



Digital Transformation: The Death of Paper in the Digital Age

WHITE PAPER

Content today is created, consumed and stored almost entirely electronically, but public sector organizations continue to put too much effort and thought into how their documents would look when printed. Simply mimicking paper electronically won't meet your citizens' and stakeholders' expectations for how they want to interact with you, transact with you and consume information from you. This article explores how replicating paper inhibits adoption, debunks a common myth, and outlines steps you can take towards your next level of digital transformation.



It has been said many times that digital transformation is a journey, not a destination; the unstoppable march of technological advancement ensures that optimally leveraging electronic tools and opportunities will always be a moving target. But many public sector entities aren't even as far along the path towards what's possible today as they may think they are.

Even as the electronic creation, delivery and consumption of documents has come to dominate over physical forms, organizations continue to put too much emphasis on what the information would look like on paper. All too often, the resulting digital experiences simply mimic their paper-based predecessors.

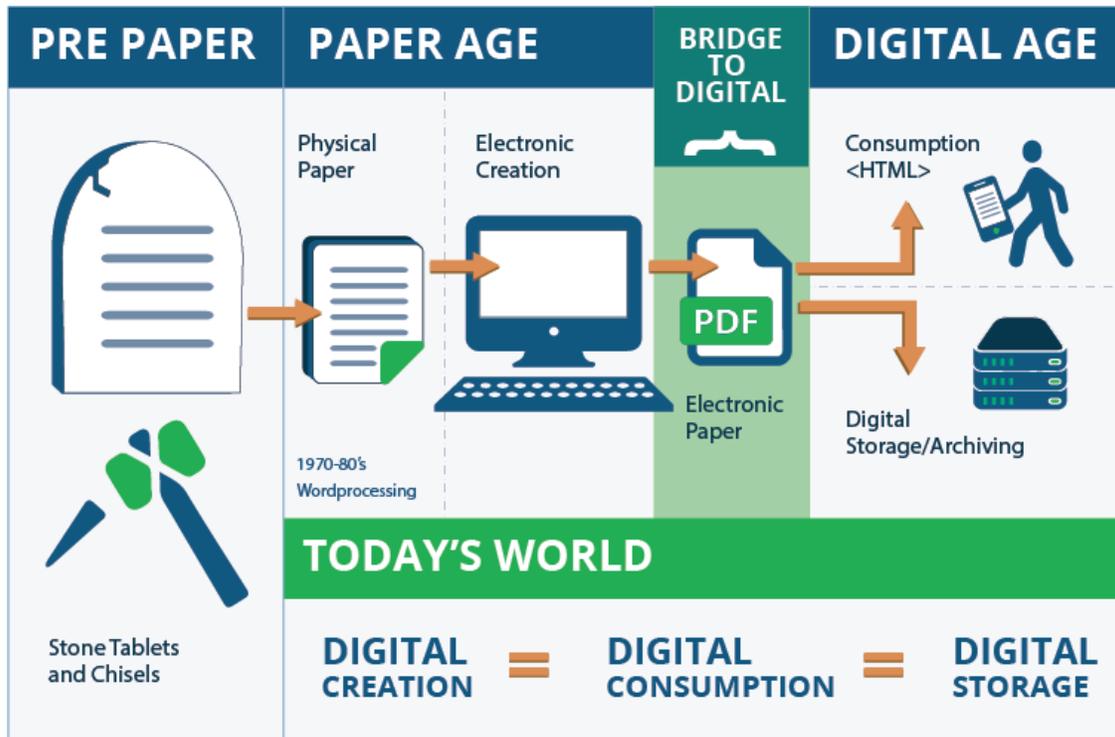
As always, if you're just trying to replicate an old medium in a new one, you aren't taking advantage of the new communication paradigm and benefits that the latter medium can enable. Imagine if television channels simply combined the audio from radio programming with a still image on screen; the rich benefits of communicating information visually would be lost.

You may think your organization has successfully digitally transformed because you've moved from physical paper to the electronic equivalent, but simply replicating paper in digital form doesn't truly reflect how people want to consume content today. While the PDF format provides a universal information container that can be styled to look just like paper, grounding your initiatives in it can disconnect you from how your citizens and stakeholders want to interact with you, transact with you and consume information from you.

The public sector is particularly vulnerable to falling behind the digital curve, as financial considerations typically force them to react to constituent trends once they're already taking place, unlike commercial enterprises that can afford to experiment and invest to drive innovation forward. Companies like Amazon, Apple, Facebook and Google are the ones driving digital change and setting consumer expectations, leaving public sector organizations to do their best to keep up.

Across the Ages: from Pre-Paper to Digital

To understand how much further you can take your digital transformation, let's first look at the information publishing eras and transitions that have led us to this point. Each stage is distinguished not only by how content is created, but also how it is consumed by recipients and stored for long-term preservation.



- **Pre-paper**, portable information dissemination revolved around stone tablets and chisels. Content creation was time-consuming and laborious, and needless to say, transporting these “documents” was extremely cumbersome.
- **The Paper Age** itself can be thought of in two discrete phases. In the first phase, content was created, distributed, consumed and stored on physical paper. In the second phase, word processing and desktop publishing became mainstream in the 1970s and 1980s, with content being created electronically but still destined for distribution and consumption on paper.
- **The emergence of the PDF format** essentially formed a bridge between the Paper Age and the Digital Age, with content created, delivered and archived electronically but still designed and formatted to be printable and mimic the style of paper documents. PDF files effectively served as “electronic paper,” offering many of the benefits of the digital world – searchability, near-instant delivery worldwide, etc. – but with each document still having a fixed, inflexible layout like printed paper. This was reasonable and acceptable when digital content consumption revolved almost exclusively around desktop computers and laptops, but as we’ll see in the next section, it becomes problematic in today’s increasingly mobile-centric society.
- Today, we’ve entered the true **Digital Age** – where the vast majority of content is created, delivered, consumed and stored entirely electronically. Formats such

as HTML that can automatically adapt their presentation to a plethora of display devices offer significant advantages over traditional fixed-layout approaches, while better integrating with multimedia elements such as instructive animations, video clips and audio recordings.

The Problem with “PDF Paper”

Most public sector digital transformation initiatives have leveraged the PDF format to replace paper-based documents. While PDF offers a variety of benefits for distribution, storage and retrieval, it is no longer ideal for presenting and displaying information. The ability of a PDF file to precisely replicate the look of paper was initially valuable in getting people comfortable with electronic content consumption, but in today's multi-device landscape the fixed layout of a PDF is more of a problem than a solution.

There is clearly a vast array of devices upon which readers can consume information today, each with its own unique display characteristics. For optimal viewing, the presentation of content must dynamically adapt to each display device. Fixed-layout documents that can't re-flow the text for optimal viewing detract from consumers' ability to access that content.

While our domain expertise is in public sector meeting management, these concepts are universal, and a generalized example will help make the problem clearer. Consider looking up a restaurant online and wanting to read its menu. If the menu is available on the website in HTML, it should automatically reformat itself for your viewing device – whether a smartphone, tablet, desktop computer monitor or even a 'smart' TV. Having the menu only available on the website as a downloadable PDF would be inconvenient, annoying or at worst, practically unreadable. The text of the menu would likely be far too small to read when the document is zoomed out, but zooming in to a readable size would require the reader to scroll around too much to see everything offered.

Even forward-looking technology innovators like ourselves are guilty of sticking too long to legacy approaches in some of our marketing collateral. While we have HTML representations of all of our materials and offer modern elements such as videos and live webinars, we have continued to create brochures as portrait (vertically-oriented) PDFs. For those reading the brochure on a desktop computer or laptop, most monitors these days are widescreen, making landscape (horizontally-oriented) PDFs more appropriate. And while portrait orientation does align with how people typically hold their smartphones, as noted above, the PDF may be illegibly small or require an irritating amount of scrolling for consumption on such a device.

Of course, we make the same information also available in HTML form, so it's easily

accessible to everyone – but the point is that the value of the PDF brochures has become more limited.

The Myth of Minimizing Resistance by Mimicking

Why do so many meeting administrators and report contributors still focus on what a document would look like on paper, even if it's being created, consumed and archived electronically? Sometimes it's simply inertia – just doing it the way it's always been done. Other times replicating previous paper layouts may be seem like the easiest and quickest way, particularly for users that already have templates set up and don't want to take the time or effort to change them. And in many cases, the organization may be using outdated or feature-limited software that only offers print-styled output options without the ability to create more dynamic formats such as HTML.

Often, however, the emphasis on mimicking paper is intentional, with well-meaning goals but unintended (and even opposite) results. The theory was that familiarity would help overcome fear of change. By replicating the layout and format of earlier paper documents as closely as possible, it was hoped that participants and stakeholders – particularly those who weren't technology-savvy – would become comfortable with electronic delivery more quickly, thus accelerating acceptance and adoption.

While this may sound logical 'on paper' (pun intended), in practice simply duplicating paper in electronic PDF form can become an inhibitor to adoption. Focusing on cloning the 'old' rather than leveraging and emphasizing the advantages of the 'new' can marginalize the benefits of the electronic approach while giving those resistant to change more excuses for digging their heels in. Thoughts such as "it's hard to read because it's not formatted properly for my device" or "I need to learn something new but it's no better than paper" may resonate in readers' minds more than "I didn't need to carry around paper," "I can search the text" or "I received the documents instantly without needing to pick them up".

It may seem obvious to readers of this white paper that there are many advantages to electronic documents even if they're still just formatted like paper: they're searchable, accessible from anywhere, lightweight, free of printing costs, and so on. But those benefits won't cross the mind of a technology-resistant councilor struggling to read an inappropriate document layout during a fast-paced municipal meeting.

To truly get the buy-in of these technology laggards, the benefits of electronic documents must be brought to the forefront while letting go of past practices that can make them hard to consume on modern devices. Adding live links within print-formatted PDF documents can make navigation easier than stacks of paper – but if

those links just result in readers having multiple PDFs open that they must flip between, the reader can still lose their way almost as easily as printed material.

As we discussed in our blog post about the sociology of technology adoption, software that allows users to work in familiar ways can help them feel comfortable by giving them all of the capabilities they had with paper (such as highlighting text and annotating with virtual sticky notes). But continuing to present the content the same way can significantly detract from the overall experience.

It's also important to note that the need to accommodate technology-resistant stakeholders has decreased significantly even in just the past couple of years. People who prefer paper are now the exception, not the norm. The workforce and public council members are getting younger, and inherently want to consume and interact with information in electronic formats optimized for their preferred devices.

Whither PDF?

So should organizations eliminate the use of PDFs in favor of more flexible approaches such as HTML? No, at least not yet. PDF still has its place and offers many benefits, including standardization, extensive software compatibility, classification, authenticity validation – such as verifiable electronic signatures – and its specific inclusion in recent or proposed accessibility legislation.

The key is to separate the content itself from the presentation of that content. Organizations want to store information in a universal format that they're confident could be recalled at any time in the future. ISO-standardized PDF variants such as PDF/A (designed for archiving and long-term preservation) and PDF/UA (focused on ensuring universal accessibility through assistive technology such as screen readers and magnifiers) are perfectly capable of achieving that goal.

In fact, these accessibility tools prove the point that the presentation layer can be separated from underlying information; a person with a visual impairment using a screen reader may have no idea – and frankly, doesn't care – if the layout of the PDF was stylized to look like paper. Using PDF as an information container rather than a presentation method can free the content to display optimally on any device. And once we reach that point, there's no reason for content creators to give any thought to what the result would look like on paper.

That said, other technologies such as XML (for structured information) and HTML (for presentation) could ultimately achieve the same goals, and offer far greater flexibility for dynamic integration with other elements such as multimedia. While some publishing

tools offer the ability to embed video in a PDF document, HTML enables the creation of much richer user experiences – for example, allowing readers to click on an item in a council meeting agenda to jump immediately to that point in the video recording of the session.

Preparing for a Digitally Optimized Future

If your organization is still publishing most of its public-facing documents only as PDF files, or spending too much time on laying out your documents to be print-friendly, what steps can you take to better align with today's paper-free stakeholder expectations? Your next actions will depend on exactly how far along you are in your digital transformation journey, but here are ten steps that many organizations can do to start working towards a digitally-optimized goal:

- **Familiarize yourself with the latest compliance changes.** Before you get started, do some research into the current requirements set forth by the ADA, Section 508 and WCAG 2.0. The laws and recommendations are always changing, so staying up-to-date on the latest developments will help you ensure true compliance.
- **Test your documents on devices.** Try each of your public-facing documents on a variety of viewing devices (smartphones, tablets, desktop computers, etc.) to identify presentation challenges faced by your constituents
- **What content will do best in HTML?** Consider which types of your content could benefit most from being published in HTML – not everything will benefit to the same degree (cite examples of document types that can benefit most from HTML, and others that can be left as PDF longer)
- **Build awareness and support.** Educate staff and management to raise the level of understanding and create a sense of urgency for change.
- **Audit public facing websites and documents.** There are a number of online tools available to scan your website and online documents for a number of accessibility issues, including missing alt tags, styles and more, and highlights the areas that require accessibility remediation by injecting icons and indicators directly onto your page within your browser.
- **Establish a digital accessibility policy.** Appoint a digital accessibility lead and cross-functional committee to develop standards and conformance milestones, and a monitoring and review process, in addition to roll out and training plans for staff. If you don't have the expertise in-house, we have relationships with key third-party

organizations that can assist you to both analyse and remediate existing documents as part of the implementation of an overall digital accessibility policy.

- **Implement a digital accessibility policy and train staff.** Educate staff on the steps for creating accessible documents and any changes to the internal review and approval process prior to publishing content online.
- **Work with key vendors.** Establish technology standards and work with IT to develop a plan to migrate to accessible compliant products and services over time.
- **Monitor and review.** Actively monitor online environments for additional training and/or tools required to ensure ongoing compliance.
- **Communicate to stakeholders.** Be sure to also remember to keep key stakeholders up to date on changes and procedures for obtaining assistance for resolving any digital content accessibility issues.

Maximizing the Medium

Of course, digital transformation isn't just about the method of creating content and the medium used to deliver, store and consume that information – it's also about people, processes, organizational culture and change management. But understanding how your constituents want to receive and interact with information from you is crucial in building a strategy to address their expectations, and choosing the right electronic form helps avoid the need to undergo yet another major transformation in the near future. There's a difference between having moved into the digital world, and allowing your constituents to take full advantage of the digital experience.

As a vendor, eSCRIBE is also evolving. In our early software versions, we literally replicated customers' previous paper agendas in electronic form – even matching ruler measurements to the millimeter. Today, meeting artefacts such as agendas can be easily published both as accessibility-compliant PDFs and as HTML pages with rich multimedia integration. Going forward, we will continue putting less focus on PDF formatting nuances, and a lot more emphasis on better ways for public sector organizations to present content that their audiences can flexibly interact with and consume.