billions of people who have used eBay, Facebook, LinkedIn, or any number of online services. But it is still uncommon in government services.

Public agencies move slowly, by design. Investment in public infrastructure is much more deliberate than the private sector. Government rarely is the first adopter of new innovations. But once an innovation has proven its utility, government investments in that innovation can be sustained and long-term. As the internet becomes more ubiquitous, the value of building the future on interactive online technology is beginning to make more sense to public decision makers.

In this chapter, we discuss the efforts of public agencies to implement interactive, online technology to support their work, focused particularly on two case studies we have come to know in depth: property tax assessment appeals and civil claims in courts. First, we discuss the challenges faced by public agencies, and how citizen expectations have shifted over the past decade. Second, we present some background about cloud-based models for software development, and the benefits they can bring to public agencies looking to meet changing public expectations. Third, we examine the property tax appeals process, focusing in particular on efforts to make appeals more interactive and efficient through the use of interactive, online technologies. Fourth, we examine efforts in courts to empower citizens to resolve their own disputes

without requiring a hearing. Fifth and finally, we generalize some of the lessons we have learned in working with governments, and distill a set of recommended best practices that can help guide public decision makers as they contemplate how to update their services for a networked world.

CHALLENGES FACED BY PUBLIC AGENCIES IN UTILIZING INTERACTIVE, ONLINE TECHNOLOGY

Ten years ago, proposals to move government services onto the web were perceived in many circles as elitist. Because computers and internet connections were expensive, it was thought that spending public resources on internet projects would benefit only those affluent enough to afford access. This "digital divide" was a compelling enough concern to delay investment in internet-based service channels for many public agencies. But as the cost of access has come down, and internet access has become more ubiquitous (particularly through mobile devices), concerns about the digital divide have faded.

But even with the easing in concerns around the digital divide, many government agencies have still not yet implemented interactive, online interfaces for their citizens. For many local, state, and federal government agencies, forms must still be submitted in person, by mail, or by fax. If online filing forms are available, they are quite simple; submitted information is simply forwarded to an agency employee's email inbox, which means the submitter cannot log back into a website and see updated status information for their submitted request. These approaches offer little of the power available through common websites like Amazon and Facebook, which count a majority of Americans as users.

Public agency employees are often painfully aware of the shortcomings of their existing technologies, and given no resource constraints, they would happily install updated platforms that provide more sophisticated interactive, online interfaces. Unfortunately, there are several types of obstacles faced by these agencies in making these updates. Some of the most common include:

- **Expense:** Technology systems are often expensive to implement, because the administrative processes they must support are complex. There may be dozens of case types and hundreds of statuses for individual cases, and hundreds if not thousands of individual agents working the cases in question. Implementing technology that can capture all of that complexity is no simple challenge.
- **Legislative requirements:** There are often crisscrossing laws that govern how public agencies can do their work. Valid concerns about privacy and

information security have led to very restrictive rules around how agencies can store and share data, some of which were put in place long ago, before technology became more mature and flexible. This makes creating interactive, asynchronous information portals that comply with existing law extremely complicated, and creates incentives for public sector leaders to wait until new legislation is implemented that may offer more flexibility.

- **Unique Processes:** Each public agency has usually developed its own particular process design. No two agencies are identical in their case management or interaction processes. Each has unique staff roles, filing forms, and rules and policies. Rainey and Katsh (2012) stated, "When new online technology is created for any process, the initial impulse is to create online mirror images of the 'live' or offline process" (p. 248). Some agencies aim to replicate exactly their current processes online. Public agency staff may have been using the existing system for so long that it may be difficult for them to envision the new system as something other than an online replica of their offline process.

- **Long Timeframes:** In addition, government contracting can take a lot of time. Contracts usually require many levels of review by legal and even governing bodies. Many public agencies require the issuance of a request for proposal (RFP) for new technology. This requires time for the public agency to issue the RFP, the time for a response, and the time for a determination.

All of these challenges must be taken into consideration when evaluating the decision to upgrade technology. Many agencies invested heavily in mainframe technology more than a decade ago to power their operations, and it has proven extremely costly to keep that technology up to date. It is possible to build services on top of these older mainframes, but it can be very expensive and time consuming. In light of all the "sunk costs" public agencies have put into their current information architecture, the decision to upgrade to a new technology – which represents significant implementation risk in addition to the cost of abandoning existing infrastructure – is not a simple matter.

SHIFTING USER PREFERENCES

Tolbert, Mossberger, and McNeal (2008) defined e-Government as "the delivery of [government] information and services via the Internet or other digital means…e-Government is now one of the fastest-growing activities online" (p. 549). It is striking how quickly citizen preferences have changed. In a matter of years the way citizens want to interact with their government has shifted from in-person and over

the telephone to online connectivity. The Pew Center for Internet and Society (2010) recently completed a study called *Government online: The internet gives citizens new paths to government services and information*, which reported the following:

- "48% of internet users have looked for information about a public policy or issue online with their local, state or federal government" (p. 2).
- "Most online government users engage in a range of government website transactions…69% of these online government users do at least three different activities" (p. 17).

For many years the conventional wisdom was that citizens wanted to engage with their government agencies in person or by voice, to interact on a human level. The thought was that such exchanges would foster trust and connection by humanizing public employees, breaking the veneer of the aloof and disconnected government agency. However, much like the banking industry, which faced similar skepticism with the roll out of ATMs in the 1980s, citizens now value efficiency over human engagement, and user preferences have shifted to online channels for that reason. Tessler (2010) reported, "…the Pew Internet & American Life Project found that 82 percent of Internet users -- or 61 percent of American adults -- had looked up information or completed a transaction on a government Web site over the previous year" (para. 2).

The government of British Columbia (the province sometimes referred to as the "Silicon Valley of Canada") has been one of the most innovative adopters of information technology (IT) in public service. Their Ministry of Justice recently created an online Civil Resolutions Tribunal to move low value civil cases into online processes, making them one of the first government agencies in North America to do make an online process mandatory (British Columbia, 2012). Recently they conducted a series of surveys of their citizens asking how they would most prefer to access public services, and the results were quite striking. A selection of the survey results are presented in Figures 1-3 (2010 B.C. Citizen Satisfaction with Provincial Government Services report, 2011).

Figure 1 analyzes the channels citizens are using for their first engagement with a public agency, and which they use as their principal channel. This chart makes clear that the internet is now the dominant first channel for most citizens looking to engage with a public agency. When a citizen has a question, issue, or concern, the majority of the time their first step is to go to the internet to try to find the answer. Almost twice as many respondents used the internet as their first channel compared to the second channel, which was in-person at a service counter. For subsequent communications, other channels made a stronger showing – in particular, in-person at service counters and the telephone. But still, the internet is the clear preference

in subsequent engagements as well. Also, it should be noted, the "internet" in this context means online interactive services or web sites, because email-only interaction was also called out separately in the survey.

Figure 2 focuses on direct contacts into public services, meaning interaction with agency staff as opposed to information-gathering from static web pages. For first human contact, the majority of respondents did indicate that they still make use of in-person channels. Maybe if a citizen cannot answer their questions from the information on the agency website, or if they are unsure what processes are available or what their rights may be, an in-person interaction can help to orient them to the appropriate process and set them on the right path. Mail and the internet are in second and third places when it comes to first contact, probably because responses can take longer and are usually more generic. For the second contact, the telephone and internet emerge as the clear preference, probably because the benefit gleaned from the first communication in terms of process orientation and expectation setting has already been achieved. By the third contact, and for all future contacts, the internet is the clear preference. At this stage, orientation is no longer necessary, and efficiency and convenience are prized above all.

Figure 3 may be the most surprising of the three charts. It shows satisfaction rates for the various communications channels, paired with preference metrics. This chart makes clear that the internet does not drive the highest satisfaction of all the available channels. In fact, it places fourth. Email, postal mail, and in-person interaction at service counters all rank higher in terms of citizen satisfaction, with

Figure 1. Frequency of use of interaction types as first/principal channels in British Columbia (British Columbia, 2011)
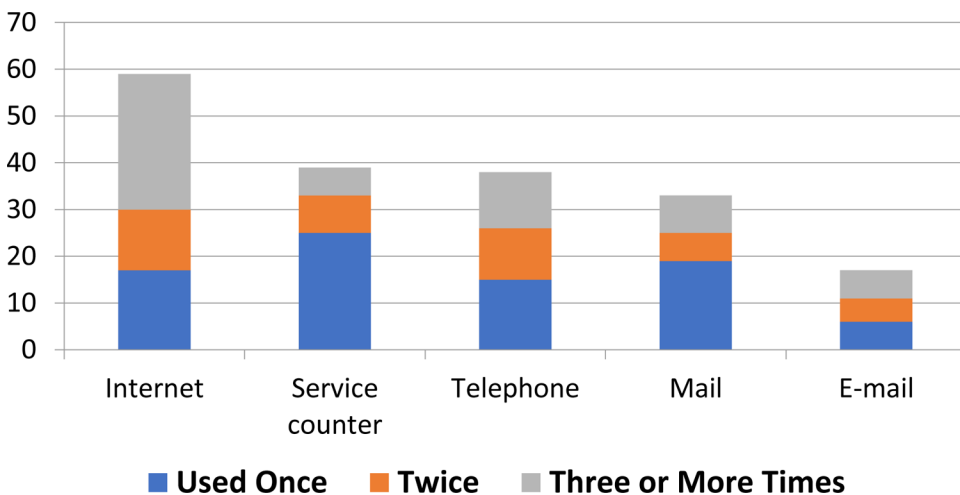
Figure 2. Frequency of use of various public interaction channels in British Columbia (British Columbia, 2011)
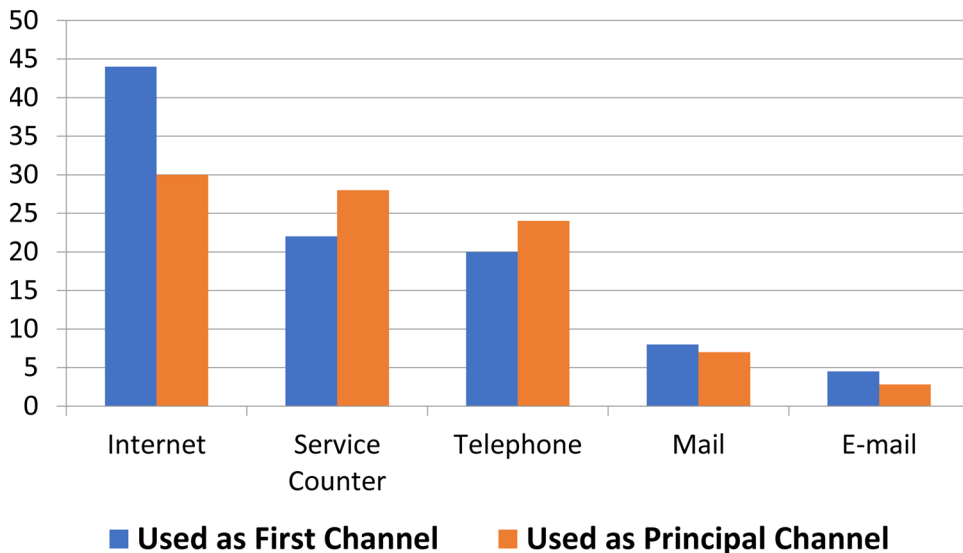
in-person interaction generating the highest satisfaction numbers. This can be seen as a validation for those who have argued that in-person interaction best establishes the connection between citizens and their government, and builds trust. However, even in light of those satisfaction numbers, the internet is still the preferred channel for citizen interaction with public services.

Yes, our satisfaction may be higher when we can interact with a friendly, smiling person at a service desk and have my questions answered quickly and effectively. But we still prefer being able to log into a website at midnight in our pajamas because it saves us having to take time off work to drive down to the government office. For us, and many others like us, the efficiency benefit outweighs the satisfaction improvement. Still, the lower satisfaction rates associated with the internet channel may have more to do with the current state and effectiveness of the properties of the internet channel, and may very well be indicative of a calling for changes to this channel. In its "Introduction to Online Service Delivery," British Columbia (2010 B.C. Citizen Satisfaction with Provincial Government Services report, 2011) reported, "Governments around the world are reinventing the way they provide information and services to their citizens. As demand for online services increases, our web properties must evolve to effectively respond to the needs of citizens" (p. 5).

There is good reason to believe that these results from British Columbia are representative of the broader preferences across North America as a whole. In the years since these data were gathered, these trends have only intensified. Based on

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Figure 3. Frequency of use of various public interaction channels in British Columbia (British Columbia, 2011)
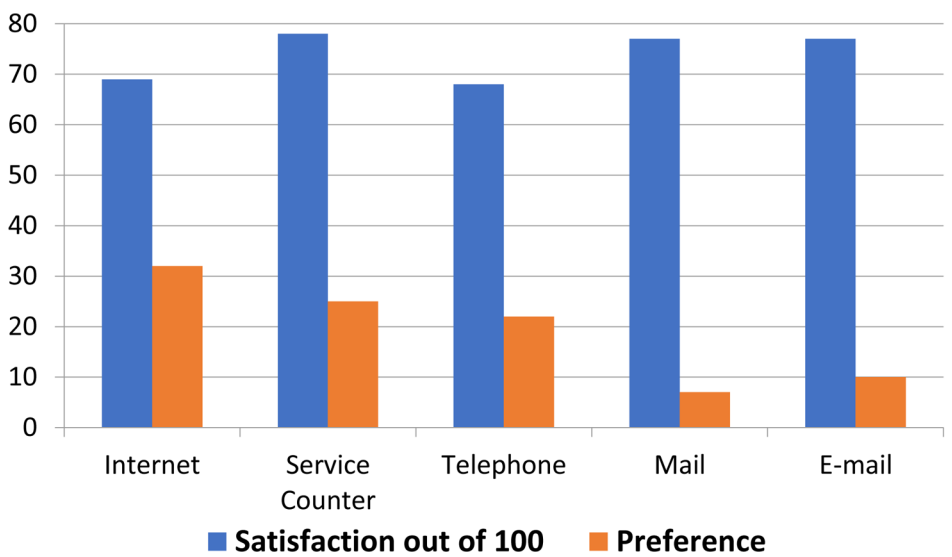
our experience working across the U.S. and Canada, we believe that similar surveys would likely generate similar results in most areas in the United States.

INTRODUCING "THE CLOUD" TO PUBLIC AGENCIES

Any interaction with public media about technology these days will likely include some reference to "the cloud." While understanding of that term may be slightly different across various sectors of society, the broader concept has begun to take root. And it is true that in Silicon Valley, the preferred model for modern internet service delivery is cloud-based.

Most of us use some cloud-based service every day. Many of the most popular email service providers are cloud based, from Hotmail to AOL to Yahoo to Gmail. Facebook and LinkedIn are cloud based. eBay and Amazon are cloud based. (In fact, Amazon has extended their cloud architecture for others to use, and now companies from Netflix to Dropbox are partially hosted in the Amazon Cloud.) Some leading companies, such as Salesforce, have long promoted the fact that they live entirely in the cloud. Even venerable offline software suites, like Microsoft Office and Adobe Photoshop, have migrated their services to the cloud.

But what exactly is the cloud? At the simplest level, the cloud is where your data and your services are located if they aren't on a hard drive on your local computer.

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Instead, they live (or are "hosted") on a server somewhere out in "the cloud," waiting for you to access them through the internet. All you need is a simple display program (like a web browser or app) on your laptop or mobile phone to connect through the network to your data and services, which may in fact be residing in Colorado or Calgary or Chennai –or possibly residing in all of those places at once, because your information can be mirrored across multiple locations so you can get at it quickly no matter where you may be.

Traditionally public agencies have issued complex RFPs to select a software developer who can build a massive software suite to run all of the internal operations of the agency. Figure 4 represents that traditional software development model. In this architecture, all of the software is installed and maintained locally. There is a clear barrier between the software and the internet, and no external users are allowed into the local software. Data and functionality are maintained in local hardware configurations.

Building software in the cloud works quite differently. Software and hardware are accessed via the internet, meaning computers are just the end terminals required to display the information coming in over the web. Functionality is delivered from a remote server, so it doesn't matter if the end user is on an Apple laptop or a Windows desktop or a Linux tablet or an Android phone. All that is required is that the end

Figure 4. The usual design of a locally hosted, on-site software platform
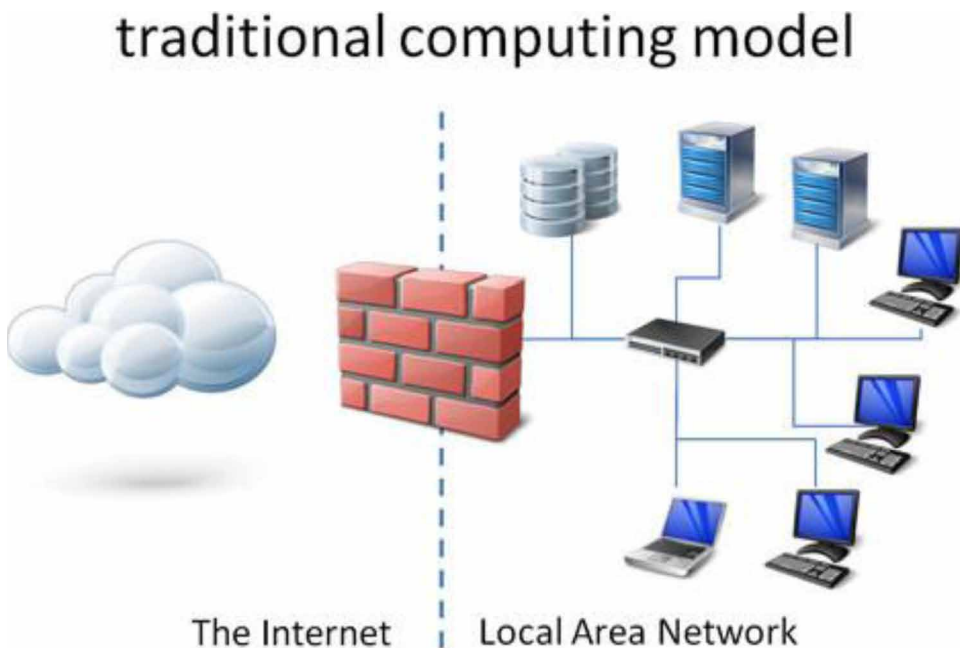
user can see the web page generated by the remote application. This design is often referred to as "Software as a Service" or a "SaaS" model, because instead of being paid to design and deliver a large software platform to run locally, the software designer takes on the continuing responsibility to maintain and upgrade the system running in the cloud. Figure 5 represents the SaaS/cloud development model. This creates an ongoing service relationship and partnership with the client, instead of delivering a software program to the required specifications and then handing administrative responsibilities to the agency.

The benefits of SaaS/cloud based designs are clear. First, they are often much less expensive than traditional development. Because the service provider hosts all the software code on external servers, they can easily re-use components to build new processes much more quickly. This also reduces time to launch, so systems that in the past took years to build can be up and running in months. Because the software is maintained centrally, it can be patched and upgraded constantly, which can be done in such a fashion that is almost seamless to the end users. Software is much less buggy because all of the services are based on the same core platform, instead of dozens or hundreds of different installations all hosted locally with slight variations in each implementation. When a new feature is added to the platform,

Figure 5. The design of a cloud-based, software-as-a-Service (SaaS) platform
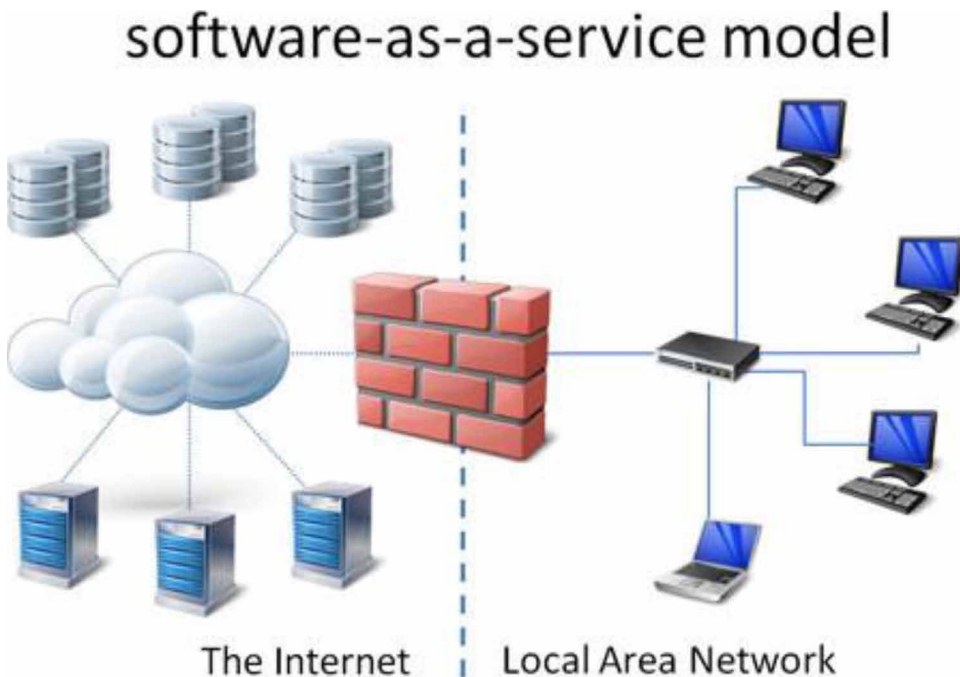
all customers get it quickly. Finally, because there is redundancy across multiple servers, the system is highly stable and highly available, because if one server goes down or becomes inaccessible, others immediately step in to instantly compensate.

All that said, even though cloud based architecture is becoming the dominant standard in Silicon Valley, these types of designs can still generate concerns for many public agencies. One oft-stated worry involves having sensitive data hosted outside of the agency's IT department. The fear is that cloud based systems may be more vulnerable to hackers because the data is not closely controlled by internal IT staff. However, recent studies have shown that data hosted in the cloud is even more secure than locally hosted data. As industry expert Derek Brink (2010) recently explained:

Drawing on the findings from multiple benchmark studies on best practices in content security and security software as a service, Aberdeen's analysis shows that users of cloud-based web security had substantially better results than users of on-premise web security implementations in the critical areas of security, compliance, reliability and cost. Compared to companies using on premise web security solutions, users of cloud-based web security solutions had 58% fewer malware incidents over the last 12 months, 93% fewer audit deficiencies, 45% less security-related downtime, and 45% fewer incidents of data loss or data exposure (para. 1).

In fact, a primary benefit to public agencies of cloud-based SaaS architectures is that information intended to be accessible to outside users can be hosted offsite, while sensitive internal information may continue to reside only on servers inside the agency's four walls. Hosting services for outside users on hardware inside the agency may increase the risk of data vulnerability, while hosting services for citizens outside the agency can help to protect internal systems from unauthorized data access. Then the inside and outside systems can communicate securely to keep information up to date.

It can be enormously expensive and complicated to build software internally, hire technology experts to maintain the software, and to keep it up and running at the standard now expected by online users (usually five nines of uptime, or 99.999% availability). Even if a system works flawlessly at launch, it can be a challenge to keep it constantly patched, running smoothly, and fully redundant. The reason why cloud-based models and SaaS implementations are becoming more popular is because all of these tasks can be handled by external organizations that specialize in handling them for multiple clients, freeing resources within agencies to focus on tasks more relevant to the agency's core responsibilities.

All of this talk about technology at a holistic level can get a little abstract, so let's now focus our discussion on two case studies within public agencies that are

going through this transition at this very moment: property tax assessment appeals and court civil cases.

HOW PROPERTY TAX ASSESSMENT APPEALS WORK

Homeowners in the U.S. are all familiar with the process of receiving a property tax bill every year, based on the assessed value of their house. Taxes are levied against almost all properties across America, whether commercial, industrial, or residential. Some properties are classified as exempt from taxation based on various state specific factors; these exemptions are generally granted by the taxation agency and could be the subject of disagreement or appeal. Taxation of properties can extend beyond real estate and buildings to personal property.

The International Association of Assessing Officers (IAAO) (2010) explains property tax and its role in funding local government:

The property tax provides for balance and equity in the total tax system by taxing the one element of ability to pay overlooked by other state and local taxes. The property tax allocates the cost of government according to ability to pay as measured by property wealth. Among the many types of taxes levied, the property tax is the only tax used in every state of the United States, the District of Columbia, and every Canadian province. In fact, the property tax remains the most important source of own-source and total revenue for local governments in the United States (p. 6).

The formula to compute property tax varies from county to county, but in most cases the local property tax assessor estimates the market value of your house and sends a tax bill that is a percentage of that value. Some counties have laws that cap the rate of growth of property taxes, so even if your house increases 10% in value in one year, for example, your property taxes can only go up 1% or 2% a year. But property taxes are not only for residential properties. Every commercial property also pays taxes, so for large buildings (e.g. hotels, office buildings) the tax bill can be quite large.

Property Tax Assessors make use of advanced software, called CAMA (Computer Assisted Mass Appraisal) software, to help calculate and to track the values of every parcel in their district and send out all the property tax bills. This software uses a combination of human powered and mathematical algorithms to estimate the accurate property tax values at any given time. This is difficult to do well, because valuations are constantly in flux as a result of economic changes and factors like mortgage rates and overall market supply and demand. And getting out all the tax

bills on time can be a huge challenge, particularly in counties with hundreds of thousands or millions of parcels within their jurisdiction.

There are dozens of major suppliers for CAMA platforms, from market leaders like Tyler Technologies and Thomson-Reuters/Manatron, to smaller regional systems supported by local software developers. Large counties can have very large property tax bases, which justify significant expenditure on the part of the counties to purchase advanced software. But the complexity of installing a large CAMA system in very large counties can be overwhelming. Once a county commits to using a CAMA system the transition can take years to fully complete. And once a county is migrated onto a CAMA system, it is quite committed to continue using that system, because by law the property tax bills must come out on a certain date every year, come hell or high water. The risk of changing CAMA platforms is therefore high.

While these CAMA systems are quite advanced in the areas of managing property tax valuations and sending out bills, one area they have traditionally not focused on is the area of appeals. By law, every taxpayer has the right to appeal their property tax bill if they feel the amount is inaccurate. The IAAO (2013) described the assessment appeals process as

…an important component in the assessment process. Appeals provide an opportunity for property owners to meet with the assessor to inquire about their assessments and to learn about assessment and appeal procedures. In the case of disputes about assessments, an appeal system should provide opportunities for both informal meetings with the assessor and formal hearings before independent bodies to resolve disputed issues and thus assure the public that assessments are correct, fair, and equitable. Key to any assessment appeal system is an open and transparent process that relies on a clearly written set of procedures and provides due process (p. 5).

Taxpayers are quite sensitive to their assessed values, and are quick to file an appeal if they feel the valuation is too high or if they see fluctuations in their valuation. Tergesen (2007) reported:

The housing market may have softened, but many homeowners are discovering one place where their property values remain at peak levels: on local property-tax rolls. 'They were valuing our home for way more than it's worth,' says Cara Reeves, who recently saw the assessment on her three- bedroom home in Cincinnati jump from $251,000 to $334,400, pushing her latest property-tax bill up 82%... Because many local governments assign values to properties in their jurisdictions only once every three or more years, many homes still carry assessments from the market's peak, in 2005 and 2006 (para. 1).

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The Assessor often has a defined window when taxpayers are given the right to file a formal appeal of their bill. This window usually begins just after the tax bills are sent out, and closes two or three months later. While the tax bill distribution process is quite automated, this appeals process is usually quite manual. Taxpayers may file their appeal in person, or via the mail, and they may have to fill out a paper form that asks questions about why they feel their assessed value is incorrect. They also may be required to submit evidence bolstering their case that the taxable amount is wrong. In addition, many appeals are filed by agents on behalf of taxpayers, and those agents may be managing hundreds or thousands of appeals at one time. As Tergesen (2007) put it, "Help is available. A mini-industry of consultants, attorneys, and real estate agents has emerged to assist homeowners in preparing appeals" (Do it Yourself section, para. 2). High volume filers have their own needs, different than individual taxpayers filing on their own behalf.

Most assessing jurisdictions follow a very similar appeal pattern. The IAAO (2013) provides a common process framework in its *Standard on Assessment Appeal*:

1. **Assessment Notice:** The assessing jurisdiction notifies the taxpayer of his assessed value: "When an assessment is changed, a notice of assessment that identifies the property, the property owner, the estimated market value, and the assessed value of the property should be mailed to each property owner" (p. 8).
2. **Filing an Appeal:** A filer or his agent fills out required filing forms and provides required evidence directly with the assessing jurisdiction (p. 5).
3. **Informal Review:** The assessing jurisdiction has the first opportunity to review the appeal. According to the IAAO (2013), "The appeal process should begin with an informal consultation between the assessor and the property owner in order to Identify and document errors, Review the equity and uniformity of assessment…Determine what issues (facts) the parties to a valuation dispute can agree on…[and] Identify and clarify the basis for an exemption or assessment limitation claim" (p. 5-6). Oftentimes, a negotiation will occur between the parties and the assessing jurisdiction may offer a value settlement offer. This process may continue until a fair value is reached. If a value cannot be agreed upon, the filer may escalate to a formal review.
4. **Formal Review:** When the dispute cannot be resolved at an informal level, it can be forwarded to a local or regional board "as the first level of formal appeal" (IAAO, 2013, p. 6). This board can be made up of property assessment experts and volunteers within the community whose charge is to maintain fairness in the valuation. The filer usually meets with the board to present its case. The assessing jurisdiction usually acts as the respondent in the matter heard by the board. A filer may have about 15-20 minutes to present its case.

If the board makes a decision that the filer disagrees with, they can generally appeal to a state board.

5. **State Board / Courts:** According to the IAAO (2013), "The state or provincial property tax tribunal should be the final administrative arbiter for individual appeals. However, unresolved legal and appraisal issues may be appealed to the courts. For efficiency, state or provincial property boards may constitute the only level of formal appeal before appeal to the courts" (p. 6).

Because of all these steps, an appeal can take quite a bit of time to move from filing to closure. On average, based on our observations, property tax assessment appeals processes in the United States usually take around 18 months to complete. That means that if a taxpayer gets a bill they think is too high and they immediately file an appeal, they are still required to pay the bill they disagree with that year, and then to pay it again the next year, before a decision is finally rendered. If they win their appeal, the amount is adjusted moving forward, and they receive reimbursements plus interest for the prior two tax cycles they had already paid. But as you might imagine, this long process can generate frustration on the part of the taxpayers.

Our 18-month estimate is an average, so it should be noted that some of these cases go much longer than a year and a half. Much of the time required to resolve these cases is due to administrative tasks. By law, many assessors are required to process an appeal even if the information submitted is very sparse – say, a one line note written on a postcard that says "I want to appeal my property tax bill!" Once an appeal is filed, there is a lot of back and forth between the Assessor and taxpayer, getting the file complete, answering certain required questions, and ensuring all required documents are filed. There may be visual inspection of the property required as part of the appeals process (though sometimes that visual inspection can happen via satellite imagery or street-view image capture, which is much more efficient). If the case is escalated to an evaluative process at the state level, all of the information captured by the Assessor's Office must be transmitted to the new office, where it is reviewed again, which may result in more evidentiary obligations.

Most of these appeals are worked on a first-come, first served basis, so cases that may be relatively simple to work out through mutual agreement have to wait for other cases ahead of them in the queue to be resolved before they get addressed. Also, an appeal may be efficiently progressing through the process, but there are few automatic updates generated by the system to keep the taxpayer informed as to case status. That means that whenever a taxpayer wants an update on the status of their case, they have to call into the Assessor's Office and speak to an employee, who in turn has to check in the internal systems to find out the latest information. That can generate even more delays, as employees in the Assessor's Office have to take time out of their schedule to respond to status queries from taxpayers.

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Case Study #1: Filing an Appeal – Paper Process

In one of thousands of Property Assessor offices across the United States, hundreds of taxpayers crowd and line the halls of city hall—waiting for hours to have their property assessment appeal filed and heard. Sheila, a taxpayer, makes her way up to the appeal counter after waiting 45 minutes to find out that she does not have the documentation required to properly file an appeal. She'll have to return home and come back another day, before the 20-day filing deadline is over. Sheila doesn't know how she'll be able to return - requiring absence from one of her two full-time jobs and requiring a 2-hour bus ride into the center of town. She may just have to bag the appeal and pay the taxes, even though she is almost sure her property has been overvalued.

BRINGING ASSESSMENT APPEALS INTO THE CLOUD

In the past two years, several counties have begun creating interactive, online interfaces for managing their property tax assessment appeals. These systems offer compelling benefits both to external users (taxpayers and agents) as well as internal agency staff. Rabinovich-Einy and Katsh (2012) stated the following:

The contemporary ODR [online dispute resolution] landscape can be divided into two principal domains—tools and systems. The first area has involved the development of specific dispute resolution applications that can be used to resolve both online and offline disputes...ODR systems include ODR tools...used in a coordinated way within a closed setting by a limited (but potentially very large) number of users who are engaged in ongoing interactions with other users and may experience similar types of problems over time (p. 40-42).

Presently, some assessing jurisdictions employ a selection of *tools* (e.g., a web filing form, barcoded documents, a status checking tool), but the vast majority lack any true ODR system.

In an effective ODR system, the filing process for an assessment appeal resides online. Taxpayers can log in any time to fill out the dynamic, step-by-step form, which collects all relevant information about the appeal. The form can also serve to educate the taxpayer about how their property was valued, and how the tax amount was calculated. For example, the system may automatically share recent sales prices for comparable properties close by the taxpayer's house. This online diagnosis and education process often provides the exact information the taxpayer was looking for, meaning they may voluntarily decide not to proceed with their appeal, saving

time and resources on both sides. If they do proceed with the filing, the system prompts them to provide all the relevant materials automatically, meaning no agency staff member has to pursue open case files to request additional information. The taxpayer can save their submission and return to it at a later date, when they have all the required documentation ready. Once submitted, the appeal is electronically signed and time stamped, so both the Assessor and the filer have confirmation of submission. The submitted information can also be downloaded as a printable PDF file that looks identical to the paper form that the filer would have submitted if they had gone down to the Assessor's Office in person to file the appeal.

Once the filing is complete, the appeal automatically appears in an advanced case management system. The taxpayer may only have one appeal in the system, so their interface is very simple and uncluttered, showing the most updated information on their one case. An agent filing on behalf of many taxpayers may require an interface with more complexity, enabling case sorting and batch actions. The Assessor's Office may have thousands or tens of thousands of cases at one time, so they require very advanced tracking and organization tools. The interface must adjust dynamically based on the user role and the case volume. The system may automatically assign appeals to different agency staff based on geography or appeal type, who are then automatically notified of the new filing. Case administrators within the Assessor's Office can also manually route cases to individual agents or adjusters at any time, and update cases statuses.

All of the actions on the case are tracked in a unified workflow, which can be reviewed in detail at any time. Automatic status notifications are sent to the filer every time an action happens on their case, so the taxpayer is always informed about what is going on, without needing to call in to speak to a live person within the Assessor's Office. Every user in the system has their own login credentials, so data access rights can be managed for each individual using the system. No one sees any cases they do not have the access rights to see, which minimizes confusion.

Every appeal has its own virtual "room" that captures all the case details, serves as a document repository, and shows the current state. Both the agency employees and the taxpayer can post messages or questions within their virtual room, which enables an ongoing, asynchronous conversation between the participants that does not require any meeting scheduling or coordination. Agency staff can also communicate with each other about the case in a private discussion thread that is not viewable by the taxpayer or agent who filed the case, which can help with internal knowledge management.

The system is not only intended for cases filed online, however. If a taxpayer submits the previously described postcard that just says, "I think my tax bill is too high," the Assessor's Office can manually enter the case into the online system and work it in the same manner as a case that was filed online. Even if the taxpayer has

not provided a phone number or an email address, the system will generate all of the appropriate forms and letters as printable PDFs, on the Assessor's Office letterhead, so the document can just be printed and mailed back to the filer.

The process moves much more quickly because there are no delays associated with information sharing. If a document is uploaded, all of the participants in the room are immediately notified, and they can download it instantly with a single click. If there is a submission deadline, the platform can automatically notify the taxpayer a week in advance, a day in advance, and even an hour before the deadline approaches, all without requiring any attention from employees within the Assessor's Office. Once a decision is rendered, the taxpayer is informed immediately. The efficiency of the process drives much higher user satisfaction, both inside and outside the Assessor's Office.

If a case is escalated from the Assessor's Office to the statewide Board of Appeal or Board of Equalization, there is no need to go through an additional filing process. The participants from the next level of escalation can just be added into the online room as new users, and the state of the case can be updated appropriately so that the interface is appropriate to the hearing/evaluation process. There is no need to move a paper file across the state or re-upload documents into a new system. Once the statewide office is online with this interactive, technology-based process, any county in the state can escalate a case with the click of a button. This feature can eliminate months of delays in the current offline process, which again improves internal and external user satisfaction.

The system can also easily be integrated into other platforms, such as the CAMA systems used by Assessors or case management systems utilized by agents filing on behalf of others. Data is available via web interfaces for individual taxpayers, but it is also accessible through application programming interfaces (APIs), which allow software platforms to exchange data automatically over the internet. Once a case is initiated, the cloud-based system extracts the relevant details about the property from the Assessor's CAMA system and includes it in the appeal. Once a decision is rendered, the system packages up the outcome and delivers it back to the CAMA system so that the records are fully updated.

Another benefit of the system is reporting. Performance of the Assessor's Office in handling appeals is often very difficult to monitor when the appeals are handled offline. Once an online platform is put in place, all statistics on the performance of the office are reviewable in real time. Case administrators can monitor how many appeals are being filed on a weekly, daily, or hourly basis. Average times to resolution can be calculated instantly, and performance can even be tracked on an agent-by-agent basis as well. Also, many Assessors Offices are subject to transparency laws that require case data be publicly available. These online systems can share statistics

with the public in real time, and provide appropriately summarized outcome data to meet public reporting obligations.

HOW COURT CIVIL CASES WORK

When many citizens think of the courts, they first imagine the criminal system. For generations dramatic television shows and movies have portrayed dramatic court scenes of victims and perpetrators facing justice for their crimes. But in fact, most cases resolved in the courts are civil cases. As FindLaw explains the difference, "Civil cases usually involve private disputes between persons or organizations. Criminal cases involve an action that is considered to be harmful to society as a whole (hence, these are considered offenses against the 'state' or the jurisdiction of the prosecution)." There are some areas that overlap (e.g. traffic, where there are some civil infractions and some criminal infractions) but most of the time civil cases involve a dispute between two private citizens over an agreement and there is no harm to wider society.

Civil cases begin when an individual (called the complainant or plaintiff) files a case claiming that another individual (called the respondent or defendant) has not met their legal obligation in an agreement between the two parties. The complainant files the case in order to compel the respondent to meet their obligation or provide compensation. An example would be a contractor paid to add a room onto a house, but who took the money without finishing the work. In situations like this, there is a dispute between two private parties (they may be individuals or corporations) where one of the parties is asking the court to intervene to settle the dispute.

Traditionally complainants have filed their cases with the court in person, but increasingly courts are utilizing eFiling systems to enable parties to file their cases electronically. Once the filing is received from the complainant, the defendant is contacted and asked to file their response. Once both filings are received, the court will assign a hearing date, usually a few months out from the original filing. The parties will convene at the hearing date, make their case to the judge, and the judge will issue a decision (sometimes called an order) indicating the outcome the judge determines to be fair in the matter at hand. If the parties do not comply with the order then there may need to be additional steps taken in order to enforce the outcome (for example, in some debt cases the debtor may have their future wages docked by their employer to pay a debt the court has determined they must repay).

The civil court system has worked for years in this manner, but lately the system has come under increasing strain. A few of the factors leading to this increased pressure include:

Budget Cuts: State legislatures around the county have been steadily cutting court budgets, which means that administrative officials within the courts have eliminated staff, which has reduced efficiency. Some cases now have to wait for months and even years before they come in front of a judge. These delays create frustration amongst parties because the dispute remains unresolved for long periods of time, perhaps increasing harms and escalating anger between the involved individuals.

Self-Represented Litigants: Many parties cannot afford to pay lawyers to represent then in the courts, so they elect to self-represent. Sometimes referred to as *Pro Se* litigants, these parties are not educated in the law, and they usually get much worse outcomes than parties who do pay to have lawyers help them pursue their cases. The law can be procedurally complex, often with obligations that are not obvious to non-experienced participants. Legal language is also confusing for individuals who have not received legal training. *Pro Se* litigants will sometimes show up at the courthouse or in legal libraries asking for advice about what steps they should take next, and court administrators and librarians are reluctant to help out because they do not want to violate professional rules that forbid them from providing legal advice.

Changing Citizen Expectations: Much like in the area of Property Tax Appeals, Court users have the experience of using interactive technology in other areas of their lives, and they bring those expectations to the courts. When court processes require parties to file documents or show up in person at the courthouse, or to mail or fax forms or evidence, the process seems inefficient and out of date. Younger individuals in particular are extremely reluctant to participate in a process that only takes place offline and face-to-face. This creates a high barrier to entry that many potential litigants are unwilling to climb over, which encourages them to pursue redress through other channels.

Case Study #2: Filing a Small Claims Case – Paper Process

In one of thousands of county court houses across the United States, litigants sit in court rooms waiting for hours to have their case heard by a judge or magistrate. Ronald, a small businessperson, claims that he has not been paid for his work cleaning the carpets at a local record store, but he does not have a signed agreement indicating that the record store owner agreed to Ronald's price estimate. He'll have to return to his office to find the paper work and come back another day. Ronald doesn't know if he'll be able to return – taking a day off work to come the courthouse has already cost him money he could have been making working for other customers. He may just have to give in and lose the money, even though he did clean the carpets and agreed to the pricing with the record store owner with a handshake.

BRINGING CIVIL CASES INTO THE CLOUD

Interactive online technology can go a long way toward improving access to the courts, streamlining resolution and improving visibility throughout the resolution process. Many courts have started to deploy ODR (online dispute resolution) systems for civil cases, enabling the parties to work out a resolution via mutual acceptance before the case comes before a judge in a formal hearing.

In a common design for these systems, the complainant still eFiles the case into the court, and the respondent provides their answers to the issues raised. But as soon as that process is complete, the court's Case Management system triggers the creation of an online collaborative workspace (sometimes called a *Resolution Room*) customized for the specific dispute types in question. The complainant then receives an invitation over email or text message to log into the Resolution Room to try to resolve the matter at hand. Once the complainant clicks the link in the email they are taken through a "diagnosis wizard" to get details about the case and some possible forms for resolution. This wizard asks different questions based on the type of dispute that was reported:

Small Claims Dispute: If the case involves a low value monetary disagreement (for instance, a debt or consumer protection matter) the wizard collects the details of the dispute (including supporting evidence) and then asks how much money the complainant would like to receive from the respondent in order to fully close the case.

Landlord Tenant Dispute: If the case is between a landlord and a tenant, details are collected about the original lease agreement, outstanding payments, and security deposits (as well as supporting evidence). The platform can then help to determine whether the tenant will stay in the property in question or whether the landlord-tenant relationship will end with some level of monetary compensation.

Family Dispute: If the case involves a divorce or separation, the wizard can walk the parties through the creation of a co-parenting plan that covers areas like custody, vacation exchanges, child support, and visitation. The co-parents can select their preferred arrangements from pre-configured menus and then negotiate and refine options before jointly committing to the parenting plan.

If the parties achieve agreement on all the areas in question, the ODR system can automatically draft the full text of an agreement and eFile it back into the court case, where it can be certified by the court and the hearing can be cancelled. But even if the parties only achieve a partial agreement the platform can still memorialize the parts they have agreed on, which can make the in-person hearing much more efficient and effective.

ODR systems such as the ones described above have achieved resolutions in more than 75% of incoming civil cases. Also, 85% of resolutions through ODR are achieved during times when the court is not open for business (i.e. late on weekdays

or over the weekends). Parties to these cases are satisfied because they get resolutions more quickly, they don't have to take time off of work, and they get their outcomes formally certified by the court. Judges and court administrators like these systems because they enable earlier resolutions, reduce the time required in each case to reach satisfactory outcomes, and move all the court Key Performance Indicators (KPIs) in the right direction: faster case closures, lower cost-per-resolution, higher staff efficiency, and less wasted time.

CHANGING THE RELATIONSHIP BETWEEN GOVERNMENT AND CITIZENS

The initial compelling rationale for investing in an online case management and resolution system is usually efficiency. Public officials are always looking for ways to make their organizations run more effectively and at lower cost, and these types of systems clearly deliver on those two objectives. But over the longer term, the real impact of these systems lies in fundamentally changing the relationship between citizens and the government. This relationship change can come through empowering individuals with technology tools.

The first type of empowerment is access to information. Right now, there is a very large information asymmetry between government officials and citizens. Given their druthers, most public officials would love for the public to be more informed about how government (i.e. Assessors Offices and Civil Courts) operates. But citizens are too busy to educate themselves about the nuances of their government operations. However, a well-designed, interactive online portal can go a long way to educating the public about exactly how these systems work. Information that may currently be available only inside an agency (such as comparable property valuations, or resolution rates for landlord-tenant disputes) can suddenly be shared in such a manner that individuals can quickly make sense of it. And instead of having to pay for one-by-one education via phone (which usually only happens when a citizen is upset enough to call in) a public official can provide information earlier in the process, when an individual is just trying to learn more and is still shaping their expectations. This kind of early issue diagnosis and resolution is more satisfying for the individual, and much more efficient for agency staff.

The second type of empowerment is access. It is true that any citizen has the legal right to file an appeal or a small claims case. But if filing requires a drive downtown to a government office, for many people, the process stops right there. Maybe it's too far to drive, or maybe their ability to make the trip is impaired in some way due to physical challenges. Maybe they can't spare the time to get down to the office. Maybe they feel they will need professional advice to effectively

proceed, and they are worried they won't be able to afford it. Or maybe the length of the process is daunting, and they aren't willing to sign up for a journey that can take months or years.

Some cynics suggest that these impediments to filing are intentional on the part of government officials, who are providing an onerous process in order to discourage people from getting access to redress. In our experience, that is completely untrue. Assessors and judges are public servants, and as such, they want any citizen who has an issue to be able to file a case and get a timely, fair resolution. In fact, many in government are elected officials, so they have a huge incentive to delight their taxpayers so they can keep their job. Government employees are often hamstrung between a longer, administratively complex process that meets all the procedural requirements laid out in legislation, and the frustrations of citizens who want a more streamlined, accessible process. They would gladly opt for a new process that would deliver a streamlined process that met all the required process steps.

A third area of empowerment is visibility. Filing an case currently can feel like putting a note in a bottle and tossing it into the sea. Filers can feel anxious when they have no idea of what's going on. And even when a resolution is finally achieved, the individual may not have any idea as to whether the outcome is in line with outcomes offered to other taxpayers. Managers within government are excited about the better reporting and data visibility that can come from online systems, because it gives them real time intelligence on the effectiveness and efficiency of their operation. But citizens can also benefit from this data visibility, because it enables them to see inside the black box, which demystifies the process and makes them aware of exactly what is going on and who they are working with. It can also contextualize their experience by offering information on the experience of other citizens who have gone through the same process. This transparency can build trust and work to ensure fairer outcomes across the board moving forward.

MONITORING AND ASSESSING EFFECTIVENESS

Once online systems like this are launched, determining effectiveness on an ongoing basis is essential to realizing the system's full potential. These are learning systems, so continuous improvement is required to maximize the benefits. As problems or points of confusion are identified, systems can be adapted to proactively address them, which generates even more benefits. It is almost impossible to deliver an optimized process flow "out of the box" without some adjustments and tweaks over time. Table 1 lists some objectives of public officials in launching a cloud based appeals management system, and the questions that can determine how successful the new system is in achieving the stated goal.

Online Resolution and Citizen Empowerment

Table 1. Measuring the success of online case management systems

Goal	Example Questions
1. Improve public relations.	A. What was the public response to the implementation of the ODR system? B. What was the tenor of the media coverage? C. How did communications with citizens about appeals change once the system came live?
2. Reduce costs associated with appeals.	A. Were costs reduced? Which costs? B. Was there a reduction in required support staff? C. Were costs reduced for filing agents or taxpayers?
3. Educate taxpayers about the appeals process so that there can be a reduction in appeals that are filed due to lack of information and to increase the quality of appeals that are filed.	A. Was the quality of resolutions improved (more complete, better data?) B. Was the number of filed cases reduced? C. How many filers began the process, but did not proceed once their issue was diagnosed online?
4. Improve communication channels between the assessing jurisdiction and the filers.	A. Did staff feel like they could effectively communicate with taxpayers? B. Did taxpayers report feeling like they had better access to the assessing jurisdiction? C. Were taxpayers more informed about how their tax bill was calculated?
5. Decrease paperwork and the associated inefficiencies associated with having to move paperwork from staff to staff, department to department, or organization to organization.	A. Was the amount of paper decreased associated with processing appeals? By how much? B. How much time savings was achieved through reductions in paperwork? (Savings per case can be multiplied against total cases to determine total time saved.)
6. Utilize technology to discover dispute patterns—to help prevent and/or more effectively address disputes.	A. Were any patterns discovered? What insights did those patterns provide into appeals cycles? B. Can any of these patterns be implemented in code to auto-decide or score cases that match a particular pattern?

Once a system is launched, ongoing feedback surveys can determine changes in citizen satisfaction with the new service. Industry standard satisfaction metrics like Net Promoter Score (NPS) can quickly gauge improvements, sorting respondents into "promoters," "passives," and "detractors" with just a single question: "how likely would you be to recommend this process to family or friends? (1-10)" (The Net Promoter Community, n.d., para. 2). These data can be collected on an ongoing basis, with results calculated in real time, to provide immediate feedback on process changes and improvements. Other assessment tools such as Curhan, Elfenbein, and Zu's *Subjective Value Inventory* can determine citizen satisfaction with the negotiation process between the citizen and agency (Subjective Value Inventory, n.d.).

Case Study #3: Filing an Appeal – Online Process

Sheila, a taxpayer, makes her way to her computer system to file an appeal on her property taxes. She does this after she gets off of her shift at 8 PM. The government offices have been closed for hours and the bus system isn't running this late anyway. She knows that her house has been valued too high, but doesn't really know what documents she needs to provide to make a strong appeal. She clicks on the "Appeal Now" button and realizes that all of the information she needs is provided to her through the problem diagnosis wizard. She just needs to scan in and provide her independent appraisal and specific details about the houses that have sold in her neighborhood. She uses the electronic filing form to submit all of her information and documents. After properly submitting, she can see the status of her appeal and what the next steps are. She can check the status of her appeal and negotiate with the Assessor's Office via her smart phone if she needs to. A few days later, Sheila and the Assessor's Office exchange messages. The Assessor's Office staff doesn't have to call Sheila while she is at work, only to get her voicemail. They can have a meaningful negotiation through the internet. The Assessor's Office can even issue a value settlement offer based on the information they received from Sheila. After the exchange of messages and the acceptance of a value settlement offer, the dispute is resolved.

BEST PRACTICES FOR PUBLIC AGENCIES

While we have focused particularly on property tax assessment appeals and court civil cases in this analysis, it is not difficult to apply these same observations in other areas of public service and public administration. Obviously any agency that collects taxes [e.g. the Internal Revenue Service (IRS)] or license fees [e.g., the U.S. Forest Service (USFS) or U.S. Department of the Interior (DOI)] can implement a similar system to the one described, reaping similar benefits. But such a system could also be beneficial to any agency that is processing cases at volume, such as information requests [e.g. Freedom of Information Act (FOIA)], insurance claims [e.g. the U.S. Department of Veterans Affairs (VA) or Medicare], eligibility hearings [e.g. U.S. Immigration and Naturalization Service (INS), Social Security], whistleblower complaints [e.g. the U.S. Environmental Protection Agency (EPA)], or civil rights violations [e.g. the U.S. Department of Justice (DOJ)]. We have seen similar systems implemented to collect and resolve complaints of wounded soldiers in substandard housing, or to report copyright violations. The private sector resolves tens of millions of cases per year using systems such as these. In looking at the public sphere, we believe the need is even greater. We can see a time when hundreds of millions, if

not billions, of public cases are resolved via similar techniques, resulting in much greater efficiency and satisfaction on the part of citizens and agencies alike.

We have distilled the following recommendations for public decision makers looking to leverage the power of online, interactive technologies to support their work of their agencies:

1. Make the leap to open, cloud-based architectures in creating more interactive online interfaces for your constituents. The temptation is always to build incrementally, and there will be some inside your organization who claim that such systems can be constructed internally on top of existing mainframes and older platforms. It's true that it is possible, but in our opinion, it is unadvisable. You will not be able to scale your system effectively if it is based upon an older infrastructure, and your users will complain about the rigidity of your system moving forward.

2. Choose a SaaS platform carefully. Some vendors will claim they have the expertise to put together a nimble system, but instead they are really generating custom software code that you will have the obligation to maintain and update moving forward. Find a partner, not a provider. Make sure the provider you select has extensive experience delivering parallel systems to agencies similar to your own. Ensure that pricing creates a strong incentive for the provider to keep you happy over the long term, not to cut and run once the initial system is delivered.

3. Check out references. Don't believe slick marketing material. Try out live systems yourself, and get honest feedback from other agencies who have worked with the platform for some time. Ideally, speak to end users of the system in addition to the contracting agencies. Make sure you ask about uptime, responsiveness, and the frequency of platform updates and new feature releases. In this case, past performance is an accurate indicator of future success.

4. Look for solutions that are being tested in the private sector. Public innovation is understandably slower than private innovation, and because switching costs are higher in the public sector, providers focused exclusively on the public sector feel less pressure to innovate. An ideal provider will be one that understands the needs of public agencies, and has a robust set of public customers, but who is also providing similar services in the private sector, where the competition and rate of change is more robust. Those providers will be more responsive, and offer more features and frequent upgrades, than those exclusive to the public sector.

CONCLUSION

It is an oft-cited fact that the Chinese have the same character for "crisis" and "opportunity." Such a dualism is appropriate in the case of government and interactive technology. A crisis is coming for many agencies, who are being subjected to constant pressure to do more with less. The yardstick for success in the future will not be marginal improvements in past performance, but new standards being achieved by technology-empowered organizations in both the private and public sectors. There is little doubt that the pressure to keep up will be intense, and the change such expectations will put on internal operations will be difficult.

But this disruption also represents an exciting opportunity for leaders looking to take their organizations to new heights and to empower their end users. Technology is going to fundamentally alter the traditional relationship between government and citizens, and if the transition is well managed, it will make that relationship more effective and more trusting. In fact, technology holds the promise of more effective partnering between citizens and government, and a more robust and flexible model for democratic governance. There is no reason to fear the empowerment of citizens through technology, so long as public sector leaders are proactive and visionary about engaging and managing it.

Technology is coming, like it or not. Just as in the private sector, those who learn to understand it and leverage its power will reap great benefits, and those who resist it will pay the price. We believe those organizations who open their doors, move into the cloud, and follow best practices already honed in the private sector will end up on the happy side of that equation.

REFERENCES

Brink, D. (2010). *Web Security in the Cloud: More Secure! Compliant! Less Expensive!* Retrieved from http://www.aberdeen.com/aberdeen-library/6572/RA-web-cloud-security-compliance.aspx

British Columbia. (2011). *Citizen satisfaction with provincial government services, 2010/2011* c*itizen consultation on service delivery*. Data presented by Darin Thomson of the Ministry of Justice, British Columbia, at the 2012 American Bar Association Dispute Resolution Section Conference, Washington, DC.

British Columbia. (2012). *Civil resolution tribunal act.* Retrieved from http://www.leg.bc.ca/39 th4th/3rd_read/gov44-3.htm

British Columbia. (n.d.). *Introduction to online service delivery*. Retrieved from http://www2.gov.bc.ca/assets/gov/topic/D9B6F4A42E7F6EF9641DDB53AF6D8B10/intro_to_osd/introduction_to_online_service_delivery.pdf

FindLaw Writers and Editors. (n.d.). *Civil Cases vs. Criminal Cases: Key Differences*. Retrieved from https://litigation.findlaw.com/filing-a-lawsuit/civil-cases-vs-criminal-cases-key-differences.html

IAAO. (2010). *Standard on property tax policy*. Retrieved from http://docs.iaao.org/media/standards/Standard_on_Property_Tax_Policy.pdf

IAAO. (2013). *Standard on assessment appeal*. Retrieved from http://www.iaao.org/uploads/Assessment_Appeal_2013.pdf

Pew Research Center's Internet & American Life Project. (2010). *Government online: The internet gives citizens new paths to government services and information*. Retrieved from http://www.pewinternet.org/~/media//Files/Reports/2010/PIP_Government_Online_2010_with_topline.pdf

Pew Research Center's Internet & American Life Project. (n.d.). *Trend data (adults)*. Retrieved from http://pewinternet.org/Trend-Data-(Adults)/Whos-Online.aspx

Rabinovich-Einy, O., & Katsh, E. (2012). Lessons from online dispute resolution for dispute systems design. In M. S. Wahab, E. Katsh, & D. Rainey (Eds.), *Online dispute resolution: Theory and practice* (pp. 39–59). The Hague, Netherlands: Eleven International Publishing.

Rainey, D., & Katsh, E. (2012). ODR and government. In M. S. Wahab, E. Katsh, & D. Rainey (Eds.), *Online dispute resolution: Theory and practice* (pp. 237–249). The Hague, Netherlands: Eleven International Publishing.

Tergesen, A. (2007, November 4). How to reduce your property taxes. *Bloomberg BusinessWeek*. Retrieved from http://www.businessweek.com/stories/2007-11-04/how-to-reduce-your-property-taxes

Tessler, J. (2010). *Poll: Americans connecting with government online*. Retrieved from http://www.pewinternet.org/Media-Mentions/2010/AP-Americans-Connecting-With-Government-Online.aspx

The Net Promoter Community. (n.d.). *The net promoter score and system*. Retrieved from http://www.netpromoter.com/why-net-promoter/know/

The Subjective Value Inventory. (n.d.). *What do people value when they negotiate?* Retrieved from http://subjectivevalue.com/

Tolbert, C. J., Mossberger, K., & McNeal, R. (2008). Institutions, policy innovation, and e-government in the American States. *Public Administration Review*, *68*(3), 549–563. doi:10.1111/j.1540-6210.2008.00890.x

ADDITIONAL READING

Abdel, W. M. S., Katsh, M. E., & Rainey, D. (2012). *Online dispute resolution: Theory and practice: a treatise on technology and dispute resolution*. The Hague: Eleven International Pub.

Constantino, C. A., & Merchant, C. S. (2006). *Designing conflict management: a guide to creating productive and healthy organizations*. San Francisco: Jossey-Bass.

Getz, C. (2010). *Evaluation of the Distance Mediation Project: Report on Phase II of the Technology-Assisted Family Mediation Project*. Victoria, BC: British Columbia Mediator Roster Society.

Katsh, E., & Rainey, D. (2011). ODR and Government in a Mobile World. In M. Poblet (Ed.), *Mobile Technologies for Conflict Management: Online Dispute Resolution, Governance, Participation* (p. 85). Springer Press. doi:10.1007/978-94-007-1384-0_7

Katsh, E., & Rifkin, J. (2001). *Online Dispute Resolution: Resolving Conflicts in Cyberspace*. San Francisco: Jossey-Bass.

Rule, C. (2002). *Online dispute resolution for business: B2B, e-commerce, consumer, employment, insurance, and other commercial conflicts*. San Francisco: Jossey-Bass.

Smith, S., & Martinez, J. (2009). Analytic Framework for Dispute Systems Design, An. *Harv. Negot. L. Rev.*, *14*, 31.

KEY TERMS AND DEFINITIONS

Application Programming Interface (API): A mechanism for web-based software platforms to exchange data without requiring manual human per-exchange input or initiation.

Cloud: A concept for technology design where software and data are hosted remotely on servers located somewhere on the public internet, not locally on an individual's home computer.

Online Resolution and Citizen Empowerment

E-Government: The application of information and communications technologies to the tasks and responsibilities of agencies and institutions within the public sector.

Mainframe Technology: A model for technology design popular in the 1970s and 1980s where computing power and data was centralized in a single large platform and accessed remotely.

Online Dispute Resolution: The use of technology to help individuals and organizations find resolutions to their disputes.

Software as a Service (SaaS): A model of design for technology projects wherein platform functionality is hosted remotely and delivered to end users on demand via a web browser.

Sunk Cost: An economic concept describing previously made expenditures that cannot be reversed.

Uptime: The time when a software platform is working fully and is accessible to users.